

CAREER IN TREE IMPROVEMENT AND GENETIC RESOURCES

Afaq Majid Wani And Satyendra Nath

India is one of the ten most forest-rich countries of the world along with the Brazil, Canada, United States of America, China, Democratic Republic of the Congo, Australia, Indonesia and Sudan. Together, India and these countries account for 67 percent of total forest area of the world. Forests contribute a lot to the ecology and economy of the nations and play a major role in improvement of quality of life of the people. Due to the impact of biotic pressure on our forests, many forest areas spread across the country has been depleted and degraded which is a cause of serious concern. There is, therefore, an urgent need for improvement of forests in the country and that can done by 'Tree Improvement' professionals.

Tree Improvement is the science of development and care of forest. It is all about management of forests by protecting, conserving and upgrading forest resources which also include farming of trees used as timber. This stream of science assesses, characterizes and utilizes the genetic diversity of forest tree species and carries out tree improvement of major plantation species through breeding, and appropriate silviculture packages. The main objective of this branch of science is to increase the productivity of our forests and plantations to meet the requirements of the forest fringe communities and forest based industries. Besides this, it also helps in restoring the ecology of degraded areas to expand the forest and tree cover and improve the environmental quality.

Tree improvement relies basically on understanding variation that naturally occurs in tree populations. It increases the value of a tree species by 1) selecting the most desirable trees from natural stands or plantations, 2) breeding or mating these select trees and 3) testing the resulting progeny. The trees involved in this process are referred to as the breeding population. This three-step process is then continuously repeated to further improve the average value of the breeding population.

Postgraduate and Doctoral programmes in Tree Improvement & Genetic Resources are available at the

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following Universities

1. Dr. Bala Sahib Sawant Konkan Krishi Vidyapeeth, Dapoli, Ratnagiri, Maharashtra
2. Dr. Punjabrao Deshmukh Krishi Vidyapeeth, P O Krishinagar, Akola, Maharastra
3. Dr. Yashwant Singh Parmar University of Horticulture and Forestry Nauni, Solan, Himachal Pradesh
4. Kerala Agricultural University, Vellanikkara, Trichur, Kerala
5. Navsari Agricultural University, Dandi Rd Navsari, Gujrat
6. Orissa University of Agriculture & Technology, Bhubaneswar, Khurda
7. University of Agricultural Sciences, Krishinagar, Dharwad, Karnataka
8. Uttarakhand University of Horticulture and Forestry Bharsar District -Pauri Garhwal Uttarakhand

(List is indicative only)

EMPLOYMENT AND CAREER OPPORTUNITIES

- Different areas where Tree Improvement & Genetics Resources and Tree Breeding Professionals are being placed are summarized below
- In State Forest Services (SFS) and in soil conservation department these Professionals are engaged as Forest Produce Inspectors and Assistant Soil conservation Officer.
 - In Jammu, they are recruited as Assistant Director of Forest Protection
 - They can also be absorbed by the Indian Forest Services (IFS)
 - Those with master's degree in Tree Improvement along with NET qualification in Forestry can opt for academics and can take up University Teaching, research and extension work as Assistant Professors, Lecturers, Junior Research Officers and Research Officers. In Krishi Vigyan Kendras students having two years experience can apply for the post of Subject Matter Specialist.
 - The master's degree holder in Tree Improvement can also become scientists by qualifying the Agricultural Research Services (ARS) examina-



tion conducted every year by Agricultural Scientist Recruitment Board (ASRB) of ICAR, Pusa, New Delhi. They can also pursue teaching and research in the institute/ Universities abroad. Besides this they can be absorbed in Indian Council of Forestry Research and Education (ICFRE) and its affiliated Forestry research institutes, Wildlife Institute of India, Forest Survey of India, Zoological Parks, Remote Sensing and GIS for forest improvement works.

- The can also get Junior Research Fellowship, Senior Research Fellowship, Research Associateship and Post Doctoral Fellowship under the projects running in the Institutes/Universities
- In the banking sector, they can be appointed as Agriculture Officer and Extension Officer in banks like NABARD, Syndicate bank, Punjab National Bank, State Bank of India, Oriental Bank of Commerce, Dena Bank, Union Bank, Bank of Barouda, IDBI etc.
- These professional can run their own NGO by taking some projects with

the funding from Indian or foreign agencies.

- Employment opportunities are also available in the field of Plant Nursery, Furniture industry, Forest based Industries like Wood Industries, Pulp and Paper Industries, Katha Making Industry, Saw Mills, Wood Seasoning Plants, Wood Preservation Treatment Plants, Resin & Turpentine Industry and Paper Mills.
- International agencies like International Union for the Conservation of Nature and Natural Resources (IUCN), World Wide Fund for Nature (WWF), World Bank etc also requires such professionals in forestry and environmental sector.
- Other career options available are still photography, film making and wildlife journalism. There may also get opportunities in private television channels.

ADMISSION PROCEDURE

Master's program: Graduates in Forestry, Agroforestry, Horticulture, Agriculture or Plant sciences who have completed four years degree program in any one of the State Agricultural Universities / Colleges affiliated to State

Agricultural Universities alone are eligible to apply for masters in Tree Improvement & Genetic Resources and Tree Breeding. The procedure of selection in Master's degree is either through qualifying the entrance exam or on merit basis. Indian Council of Agricultural Research conducts all India entrance test for the award of Junior Research Fellowship & admission to the limited seat of master's degree programme in different State Agricultural Universities (SAUs)/ colleges affiliated to SAUs.

Doctoral program: For Ph. D. in Tree Improvement & Genetic Resources and Tree Breeding the candidates with M. Sc. in Tree Improvement & Genetic Resources/ Tree Breeding/ Forestry/ Agroforestry/ Forest Products/Wood Science & Technology Horticulture/ Agriculture /AIFC diploma. One can get admission in the SAUs/ college affiliated to SAUs or on the basis of qualifying entrance examination followed by interview or directly on the merit basis.

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