Land and water degradation, especially dryland salinity, poses a serious long-term threat to the sustainability of the Murray-Darling Basin. Changed management of agricultural landscapes, including well-targeted revegetation on a broad scale, is the most viable means to reverse the ongoing environmental degradation.

The Heartlands initiative will develop efficient strategies for well-targeted land use change in the Murray-Darling Basin. It will support implementation of the strategies, and verify their effectiveness.

Heartlands is an innovative long-term program combining on-ground-works with research and development. Scientists will work closely with catchment managers and the community to:

- Support catchment management
- Help to rehabilitate the landscape in a way that is sensitive to the needs of society and the communities affected
- Assist rural communities to manage land use change
- Estimate the benefits and costs of changed land management
- Provide confidence that the proposed solutions work.
The *Heartlands* initiative includes integrated research projects grouped under three headings:

**Integration and Adoption**
*Heartlands* will combine knowledge of production systems, catchment processes, and social and economic imperatives within focus catchments to produce:
- Recommendations for landscape vegetation design
- Systems of adaptive catchment management
- Identification of incentives and instruments needed to support land use change.

The knowledge that has been developed in focus catchments will be transferred to other parts of the Basin.

**Designing Land Use Change**
These projects contribute to the landscape vegetation design options by improving understanding of important catchment and regional scale processes. Appropriate land resource information is necessary.

**Production Systems**
Catchment management starts at the individual farm. The *Heartlands* initiative is developing alternative farm production systems that are economically viable as well as being environmentally sustainable.
The Heartlands Initiative Will:

- Contribute to new land use options that combine commercial success with sustainable resource use
- Provide ability to locate appropriate land management options - reforestation, environmental plantings, and improved agriculture - in specific locations in a catchment to maximise environmental benefit
- Build understanding of the extent and nature of land use change necessary to meet salinity and water quality targets, maintain water security and enhance biodiversity conservation
- Verify the effectiveness of landscape design strategies in meeting these environmental imperatives whilst providing long-term economic returns
- Provide practical support for community-based catchment planning, monitoring, and the implementation of adaptive catchment management processes
- Deliver support for policy initiatives to help in implementing necessary land use change.

Heartlands will build on existing knowledge and related research being undertaken by CSIRO and other organisations
Field research, implementation and monitoring of the land use change will take place in four catchments (100,000 to 300,000 ha in size) in the south-eastern Murray-Darling Basin. The two primary focus catchments are Billabong Creek (Upper Murray, NSW) and Honeysuckle Creek (Goulburn-Broken, Victoria). Work will also be carried out in Kyeamba Creek (Murrumbidgee, NSW) and in the Ovens Basin (North East, Victoria).

**Collaboration**
The *Heartlands* initiative is run as a consortium led by CSIRO and the Murray-Darling Basin Commission. Other groups participating include Catchment Management Boards and Authorities, State natural resource management agencies, Landcare groups, landholders, and extension staff. An essential element of *Heartlands* is to work jointly with other initiatives to achieve appropriate landscape rehabilitation.

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