

Acacia 2014 - Sustaining the Future of Acacia Plantation Forestry

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The [Acacia 2014 meeting](#) held on 18-21 March 2014 in Hue City, Vietnam, was a joint conference of the recently formed IUFRO Working Party WP 2.08.07 on Acacia Genetics and Silviculture, WP 1.02.06 on Ecology and Silviculture of Acacia and WP 2.04.01 on Population, Ecological and Conservation Genetics and was hosted by the Vietnamese Academy of Forest Sciences (VAFS). The meeting drew a total of 182 participants representing 22 countries.

Background

Plantations of Australian Acacias have expanded rapidly in the past three decades and there are now about 3M ha planted worldwide. The most significant areas are of tropical acacias in SE Asia where *A. mangium*, its hybrid with *A. auriculiformis* and *A. crassicaarpa* are the main taxa. In Vietnam over 1M ha of acacia plantations supply a burgeoning furniture manufacturing industry as well as the export woodchip market.

Recognizing the evident need for an international forum for consideration of the science underpinning this industry, IUFRO WP 2.08.07 Genetics and Silviculture of Acacia was formed and Vietnam selected for the inaugural Conference. While the main focus of the WP is likely to remain on tropical acacias, scientists concerned with temperate taxa such as *A. mearnsii* and *A. melanoxylon* are welcome to join.

The meeting was organized around three themes and a new forum format for discussion of science for management applications and policy decisions was tested:

Plantation Management for Sustainable Wood Production

Plantation sites are at their most vulnerable from the start of the harvest to canopy closure of the next rotation. Managing for an appropriate balance between harvesting efficiency and long term productivity is therefore critical. Furthermore, maintaining stocking is one of the keys to maintaining productivity.



Photo: Harvesting logs of 8 year old Acacia hybrid for solid wood and pulp in Vietnam (by Chris Harwood, CSIRO Ecosystem Sciences and CSIRO Sustainable Agriculture Flagship)

The paths towards the practical adoption of increasing technical knowledge by smallholder farmers are still unclear and here input from social scientists should be sought. The opportunities for producing combined solid wood/pulpwood crops are increasing but it needs to be ensured that the added value is shared fairly with the growers.

Risk Evaluation and Management

Diseases and pests present ongoing and ever evolving challenges for plantation growers. Organisms discussed at the conference included Ceratocystis wilt, Ganoderma and Phytophthora root rots, leaf and shoot rusts and defoliating insects.

A cumulative increase in pests and disease problems of acacia species can be expected in the future. A sound understanding of basic science, epidemiology and ecology of every target organism is critical for a successful management.



Photo: Furniture from Acacia hybrid wood for the domestic market in Vietnam (by Chris Harwood, CSIRO Ecosystem Sciences and CSIRO Sustainable Agriculture Flagship)

Genetic solutions, including long term genomics applications, will be appropriate in many cases and closer collaborations are needed between breeders and pathologists/entomologists. Effective pest and disease control measures need to be applied not only to industrial plantations but to those of small growers who are unable to finance the required R&D.

Acacias produce copious amounts of long lived seed, and can present a potential weediness problem and impact on biodiversity in certain environments. Growers may need to consider procedures for managing these potential impacts which vary around the world and are not considered a current problem in SE Asia.

Genetics and Breeding

The maintenance and expansion of genetic diversity in breeding populations requires attention. The issue of cross-contamination of breeding populations is emerging for *A. mangium* and *A. auriculiformis* in countries where the two species and their hybrid are grown together.

The emergence of serious disease threats to acacia plantations represents the most important challenge that breeders must address in collaboration with pathologists and entomologists.

There are immediate applications for molecular markers as breeding tools. Substantial work on genomics and gene action of acacias is now underway but routes to operational application are still to be determined.

Forest Industry Forum on: Science for management applications and policy decisions

This initiative fostered discussion between panelists representing government, industry and research organizations in Vietnam.

The following key messages were delivered:

There is a need for implementing policies which promote investment in processing and reduce dependence on the chip export market.

It is essential to achieve potential rates of production from plantations thus supporting increased processing capacity, and reducing the dependence on import of logs.

There is a need for a coherent policy approach to monitor and quarantine diseases.

While there have been some examples of successful technology transfer, the need for a more planned and systematic effort needs to be emphasized in particular for small growers.

The key conclusion is that there are many unresolved technical issues with acacia plantation forestry and there is a need for a more integrated and inter-disciplinary approach to defining management systems which deliver sustainable and profitable plantation productivity. The importance of improved interaction with growers both large and small was also emphasized, together with appropriate policy settings. Research *per se* is necessary but not sufficient.

Outlook to future activities

The conference proceedings can be found at: <http://iufroacacia2014.com.vn/conference-proceedings>. Key papers will be published in a Special Issue of the journal Southern Forests (Vol1 2015). The WP resolved to meet again in 2017 with Indonesia hosting.

