CHAPTER 4: LAND RESOURCES

KEY POINTS

- In 1997–98, the Natural Heritage Trust provided major financial assistance to community groups and government agencies across Australia to address the widespread problems of land and water degradation and the loss of biodiversity in an integrated and strategic manner. Over 2,400 community and State/Territory agency projects received funding totalling $150 million through the One-Stop-Shop process.

- The Commonwealth is expected to provide $239.2 million in 1998–99, with a continuing emphasis on assisting communities and State/Territory agencies in preserving Australia's natural environmental capital, for Bushcare ($77.1 million), the National Rivercare Programme ($24.5 million), Murray-Darling 2001 ($38.4 million), the National Landcare Programme ($92.2 million) and the National Land and Water Audit ($7 million).

- $1.9 million will also be provided over the next four years through *Safeguarding the Future* to achieve the Plantations 2020 Vision of trebling Australia's plantation estate by 2020.

Australia's land resources form the basis of our unique natural heritage and our agricultural and pastoral industries. The Government has targeted the ecologically sustainable management of natural resources as a key priority to be addressed by both existing and new programmes. The Government aims to ensure the sustainable use and management of the natural resource base through a broad package of measures (see Table 4.1), as part of the Natural Heritage Trust. Other important related measures are Bushcare described in Chapter 3, and Murray-Darling 2001 and the National Rivercare programme which are described in Chapter 5.

SUSTAINABLE AGRICULTURE

Sustainable Management of Natural Resources

During 1997–98 the Commonwealth has developed Partnership Agreements through the Trust with all State and Territory governments laying the foundation for an integrated and cooperative approach to the ecologically sustainable management of Australia's natural resources. All governments recognise that environmental protection (including biodiversity conservation), sustainable agriculture and natural resources management have complementary goals and need to be in accord with the objectives and guiding principles of the National Strategy for Ecologically Sustainable Development. A significant improvement in biodiversity conservation is dependent on the achievement of an ecologically and economically sustainable agricultural sector.

Table 4.1: Land Resources — Programme and Tax Expenditure Estimates

Description	1997–98 $m	1998–99 $m	1999–00 $m	2000–01 $m	2001–02 $m
PROGRAMME AND TAX EXPENDITURE ESTIMATES					
Sustainable Agriculture					
National Landcare Programme					
Natural Heritage Trust (a)	35.3	39.3	53.3	50.3	–
Natural Resource Management Act (b)	54.4	55.0	36.3	36.2	36.2
Advanced Property Management Planning (Farmbis) (c)	3.0	3.0	4.3	4.3	–
Taxation					
Tax deduction for water conveying and Landcare activities	30.0	30.0	30.0	30.0	30.0
Taxation allowance for drought preparedness	10.0	9.0	10.0	10.0	na
International sustainable agriculture (d)	93.0	101.0	na	na	na
National Rangelands Strategy	0.1	0.1	0.1	0.1	0.1
Plantation and Farm Forestry (e)					
Farm Forestry (f)	9.1	13.8	19.1	14.0	na
Assessing the Resource Base					
National Land and Water Audit	7.7	7.0	10.5	10.5	–
CSIRO (total) (g)	14.1	14.5	14.6	na	na
Catchment management and monitoring	2.4	2.4	2.5	na	na
Land resources inventory	2.0	1.9	2.1	na	na
Land degradation processes and management	2.9	3.0	3.1	na	na
Remediation	1.2	1.2	1.2	na	na
Integrated resource use and society	1.6	1.7	1.7	na	na
Farm forestry	4.0	4.0	4.0	na	na
Murray-Darling Basin land management work plan	–	0.3	–	–	–
Tree planting strategies	na	na	na	na	na
Geoscience research and mapping	6.3	5.6	5.6	5.6	–
Bureau of Resource Sciences — various sustainable land and water resource programmes	0.8	0.6	na	na	na
National Dryland Salinity Research, Development and Extension Programme	na	na	na	na	na
CRC for Sustainable Development of Tropical Savannas	2.7	2.6	2.6	2.6	2.6
Mining and Land Rehabilitation					
Best practice in mining activities — Supervising Scientist Group	0.7	na	na	na	na
National codes of practice for radioactive ore mining	0.2	0.3	0.5	0.5	0.5
Enhancing the Sustainability of the Mineral Sector	0.2	0.2	–	–	–
Alligator Rivers Region	5.0	na	na	na	na
Christmas Island and Cocos (Keeling) Islands	0.3	0.1	0.1	0.1	0.1
Rum Jungle monitoring and maintenance	0.2	–	–	–	–
ANSTO Managing Mine Wastes Programme	3.1	3.1	3.2	0.1	na
Maralinga	22.4	16.5	19.8	–	–
CSIRO Minesite Rehabilitation Programme	1.5	1.5	1.6	na	na
Railway contaminated site remediation	5.3	19.9	–	–	–

– denotes nil; na denotes not available.

(a) Excludes the $80 million for Landcare tax/rebate measures.

(b) Includes all appropriations under the *Natural Resources Management (Financial Assistance) Act 1992*. Funding for the National Landcare Programme under the Act is subject to review.

(c) This activity is part of the Farmbis Programme, but is funded under the Natural Heritage Trust. Also see Box 4.1.

(d) Expenditure on international development cooperation for sustainable agriculture includes land resources management, as well as other agricultural, forestry and fishing activities, through AusAID and the Australian Centre for International Agricultural Research (ACIAR).

(e) The new programme Plantations for Australia: The 2020 Vision is described in this chapter but funding details are provided in Table 7.1 of Chapter 7, under the heading Enhanced Package of Climate Change Measures-PM's Statement. For other forest matters, see Chapter 3.

(f) This is the Farm Forestry component of the Department of Primary Industries and Energy which comprises funding from the Wood and Paper Industry Strategy and the Natural Heritage Trust.

(g) This is the total of the figures against indented descriptions below.

As an integrated approach to sustainable land and water management and the conservation of biodiversity, the Commonwealth will provide $246 million in 1998-99 from the Natural Heritage Trust and related funds. Five major programmes are:

- the National Landcare Programme which will provide over $92.2 million in 1998-99 in grants to community groups and State/Territory agencies to promote sustainable land and water management practices (see below);

- Bushcare with total funding of $77.1 million in 1998-99 for protection and re-establishment of native vegetation (see Chapter 3);

- Murray-Darling 2001 with total funding of $38.4 million in 1998-99 for integrated catchment management including on-ground activities (see Chapter 5); and

- the National Rivercare Programme with total funding of $24.5 million in 1998-99 for the rehabilitation, conservation and management of Australia's rivers on a sustainable basis (see Chapter 5); and

- the Farm Forestry Programme with total funding of $13.8 million in 1998-99 (see below).

In 1997–98, Trust-funded programmes supported over 2,400 community and State/Territory agency projects related to sustainable agriculture across Australia, through the One-Stop-Shop process at a cost of about $150 million, as follows:

- the National Landcare Programme provided $82.4 million for 1,195 projects,

- Bushcare provided $26.5 million for 632 projects,

- Murray-Darling 2001 provided $32.1 million for 435 projects,

- the National Rivercare Programme provided $5.7 million for 122 projects, and

- the Farm Forestry Programme provided $2.6 million for 53 projects.

Other funds were used nationally in 1997–98 to develop institutional and community frameworks and to support the long-term sustainable management of natural resources.

Landcare

The National Landcare Programme is one of the Commonwealth's primary tools in addressing land degradation and in promoting both an integrated catchment/regional approach to the ecologically sustainable management of the nation's natural resources and sustainable agricultural activity. The Commonwealth is providing overall $119.2 million to the National Landcare Programme (NLP) in 1998–99 to develop and implement resource management practices which enhance soil, water and biological resources and which are efficient, sustainable, equitable and consistent with the principles of ecologically sustainable development.

BOX 4.1: THE NATIONAL PROPERTY MANAGEMENT PLANNING CAMPAIGN

In 1998–99 the Commonwealth will provide some $11 million to the National Property Management Planning (PMP) Campaign as part of the National Landcare Programme. In addition, $3 million is available for Advanced Property Management Planning under the Farmbis Programme (see Table 4.1). The campaign aims to help farm families improve the profitability and sustainability of their enterprises while engendering a culture of continuous learning.

Participants are introduced to all aspects of property management with issues being dealt with in a strategic planning context and including natural resource management, succession planning, financial planning and risk management (including drought). PMP is centred on a whole system approach to farm management based on the understanding that natural resource conservation should not be separated from other on-farm decisions. Natural resource management is a central part of the PMP Campaign in all States. PMP's holistic approach is assisting farmers to give greater consideration to the environmental implications of their farm management decisions, such as how the proper planning of wind breaks can significantly benefit native wildlife as well as improving productivity.

From 1993 to October 1997 there were some 52,000 participants in the Campaign, representing an estimated 30,000 farm enterprises.

The NLP objectives are:

- to promote partnerships between the community, industry and government in the management of natural resources;
- to establish institutional arrangements to develop and implement policies, programmes and practices that will encourage the sustainable use of natural resources;
- to enhance the long-term productivity of natural resources;
- to develop approaches to help resolve conflicts over access to natural resources in Australia; and
- to raise the natural resource and business management skills of landholders.

Taxation

The Commonwealth provides deductions from taxable income for primary producers and rural businesses undertaking capital expenditures for storing and conveying water and for preventing and treating land degradation. These deductions are provided under Sections 387-130 and 387-55, respectively, of the *Income Tax Assessment Act 1997* (formerly under Sections 75B and 75D of the 1936 Act). The Treasury estimates their cost to revenue to be about $30 million each year.

As part of the Natural Heritage Trust, arrangements are being made to allow farmers to choose between claiming the Section 387-130 and 387-55 deductions and claiming a tax

rebate, and $80 million of Trust funding, by the NLP, has been committed for this purpose.

A five-year, 10 per cent taxation allowance is available for capital expenditure on drought preparedness assets of up to $50,000 per taxpayer each year.

Deductions are also provided for rehabilitation-related activities on former sites of general mining, quarrying or petroleum operations or sites on which exploration or prospecting was conducted.

International Development Cooperation

The Commonwealth provided about $53 million of its overseas aid expenditure for sustainable agricultural development in developing countries in 1997-98 in order to alleviate poverty and ensure the maintenance of environmental assets such as land and water resources for future generations. Additionally, $40 million was provided in 1997-98 to continue support for agricultural research aid, largely through the Australian Centre for International Agricultural Research (ACIAR), as well as through support for international agricultural research centres.

Australia has much to offer African countries in resolving environmental problems, because climatic and geographic conditions found throughout Australia are similar to those in much of eastern and southern Africa. Moreover, much of Australia's technology and expertise is transferable, especially in specific areas of land management, for example dryland and rangeland systems, and Australia can legitimately claim to be among the world leaders in ecologically sustainable environmental management. As a signatory to the Convention to Combat Desertification (CCD), Australia contributed $200,000 in 1997–98 through the Africa Programme to Combat Desertification. The funds are being used to engage Australian consultants to assist several African countries prepare their national environmental strategies and National Action Programme to Combat Desertification.

Australia also supports a range of projects that address drought and desertification under its regional and bilateral assistance programmes in Africa and other regions in the Asia-Pacific region.

The Commonwealth is providing $4.2 million over five years to 2001–02 from its overseas aid expenditure to support a Community Development Project for the Rehabilitation of Saline Lands in Pakistan. The project will promote the use of sustainable biological systems to gradually restore salt affected and waterlogged soils to productive farmland, and will increase community awareness and capacity to carry out the rehabilitation. The relevant Pakistani institutions will be strengthened to complement and support the more technical work.

The Australian aid programme is also providing $2 million over three years to 1998-99 towards a regional agricultural project in the Pacific that promotes sustainable land management practices on sloping lands (PACIFICLAND Phase II). Similarly, the Commonwealth is providing $3.6 million over five years to 1998–99 to a Soil and Crop Evaluation project in Fiji, that will contribute to self sufficiency in food crops by the

definition and demonstration of crop nutrient requirements on the soils suitable for sustainable cropping systems.

National Principles and Guidelines for Rangeland Management

Since 1993, the Commonwealth has contributed $1.1 million towards the development of a National Strategy for Rangeland Management, involving considerable public input. Drawing from this work, the States, the Northern Territory and the Commonwealth are now progressing development of National Principles and Guidelines for Rangeland Management. The National Principles and Guidelines will act as a basis from which stakeholders will then develop strategies for rangeland management at a State/regional level.

Resource Users' 'Duty-of-Care' and the Role of Governments

The Commonwealth supports and promotes sustainable agricultural practices and natural resource management. In general, landholders and resource users are responsible for maintaining the productivity and ecological sustainability of their land and resources under their 'duty-of-care' responsibilities. The role of governments is to fund particular priority areas, where governments may assist landholders and resource users in meeting their responsibility for environmental remediation of their resources by contributing to their costs (rather than 'sharing' them as suggested by the term 'cost sharing').

In this context, the Commonwealth supports fair and practical arrangements for private and public contributions towards joint initiatives such as Bushcare (see Chapter 3).

PLANTATIONS AND FARM FORESTRY

The Commonwealth is providing $13.8 million in 1998–99 for plantation, farm forestry and forest industry development. Under the National Forest Policy Statement (see Implementation of the National Forest Policy Statement, Chapter 3) and the Wood and Paper Industry Strategy, $6 million is available to promote continued development of a diverse, internationally competitive forest industry based on ecologically sustainable management practices. The balance of $7.8 million will be provided through the Natural Heritage Trust to expand and enhance the Farm Forestry Programme.

A further $31.4 million will be provided from 1999–2000 to the year 2000–01 from both the Trust and the Wood and Paper Industry Strategy.

Under the Farm Forestry Programme a regional partnership approach is being fostered in order to encourage the incorporation of commercial tree growing and management into farming systems for the purpose of wood and non-wood production, increasing agricultural productivity and sustainable natural resource management. The Farm Forestry Programme has four objectives:

- to promote farm forestry on cleared agricultural land for a range of benefits, including wood and non-wood products, increased agricultural production and environmental benefits;

- to promote commercial wood production on cleared land as an integral part of profitable wood-based industries;

- to promote development of new tree-crop products and industries with an emphasis on native species; and

- to promote sustainable management and use of private native forest and woodland.

To date the Farm Forestry Programme has had considerable success in raising the national awareness of farm forestry, and promoting a shift in the culture of land owners towards growing trees for commercial purposes to meet economic and environmental objectives. In addition at the regional level the Programme has established 14 Regional Plantation Committees to address planning and coordination issues and act as a catalyst for plantation and farm forestry development.

BOX 4.2: PLANTATIONS FOR AUSTRALIA: THE 2020 VISION

The Plantation 2020 Vision is a joint State and Commonwealth Government and industry framework of actions designed to achieve an internationally competitive plantation growing sector. The target is to treble the effective area of Australia's plantation estate, from one million hectares to three million hectares, between 1996 and 2020. The focus is on boosting the availability of suitable land, getting the commercial incentives right, establishing a commercial plantations culture and improving information flows.

Expected benefits of the Plantations 2020 Vision include regional development, economic and employment outcomes, substantial reductions in Australia's net greenhouse gas emissions and improved land management outcomes.

ASSESSING THE RESOURCE BASE

National Land and Water Resources Audit

During 1997–98 the Commonwealth provided $7.7 million from the Natural Heritage Trust to commence the National Land and Water Resources Audit which will cost $37 million by the year 2000–01. In 1997–98 the Natural Heritage Ministerial Board approved arrangements for implementation of the Audit including appointment of an Advisory Council chaired by Dr Roy Green. A needs analysis has been conducted for the Audit and a strategic plan is in preparation. The plan will provide a basis for the funding of activities in 1998–99 and beyond.

Informing Government Decision-making

There are a number of other Commonwealth agencies and initiatives which inform Government decision making on the ecologically sustainable use, management and conservation.

CSIRO

The CSIRO's research on land resources supports the Government's investment in sustainable natural resource management and is closely linked with its work on water (see Chapter 5). Allocations in 1998–99 include:

- $2.4 million for projects to increase understanding and monitor total catchment processes to develop effective planning and management tools;

- $1.9 million for projects to aid the systematic understanding, measuring and monitoring of Australia's land resources;

- $3 million for projects to understand land degradation processes and develop tools for management and restoration;

- $1.2 million for projects to develop remediation techniques;

- $1.7 million for projects to develop frameworks and processes to aid better land use decision making and resolve conflicts;

- $4 million for projects to assist in the development of environmental and economic successful farm forestry projects in selected regions; and

- $300,000 to develop with other agencies and groups a plan for new work on an integrated approach to sustainable land management in the Murray-Darling Basin.

Also, the CSIRO is undertaking a number of projects to support the development of tree planting strategies for areas affected by salinity and where disposal of wastewater and saline water disposal is a concern.

Australian Geological Survey Organisation

The Commonwealth will provide $5.6 million in 1998–99 to the Australian Geological Survey Organisation (AGSO) for environmental geoscience mapping and modelling including of landforms, soils, groundwater and degradation processes. An understanding of land and water systems is necessary for the right land use decisions to be made.

The major achievements for 1997–98 include the publication of the Groundwater Map of the Great Artesian Basin and a digital geological map of the entire Murray-Darling Basin, which provide a better basis for sustainable resource and environmental management.

Projects continuing in 1998–99 include work on remote sensing, groundwater resources, groundwater contamination and salinity hazard assessment. Work will also commence on aquifer recharge studies and integrative multidisciplinary investigations of land degradation hazards to provide an improved basis for land planning and management.

Bureau of Resource Sciences — Sustainable Land and Water Resource Programmes

The Commonwealth will provide $600,000 in 1998–99 to ensure the provision of sound scientifically-based information for improving decisions on land use policy. Reports completed in 1997–98 included 'Impediments to managing environmental water provisions' and one on bore rehabilitation in the Great Artesian Basin.

National Dryland Salinity Research, Development and Extension Programme

The National Dryland Salinity Research, Development and Extension Programme was established in 1993 by a consortium of organisations with interests in supporting research, development and extension efforts directed toward managing the increasing threat of dryland salinity. The organisations included the Land and Water Resources Research and Development Corporation (see Chapter 2), the Murray-Darling Basin Commission and the Department of Primary Industries and Energy, the latter through the National Landcare Programme. Its goal is to generate integrated techniques and approaches for the optimal management of dryland salinity in Australia.

Major achievements to date include the development of guidelines for establishing the costs of dryland salinity, including its non-market costs, a range of improved tools and techniques for estimating the component of hydrologic imbalance due to deep drainage, and greatly improved methods of utilising remote sensing data to map and monitor the risk of dryland salinity. A review of the first phase of the programme was conducted in late 1997, and will form the basis for a decision in 1998 on a second phase for the programme. The review will provide a basis for consideration of future funding requirements.

The Cooperative Research Centres Programme

Many of the 40 agriculture and rural-based manufacturing, mining and environment Cooperative Research Centres provide information which helps manage and conserve our natural resources. The CRC for Sustainable Development of Tropical Savannas will be provided with $2.6 million from the Commonwealth in 1998–99 to investigate soil water, nutrient availability and disturbances and how these affect the productivity of savanna vegetation. In particular, the CRC has developed a ground-breaking approach to savanna management in the Victoria River area by researching the application of fire management practices.

MINING AND LAND REHABILITATION

Best Practice in Mining Activities

The Commonwealth is fostering best practice environmental management in the mining industry, including minesite rehabilitation, through cooperative approaches with industry and State and Territory Governments.

Funding of $1.1 million in 1997–98 (the sum of the first three rows under the Mining and Land Rehabilitation heading in Table 4.1) was used for a number of activities:

- the production of a series of booklets, *Best Practice Environmental Management in Mining*, to promote improvement in the level of environmental protection associated with mining in Australia and to share Australian expertise in this area with other countries;

- establishment of databases on the Internet to facilitate easy access to information on about 70 key environmental issues. A database on technical references is already available, and databases are in preparation of case studies, training courses and expertise available in the field;

- an arrangement with the Australian Centre for Minesite Rehabilitation Research to stimulate the level of industry-based research activity into strategic cross-sectoral issues to improve the level of understanding of environmental issues in mining. This arrangement also provides for the development and delivery of specialised training courses and workshops in best practice environmental management;

- the development of national codes of practice to provide uniformity in the development of State legislation and work practice controlling the mining and milling of radioactive ores, the safe disposal of radioactive wastes from mining operations, and the safe use of radioactive sources. Achievements include the development of a 'Uniform National Framework for the Control of Radiation' in consultation with the States and Territories, a 'Guideline on the Definition of Radioactive Material for Regulatory Purposes', a 'Code of Practice for the Safe Use of Radiation in Veterinary Practice' and a 'Code of Practice for the Safe Use of Elemental Analysis and Measurement Equipment Containing Sealed Radioactive Sources'; and

- activities under the Enhancing the Sustainability of the Mineral Sector programme to: ensure environmental monitoring and compliance regimes are transparent, scientific and developed consultatively; ensure land management regimes provide optimum opportunities for resource access while recognising environmental and other values; and contribute to whole-of-government approaches to environmental regulation which deliver certainty, transparency and a minimum of duplication.

Alligator Rivers Region

The Commonwealth provided $5 million in 1997–98 to maintain its commitment to the level of environmental protection achieved over the last seventeen years in relation to uranium mining in the Alligator Rivers Region. Environmental Performance Reviews for surveillance and assessment of the Ranger mine will continue to occur twice a year. The reviews focus on environmental outcomes, providing feedback on performance and identifying areas for improvement.

Through the Supervising Scientist Group the Commonwealth maintains ongoing surveillance and assessment of environmental protection from mining in the Alligator Rivers Region. In addition the Supervising Scientist Group is developing standards, practices and procedures to ensure protection of the environment in the Alligator Rivers Region during mining operations and following rehabilitation.

Priority is being allocated to assessing the impact of the possible development of the Jabiluka mine. Emphasis will be given to establishing new baseline data to characterise (biological, chemical and radiological) aquatic ecosystems in the vicinity of the Jabiluka uranium deposit and the proposed haul road to Ranger, and to determining the radiation exposure of people from naturally occurring radon and radon progeny at sites that could be affected by the development of the mine.

Radiological impact assessment for the rehabilitated Nabarlek mine will continue, including validation of current models for radionuclide transport in the environment, prediction of radiological dose rates in the vicinity, and development of methods to assist in the planning of rehabilitation at other uranium mines. The effectiveness of remote sensing techniques for monitoring the progress of mine rehabilitation will also be investigated.

Following the completion of the validation of the landform evolution model for the Ranger mine, the model will be used to assess, within the context of Best Practicable Technology, the optimum landform design for rehabilitation at Ranger.

Research will continue on the treatment of mine waters by constructed wetland filters. This will include assessment of the role of carbon cycling in contaminant retention in wetland filters; evaluation of the performance of the existing constructed wetland filter at the Ranger mine; and optimisation of methods for the reduction of sulphate in Ranger mine waters.

Indian Ocean Territories — Christmas Island and Cocos (Keeling) Islands

The Commonwealth is providing $100,000 in 1998–99 for mine site rehabilitation and environmental management in the Indian Ocean Territories, with a further $400,000 to be spent up to 2001–02.

On Christmas Island it is necessary to balance the needs and effects of a phosphate mine, resort developments and a national park. Similarly, the Cocos (Keeling) Islands constitute a fragile environment with a limited economic base of marine-based tourism and infrastructure servicing. The Supervising Scientist Group provides a full time on-site Environmental Officer under an arrangement with the Department of Transport and Regional Development, and conducts Environmental Performance Reviews of enterprises on Christmas Island and the Cocos (Keeling) Islands twice a year to encourage continual improvement in the standard of environmental management. The Commonwealth has granted a new lease to the Christmas Island phosphate mine which includes an Environmental Management Plan and a Dust Suppression Programme.

Rum Jungle

The five year monitoring and maintenance programme at the former Rum Jungle Uranium Mine in the Northern Territory is due for completion in 1997–98 and review in 1998–99. The programme provided site monitoring to test the longer-term environmental response to rehabilitation, weed control and drainage structure repair.

Managing Mine Waste

Mining and Minerals — Managing Mine Wastes Programme

The Commonwealth will provide $3.1 million in 1998–99 for the Australian Nuclear Science and Technology Organisation's (ANSTO) Mining and Minerals — Managing Mine Wastes Programme which is developing and demonstrating management options for the control of pollutant loads in sulfidic mine waste effluent.

International Development Cooperation

Australia attaches high priority to helping China improve the management of its environment and is currently developing its China Environment Strategy. This will provide a programme of environmental activities, valued at up to $30 million over five years from 1997–98, focusing mainly on land rehabilitation, water pollution, renewable energy and natural resource management.

BOX 4.3: CHINA-AUSTRALIA MINE WASTE MANAGEMENT PROJECT

The Commonwealth provided $7.3 million to the China-Australia Mine Waste Management Project. This assisted China in mitigating the impact of environmental degradation caused by mine waste, through the establishment and activities of the China-Australia Research Institute of Mine Waste Management (CARIM) within the China National Non-Ferrous Metals Corporation. The project was successfully completed and handed over to the Chinese Government in late 1997. Site testing facilities established by the project include mine waste research laboratories. Additionally, support service capabilities within the CARIM have been established. The proposed programme of site investigations and demonstrations for tailings dam rehabilitation planned under the project has been completed. Institutional development has been, in general, successful with significant improvement of technical skills and progressive, albeit somewhat slow managerial development. Indications are that project outputs will be sustainable and will in fact have a lasting impact on mine waste management in China.

Land Rehabilitation

Maralinga

The former British nuclear test sites at Maralinga are undergoing rehabilitation through a $108 million project to be completed in 1999–2000. The principal hazard at the test sites are plutonium contamination of soil and buried debris. Contaminated soil has now been removed and buried, and the treatment of twenty-one plutonium contaminated debris pits by an *in situ* vitrification process will commence by mid-1998.

CSIRO

The Commonwealth will provide $1.5 million in 1998–99 to the CSIRO's Minesite Rehabilitation Programme.

Railway Contaminated Site Remediation

The Australian National Railways Commission should complete the majority of work to remediate contaminated railway sites across Australia in 1998–99, including the former railway yards at Islington, South Australia, using $52 million allocated by the Commonwealth in 1996–97. About half of this work was completed by 1997–98, and the balance of $19.9 million is to be provided in 1998–99.