

The Sixth International Casuarina Workshop

Climate-resilient Casuarina for Bioenergy Production

Organized by



Kasetsart University
Bangkok, Thailand

In collaboration with



IUFRO Working Party 2.08.02:
Improvement and Culture of Nitrogen Fixing Trees
IUFRO Task Force:
Sustainable Forest Biomass Network Task Force

Background

The family Casuarinaceae comprises four genera and more than 90 species occurring naturally from Australia to the Pacific islands and South-east Asia. Casuarinas are nitrogen-fixing trees of considerable importance in many tropical and subtropical regions of the world. Over 2 million hectares have been planted for wood production, shelterbelts, land rehabilitation and for ornamental purposes. The substantial socio-economic importance of species in the genus *Casuarina* has ensured ongoing global interest in research and development of this group of nitrogen fixing trees. Many Casuarinas are truly multipurpose species and their plantings are invariably associated with agricultural systems offering stability to fragile sandy coastal ecosystems and offering services of protection, soil organic matter, poles and fuelwood. More recently a few species are increasingly planted for commercial wood fibre. Most Casuarinas have high wood density and calorific characteristics making them very suitable for use as woody energy.

The extensive planting of Casuarinas throughout the tropics provide several socio-economic, environmental and ecological services. Their fast growth, adaptability to a range of edaphic and climatic conditions, multiple end uses and the symbiotic nitrogen fixing ability make them a highly preferred group of trees for farmers. They protect human habitats and agricultural fields through shelterbelts and windbreaks, help in reclaiming degraded sites and meet industrial raw material requirements for papermaking, plywood making and biomass-based energy generation. Nursery development, cultivation and harvesting of Casuarina generate livelihood opportunities for farmers and agriculture-dependent labour force in rural areas in countries such as India and China as well as some countries in Africa.

Previous International Casuarina Workshops

A strong network of researchers from several countries has been functioning more than three decades under the IUFRO Working Party on Improvement and Culture of Nitrogen Fixing Trees. Continuous collaboration among the Network members has resulted in

efficient utilization of Casuarina resources for the benefit of farmers, industries and government departments in different ways. Members of the Network have been meeting periodically to share the latest knowledge on Casuarina and prioritize future research and development needs. So far there have been five international Casuarina workshops.

The first in Canberra, Australia 1981;
The second in Cairo Egypt 1990;
The third in Da Nang, Vietnam 1996;
The fourth in Hainan, China 2010; and
The fifth in Chennai, India 2014

Deliberations of each of the five Workshops have been published in the form of edited proceedings which forms the most valuable source of information on Casuarina.

It is proposed that the sixth international casuarina workshop be held in Thailand during 2019. Thailand is home to natural populations of *Casuarina equisetifolia* and cultivation of Casuarina is fast emerging as an industrial activity for biomass-based power generation. It can also serve as an alternate pulpwood species for the paper industries and contribute towards coastal protection and beautification of landscape in areas of tourism importance. Scientists from Thailand have attended every casuarina workshop since its inception in 1981, and made significant contribution to the research and development of casuarinas leading to improved livelihood and environments. Having the workshop in Thailand offers great opportunity for more participation by local researchers and managers associated with tree cultivation coastal protection and bioenergy production.

Objectives

The objectives of the Workshop are to bring together researchers and others interested in development of Casuarinas and update and compile the knowledge on this important group of species so that the results are effectively used for sustainable wood production and industrial application particularly for paper and bioenergy production and mitigation of climate change.

Technical Sessions

Research articles are invited in the following themes of research and utilization

- Silviculture and Agroforestry
- Symbiotic nitrogen fixation
- Genetics and tree breeding and biotechnology
- Insect and disease management
- Industrial plantations for pulpwood, biomass and bioenergy production
- Environmental improvement and mitigation of climate change.

Expected Output

The expected outputs from the workshop will include a written proceedings and further strengthening of the small international network which support global R&D into the casuarinas.

Participants

Up to 100 participants from Asia, Africa, Australia, America, Europe and the Pacific are expected to attend.

Workshop Organisers

It is requested that Kasetsart University hosts the next international Casuarina workshop in collaboration with the IUFRO Working Party 2.08.02 Improvement and Culture of Nitrogen Fixing Trees and IUFRO Task Force: Sustainable Forest Biomass Network Task Force. The University is a world leader in agricultural and forestry research institution, and is best placed to host this workshop. An international organizing committee with following members will manage the conducting of the workshop.

1. President, Kasetsart University, Thailand (Chair)
2. Khongsak Pinyopusarerk, CSIRO, Australia
3. David Bush, CSIRO, Australia
4. Abel Nicodemus, IFGTB, India
5. Claudine Franche, IRD, France
6. Chonglu Zhong, RITF, China
7. Bunvong, KU, Thailand
8. Songkram, KU, Thailand
9. Dean of Faculty of Forestry, KU, Thailand
10. Viktor Bruckman, Austrian Academy of Sciences, Austria
11. Maliwan Haruthaithanasan, KU, Thailand (Secretary)

Funding Support

It is expected that a majority of participants will come from developing countries and as such they require travel assistance. Funding support will be sought from a number of potential donors so that key scientists and researchers are able to attend and contribute.