



A Report on the

Fifth International Casuarina Workshop

Organized by

**Institute of Forest Genetics and Tree Breeding
Indian Council of Forestry Research and Education
Coimbatore**

Background information

Over two million hectares of Casuarina plantations protect human habitats and agricultural fields, help in reclaiming degraded sites and meet industrial raw material requirements for paper and plywood making and biomass-based energy generation. Cultivation and harvesting of Casuarina generate livelihood opportunities for farmers and agriculture-dependent labour force in rural areas. Four earlier successful international casuarina workshops were conducted in Canberra, Australia (1981), Cairo, Egypt (1990), Da Nang, Vietnam (1996) and Haikou, China (2010). During the fourth meeting held in China, ICFRE proposed to host the Fifth International Casuarina Workshop in India. According to the approval of the Ministries of Environment and Forests, Home Affairs and External Affairs were obtained through ICFRE to conduct the Fifth Workshop in Mamallapuram, Chennai, India, between 03 and 07 February 2014 under the aegis of IUFRO Working Party S2.08.02, *Improvement and Culture of Nitrogen-Fixing Trees*. The objective of the Workshop was to bring together researchers and managers to update the knowledge on this important group of species so that the results are effectively used for improving livelihood opportunities in rural areas as envisaged by the working title of the Workshop: *Casuarina Improvement for securing rural livelihoods*.

International Organizing Committee

Director General, ICFRE, India (Chair)
N. Krishna Kumar, IFGTB, India (Vice-chair)
K. Pinyopusarerk, CSIRO, Australia
Antoine Kalinganire, ICRAF, Mali
Claudine Franche, IRD, France
Robert Schlub, University of Guam, USA
A. Nicodemus, IFGTB, India (Secretary)

Dates and Venue

The Workshop was held at Mamallapuram, Chennai, Tamil Nadu from 03 and 07 February 2014.

Participation

The workshop was attended by 80 participants of which 20 were from outside India representing Australia, Bangladesh, China, France, Mali, Philippines, Senegal, Thailand and USA.

Inauguration of the Workshop

The workshop was inaugurated by Dr V Rajagopalan, Secretary, Ministry of Environment and Forests, Government of India. Shri. A.K. Srivastava, Additional Director General of Forests, MoEF, Government of India delivered the Keynote Address. Dr. P. Balakrishna Pisupati, Chairperson, National Biodiversity Authority, Mr Khongsak Pinyopusarerk, Honorary Fellow, CSIRO, Australia, Dr Antoine Kalinganire, IUFRO Working Party Coordinator, Mali were the Guests of Honour. Dr N. Krishna Kumar, Director, IFGTB presided over the function. During the inaugural address Dr Rajagopalan explained the international gathering the Green India



Inauguration of the Fifth International Casuarina Workshop

Mission which focuses on increasing tree cover in India. The Mission targets 5 million ha area to be brought under green cover and improving the quality of vegetation in another 5 million ha area of forest. India being a signatory to REDD+ programme attaches much importance to afforestation programmes and other issues concerning the climate change. Currently, 22% of the land area is under forest cover. To achieve the 33% of area under forest cover, he said the agro-forestry species like Casuarina assumes greater importance and funds available under the Mission can be utilized for improving the species.



Dr. N. Krishna Kumar, Director, Institute of Forest Genetics and Tree Breeding, Coimbatore while welcoming the participants from different institutions and countries explained the the long-term improvement efforts and commitment of IFGTB in Casuarina research. He also called for international cooperation in sharing knowledge and genetic resources to benefit all concerned. Dr. A. Nicodemus, Organizing Secretary of the Workshop proposed the vote of thanks.

Dr. V. Rajagopalan, Secretary, MoEF delivering the Inaugural Address



Participants of the Fifth International Casuarina Workshop

Technical Programme



Eighty-one abstracts were submitted prior to the workshop which were compiled, printed and provided to all participants of the workshop. The full papers of those presented in the workshop will be peer-reviewed, edited and published as proceedings of the workshop. The following are main themes on which the papers were presented and discussed.

Technical Session in progress

a) The current status of casuarina planting, utilization and research for improved products and services in the 10 countries represented in the workshop were presented. Strategies to meet the diverse end-use and environmental requirements were discussed.

b) The importance of assemblage, testing and conservation of Casuarina genetic resources both in its natural and planted habitats was emphasized to maintain a reservoir of variability which can cater to all products and services expected from Casuarina plantations.

c) The extent of genetic gain realized from the ongoing systematic breeding programmes and its impact on securing rural livelihoods and industrial raw material were discussed. It was decided to place more efforts on improving the accessibility and affordability of genetically improved planting material to smallholding farmers.

d) A major part of the meeting was devoted to discuss the need to utilize the nitrogen-fixing ability of Casuarina to meet the challenges of cultivating trees in salt-affected, moisture-stressed and nutrient-deficient sites. It calls for further research on host-microbe interactions and the molecular basis of biological nitrogen fixation.

Based on presentations made and group discussions, the participants drafted recommendations under four broad areas for follow-up action. Accelerating breeding programmes, improving cultivation techniques and pest management, molecular biological approaches to Casuarina-Frankia symbiosis and biological nitrogen fixation, applied research on wood quality and harvesting methods to meet industrial requirements are the major recommendations. The meeting also called for international cooperation in germplasm exchange to sustain the ongoing genetic improvement programmes.



Field visit to farmers' plantations in Veedur Village, Villupuram District, Tamil Nadu.

Field visit

Participants of the workshop were taken to different field activities related to casuarina cultivation and improvement in Tamil Nadu and Puducherry on 05.02.2014. The one-day field visit was structured to provide the delegates an understanding on the cultivation and utilization of casuarina in India from the farmer, researcher and industry's perspective. Accordingly the stops for the visit included a typical village with a large casuarina cultivation, progeny and clonal trials of IFGTB, nurseries operated by paper industry and traditional nursery people, a seed orchard jointly managed by IFGTB and nursery operators. In order to cover these spots, participants travelled up to Puducherry, located about 80 km south of Mamallapuram, the workshop venue and they could see that casuarina is inseparable from the landscape all along the travel route.

Workshop Sponsors



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