



Australian Government

Department of Agriculture, Fisheries and Forestry

A U S T R A L I A

INNOVATIVE FORESTRY AND FOREST INDUSTRIES RESEARCH IN AUSTRALIA

Sustainability, biodiversity, climate change and forest fires are among the many global issues that shape research into forestry, forest industries and the ecosystem sciences.

In Australia, national and regional issues also influence research. They include plantation expansion, the potential environmental benefits of plantations, import replacement, changes from public to private ownership of forests, and globalisation of forestry and the forest industries (international ownership).

Australia's global competitive advantage depends on the efficient establishment, management and harvesting of plantations.

Partnerships

Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) is one of the world's largest and most diverse research institutions. Its capabilities and operations embrace areas of economic, environmental and social value across Australia and around the globe. Among them are forestry and forest products, agriculture, the environment, minerals and energy, manufacturing, communications, information technology, construction and health. CSIRO forms partnerships regularly with other research organisations and individual companies in the forest industries.

The Australian Government has also formed several partnerships with industries to advance research and development.

One of them is the Forest and Wood Products Research and Development Corporation (FWPRDC). The corporation is jointly funded by the Australian Government and the forest and wood products industries through a levy attached to processed saw logs. The corporation's role is to identify research priorities and to commission, manage and evaluate wide-ranging research in such areas as wood production, extraction, processing, economics and marketing.

Cooperative Research Centres (CRCs) are another. The Government set them up to bring together researchers from CSIRO and other government laboratories, universities, public agencies and private industry to fast track research of national significance.

Major achievements

The partnerships are proving successful.

CSIRO Forestry and Forest Products is combining internationally award-winning research with efficient wood and fibre quality tools to improve value recovery from harvested timber resources. This will increase the real value of forest and timber resources over the whole industry chain through greater production efficiencies and differentiated product pricing.

Silviscan, one of the international award-winning instruments it has developed, can undertake rapid, non-destructive measurement of wood-fibre properties. It is one of the many tools and technologies CSIRO Forestry and Forest Products has developed to help forest growers and processors capture the value of improved wood and fibre quality.

Microwave wood modification technology developed through the University of Melbourne has become the basis for a multimillion dollar CRC for Wood Innovation. The CRC is working on the next stage — to develop microwave technology for timber processing, and promote its use and commercialisation. Applications for this technology include automated and conveyor belt drying and preservative treatment of both softwood and hardwood sawn wood, stress relaxation of plantation grown eucalypt roundwood for sawing and the production of new composite and solid wood products.

The CRC for Wood Innovation is also researching value added design of solid wood components and furniture, using proprietary technologies that automate the bending of solid wood components and surface activate the wood for improving the durability and strength of coating systems.

Australia's severe dryland salinity problem threatens the nation's agriculture. CSIRO, in partnership with other Australian Government organisations, is making significant progress on a tree-breeding program to make tackling the problem economically feasible. It has created breeds of eucalypts and pines that are not only hardy enough to withstand drought and other stresses, but also produce valuable products.

CSIRO Manufacturing, Infrastructure and Technology has made an international award-winning contribution to the development of advanced probability theories to increase basic understanding of the structural properties, fire performance, durability and safety of wood as a building material. The knowledge has been applied to design codes for wooden structures that take account of wood's variability and reliability as a structural material. It has also led to important new procedures for assessing how wood materials perform in fire, expanding the applications for wood in building construction.

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CRC Wood Innovations



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Global presence

Australia has a proud history of involvement in forestry projects in developing countries. Research organisations — such as CSIRO and the Australian Centre for International Agricultural Research (ACIAR) — are working with developing countries in the Asia-Pacific region and Africa. The projects have helped improve the livelihoods of many people through more productive and sustainable forest management, and developed local forest industries.

Contacts

Key Australian Organisations Engaged in Forestry and Forest Industries Research

CSIRO	
The Commonwealth Scientific and Industrial Research Organisation is Australia's largest scientific research organisation. It has more than 6300 staff in 63 locations in Australia and overseas. CSIRO divisions involved in forestry and forest product-related research are listed below:	www.csiro.au
CSIRO Forestry and Forest Products	www.ffp.csiro.au
CSIRO Land and Water	www.clw.csiro.au
CSIRO Manufacturing, Infrastructure and Technology	www.cmit.csiro.au
CSIRO Sustainable Ecosystems	www.cse.csiro.au
Cooperative Research Centres	
CRC for Sustainable Production Forestry	www.forestry.crc.org.au
CRC for Wood Innovation	www.crcwood.unimelb.edu.au
CRC for Tropical Rainforest Ecology and Management	www.rainforest-crc.jcu.edu.au
CRC for Bushfires	(Newly established; no web site yet)
CRC for Greenhouse Accounting	www.greenhouse.crc.org.au
CRC for Functional Communication Surfaces	www.crc-fcs.com
CRC for Plant Based Management of Dryland Salinity	www.crcsalinity.com
CRC for Catchment Hydrology	www.catchment.crc.org.au
Universities	
Australian National University	http://research.anu.edu.au and http://sres.anu.edu.au/people/research_interests.html
University of Melbourne	www.forestry.unimelb.edu.au
Southern Cross University	www.scu.edu.au/schools/rsm
University of Tasmania	http://info.utas.edu.au/
Australian Pulp and Paper Institute, Monash University	www.eng.monash.edu.au/chemeng/appi.html
Research agencies	
Rural Industries Research and Development Corporation (RIRDC)	www.rirdc.gov.au
Forest and Wood Products Research and Development Corporation (FWPRDC)	www.fwprdc.org.au
Land and Water Australia	www.lwa.gov.au
Australian Centre for International Agricultural Research	www.aciar.gov.au
State forestry agencies	
Department of Primary Industries, Queensland	www.dpi.qld.gov.au/forestryresearch
Forestry Tasmania	www.forestrytas.com.au/forestrytas/pages/research.html
State Forests of New South Wales	www.forest.nsw.gov.au
Department of Conservation and Land Management, Western Australia	www.calm.wa.gov.au
Department of Sustainability and Environment, Victoria	www.dse.vic.gov.au
ForestrySA, South Australia	www.forestry.sa.gov.au