Natural Resource Innovation Grants - Previous Investments

Issues addressed by NLP investments in previous years have included the following:

- Improved management practices - particularly for sustainable grazing and cropping systems.
- On-ground rehabilitation of catchments and implementation of catchment plans by community landcare groups, regional scale approaches to NRM, and development and promotion of practices for sustainable agriculture and improved pastoral management.
- On-ground activities aimed at improved soil management, water quality and waterway management.
- Salinity management and erosion control which also protect and restore the conservation values of catchments.
- Development of more sustainable farming systems.
- Improving skills and motivation of land managers by promoting and demonstrating sustainable farming practices and natural resource use.
- Training in improved land management on Aboriginal lands.

Natural Resource Innovation Grants supported the following projects in 2003-04, 2004-05 and 2005-06:

New South Wales	**Queensland**	**South Australia**	**Tasmania**
Victoria	**Western Australia**	**National**	

New South Wales

Promoting zone management of crops and pastures in the Farmlink Groups ($114,000, 2003-04)
The Farmlink Group is applying zone management to crops and pastures in regions of southern NSW where soils are constrained by compaction, sodicity and acidity. Experienced farmers and scientists are jointly running demonstrations of the effects of subsoil amelioration on variable landscapes and precision agriculture schools. This will lead to wider adoption of profitable components of precision agriculture, subsoil amelioration and controlled traffic, resulting in increased profit, reduced soil degradation and more efficient use of water and nutrients.

Integrated rangeland management system ($122,380, 2003-04)
The project, which is being carried out by Mr Tony Thompson, is using satellite imagery to map different land types on properties to calibrate a pasture growth model to predict pasture growth and animal performance. It is also monitoring of animal performance daily, through electronic ear tags and automatic weighing and drafting facilities as animals enter watering points. The data can then be cross-referenced against the pasture growth model's predictions. This integrated management system has the potential to improve the sustainability of natural resources, as well as reducing costs and improving productivity.

Contour banks for efficient production: innovative use of modified contour banks for efficient irrigation and cultivation practices and minimised environmental impacts ($48,960, 2003-04)
This project, which is being conducted by the Southern Riverina Irrigation Districts Council, is using Global Positioning System technology to facilitate the construction of low contour banks to balance irrigation efficiency, weed control and productivity in wheat and canola production. The system has been successful in clover production, but the demands of sowing accuracy and success are significantly greater with cereal and oilseed crops. Widespread adoption of this approach will lead to increases in production, reduced machinery down-time and greater efficiency of water use.

Lotus opens new opportunities for grazing Northern Tablelands of NSW ($8,130, 2003-04)
The Glen Innes Natural Resources Advisory Committee is establishing demonstration paddocks of *Lotus corniculatus*, a relatively new bloat-safe perennial pasture legume suited to low fertility acid soils, to promote adoption of this approach throughout the Northern Tablelands of NSW. Widespread adoption of *Lotus* in pasture will generate higher pasture yields, increased animal production, reduced animal health problems and increased soil fertility.

Benefit of novel endophyte for sustainable pastures - northern NSW ($15,310, 2003-04)
The project, which is being conducted by the Granite Borders Landcare Committee, is establishing demonstration sites on the Northern Tablelands to compare productivity on pastures of tall fescue with and without novel endophyte. Endophytes are fungi that produce alkaloids that affect the health and productivity of grazing animals. Novel endophytes produce nil or very low levels of toxic alkaloids. Demonstration of the benefits of novel endophyte will increase the adoption of this technology and, in turn, lead to increased groundcover in the Northern Tablelands and reduce erosion, soil loss and sedimentation of waterways. Improved drought tolerance and pasture persistence will increase both sustainability and productivity.

Native grass seed harvesting ($39,000, 2003-04)
The Corowa & District Landcare Group is modifying existing machinery to facilitate broadacre harvesting of native grass seeds. The project will demonstrate the commercial viability of native grass harvesting and enable adoption of more diverse and sustainable farming enterprises by allowing the use of deep-rooted native perennial grasses. This will lead to reduced groundwater recharge and rising water table problems associated with salinity. The use of native grass species will also provide direct benefits for biodiversity. Widespread adoption of perennial systems will also reduce water run-off, leading to improved water quality.

Subsoils in profile – practical identification of subsoil constraints ($56,500, 2004-05)
FarmLink Research is sampling subsoils in 150 paddocks across southern NSW to produce a map that identifies problem areas. The project will enable people to better identify and manage problems such as acidity, salinity and sodicity. It will also encourage more efficient water use for crops and pastures, and reduce deep drainage and off-site nutrient transfer.

Planning and Demonstrating Organic Beef Production within the context of an enterprise Environmental Management System, and Property Native Vegetation Management Planning ($109,750, 2004-05)
Upper Clarence Combined Landcare Inc is helping six beef cattle grazing enterprises develop environmental management systems that incorporate property vegetation management planning. The enterprises are planning to change from conventional to organic beef production, and the project will look at some of the constraints to making this change. The project will also help land managers become more involved in sustainable natural resource management.

Increasing adoption of innovative irrigation and water recycling technologies in Australian nurseries ($129,748, 2005-06)
Nursery Garden Industry Australia will apply commercially available irrigation and water recycling innovations (techniques and technologies) within three case-study production nurseries to quantify and compare the environmental, production and financial benefits. A cost/benefit analysis will provide a business case to encourage nursery owners to invest in more sustainable production technologies.

The New England North West Innovation in Agriculture Landcare Adventure ($9,850, 2005-06)
The Adventure will be a regional forum to promote innovative sustainable agricultural practices. It will be a two-day event in April 2006 involving more than 100 landholders and producers, and include farm visits, workshops and regional landcare awards to showcase and encourage innovation in landcare and in agriculture.

Natural Sequence Farming — catalyst for riparian restoration in semi-arid Australia ($141,880, 2005-06)
The Lake Cowal Foundation will carry out a trial of natural sequence farming in Spring Creek, which is a typical incised, ephemeral and degraded creek in the semi-arid Lake Cowal catchment. The project will enable the re-establishment of the chain-of-ponds, swampy-meadow complex by establishing 20 low-cost 'leaky weirs' that reintegrate pre-European stream and floodplain hydrology. A manipulated sequence of natural bed-raising events are expected to positively affect floodplain recharge, water quality, salinity, biodiversity and the catchment's capacity to sustain agricultural production.

Caring for country with bush foods ($54,520, 2006-07)
The Bonalbo Aboriginal Corporation will educate landholders on all tenures on how to make conservation zones (including riparian areas and repair/restoration projects) sustainable food-producing areas, by incorporating native food plants which have been identified as appropriate for the area by Aboriginal people, local land managers and forestry experts working together.

Demonstration of contour-based soil management system for improved water and nutrient use efficiency ($109,700, 2006-07)
Coastmont Investments will implement a multi-depth, single-pass, laser-guided technology for renovating degraded pastures to (a) conserve soil moisture and (b) rebalance nutrient availability for livestock and cropping operations on typical coastal soils. The project will demonstrate potential input savings and address the key issue of sustainable production under prevailing climate change conditions.

Tropical pastures for temperate climate - Granite Borders ($26,115, 2006-07)
The Granite Borders Landcare Committee will address issues of poor pasture persistence and invasion of pastures by exotic perennial grass weeds, by demonstrating and encouraging the establishment of summer active pasture species. These species have lower soil nutrient and moisture requirements, as well as having growing seasons which will compete with those perennial grass weeds.

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Northern Territory

Applied pastoral information technology ($141,200, 2006-07)
The Northern Territory Cattlemen's Association will develop and demonstrate systems for improved information management on extensive cattle properties. The project will increase the capacity of pastoralists in extensive areas to manage herd performance and grazing, particularly the balance between cattle numbers and land condition. Increased management capacity will lead to increased herd efficiency and enterprise profitability whilst maintaining the underlying natural resource base in good condition.

New technologies to expand the northern Australian native grass industry ($21,400, 2006-07)
Greening Australia (N.T) Limited will construct a seed harvester designed for Northern Australian environments and grass species that will assist in further developing the use of this valuable natural resource. The ability to more effectively harvest will enable the promotion of best practice rehabilitation and the utilisation of native pastures as a sustainable enterprise.

Developing mechanical controls to manage dense, large area weed infestations ($125,450, 2006-07)
The Victoria River District Conservation Association will demonstrate cost-effective restoration of large, dense weed infestations through a program based on mechanical mulching. This technique has not previously been used in the Northern Territory, and demonstrations will reinforce wider landholder uptake of integrated strategies on infestations previously considered economically unmanageable.

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Queensland

Implementing innovative farming technology ($75,000, 2003-04)
The project, which is being conducted by the Brigalow-Jimbour Floodplains Group, is assisting farm businesses to modify equipment (planters, boom sprayers and harvesters) to optimum widths and wheel spacing, to successfully implement controlled traffic farming systems. Water penetration, soil structure and biology will be improved, whilst soil compaction and erosion will be reduced. This will increase farm efficiency and allow the establishment of higher value crops, boosting productivity and profitability.

Achieving environmentally sustainable sugar cane farming in the Wet Tropics FNQ Region through implementing high-density cane planting, controlled traffic and break cropping innovative practices and production systems ($16,450, 2003-04)
This project, which is being carried out by the Watters family, is building on the success of their previous project, funded under the Australian Government's Farm Innovation Program, to modify existing farm machinery and expand the land area under a new farming system. This will lead to increased farm productivity and efficiency and demonstrate farm-scale benefits to the broader community and so facilitate broad adoption of innovative sugar cane farming practices.

Major innovative cultural practice change required (in soil health and mulch management) for a more sustainable pineapple industry in Queensland ($21,035, 2003-04)
The project, which is being conducted by Top End Pineapples, is promoting the adoption of innovative best management practices on-farm in the pineapple industry. It is establishing various mulching and soil health demonstrations and also demonstrating new machinery. The project will result in a greatly improved network of information exchange amongst growers, improved production efficiency and soil health, with reduced chemical inputs and better trash management.

Bioremediation of soils in the Taroom shire ($26,976, 2003-04)
The project, which is being carried out by the Taroom Shire Landcare Group, is assessing a range of biological soil renovation treatments, using a complex range of laboratory analyses, before and after treatment, to measure their impact on the soil biota. The project will identify cost-effective and practical methods of enhancing soil function to improve pasture productivity.

Bundaberg District Grain in Cane ($90,600, 2003-04)
The project, which is being conducted by Bundaberg Grain in Cane, is establishing model farms in the Bundaberg and Isis regions to demonstrate current best management practices for sustainable sugar cane production, particularly to improve rainfall capture and reduce chemical fertiliser usage and land preparation costs. The project will lead to improved soil health and more efficient use of nutrients and water in the sugarcane industry, and contribute to its sustainability.

Implementing a lower cost, low-impact and high-yielding cane farming system ($83,655, 2004-05)
Granshaw Farming is improving the productive capacity of sugarcane growing soils by adopting a new farming system that includes reduced tillage, controlled traffic, legume break crops and direct-drilled, legume companion crops. The project aims to significantly reduce irrigation, tillage, herbicide, fertiliser and harvesting costs.

Pioneering broad-scale innovative farming for a sustainable Isis sugar industry ($74,682, 2004-05)
The Isis Landcare Group is demonstrating sustainable land management techniques on eight sites in the Kingston Farmlands area. The techniques include break cropping, minimum till practices with a modified rotary hoe, and incorporating trickle tape and subsurface irrigation into existing farm systems. The project aims to increase on-farm productivity, improve soil health, and water and nutrient management.

Broad acre trials of the effect of application of compost tea inoculant on microbial balance in soil, nutrient uptake and productivity in ginger, grapes and other crops on the Sunshine Coast ($42,100, 2004-05)
Natural Resource Management South East Queensland is undertaking broad acre trials of the effect a compost tea inoculant has on the microbial balance, the nutrient uptake and the productivity of soils used to grow ginger, grapes and other crops on the Sunshine Coast. The technique aims to restore the soil microbial balance by increasing the populations of beneficial aerobic microbes. It is anticipated that this will also encourage nitrogen-fixing bacteria, increasing the efficiency of fertiliser applications.

Resource monitoring for crop options – Top Crop ($61,300, 2004-05)
The Eastern Downs Turn Around Group is providing landholders with information on the influence of topography on microclimates to help improve their land management practices. The farm-based project will enable participating growers to quantify the extreme variations in farm temperature, and classify soil profiles for their water holding capacity and nutrient content. This will help farmers select more appropriate cropping strategies in particular areas.

Facilitating uptake of minimum tillage and fallow crops in the Herbert River cane industry ($37,000, 2004-05)
The Herbert River Catchment Group is increasing the use of practices such as legume break cropping, minimum tillage, controlled traffic zones and trash blanket retention by making the necessary equipment available to cane farmers in the Herbert River.

Innovative equipment for installing drainage to improve the water quality of farm runoff in the Wet Tropics ($21,250, 2004-05)
Jackson Farming is improving drainage and water quality on banana farms by installing agricultural pipes in areas with run-off problems. This should also improve fruit growth and quality, improve operational safety, reduce the need to use fungicides on leaf disease and improve nutrient use.

Saving irrigation water in the Condamine catchment ($44,500, 2005-06)
The Condamine Alliance will target cotton farms losing water by seepage through dam floors and walls. It will result in early identification and remediation of potential dam wall failure, and clarify the amount of water lost to evaporation and seepage. It will identify point sources of seepage and test three methods of sealing identified leaks.

Renovating saline/sodic soils and conserving water through compost use ($74,122, 2005-06)
GELITA Australia Pty Ltd will assess the effectiveness of compost use as a tool to renovate saline/sodic soils. It will determine the beneficial effects of using compost on soil chemical, physical and hydrological properties, as well as plant growth (pasture, trees) at sites adversely affected by saline effluent, dryland salinity and sodicity.

Implement proactive area–wide management of localised salinity problems in a sub-catchment of the Mary River ($42,850, 2005-06)
The Maroochy Landcare Group Inc. will demonstrate a local area-wide, multi-industry partnership approach to addressing salinity issues in a mixed ginger, dairying and beef production sub-catchment. It will build on existing grower innovation and enhance awareness of the use of automatic salinity sensing, which allows unsuitable surface water to be directed away from irrigation dams during the rising phase of flow events.

Efficient and cost-effective establishment of deep rooted native perennials ($90,000, 2006-07)
Alan Lauder will modify, trial and demonstrate a one-pass planting machine for bare-rooted native seedlings at less than 30% of current costs, under marginal conditions. It will demonstrate best practice for the sustainable maintenance of bare rooted native seedlings following removal from soil prior to planting.

Marine Polychaete sand filters – prawn farm wastewater remediation trial ($69,498, 2006-07)
The Bullock Creek Prawn Farm will extend recent promising research with Polychaete sand filters that offer potential to remove nutrients from prawn pond effluent and simultaneously produce a valuable by-product, namely marine worm biomass.

Development of water efficient fruit and vegetable washer ($10,800, 2006-07)
Jason Huggins will develop a prototype vegetable washer that will significantly reduce water use by recirculating water, rather than the current run to waste systems used by the industry.

Native pollinators as a resource for agricultural systems ($12,500, 2006-07)
Romina Rader will identify native insect pollinators in crops and determine the factors influencing their distribution, abundance and movements. Methods to maximise the pollination services of native insects will be devised to enable improved seed/fruit set and reduce the cost of and reliance on, the introduced honeybee.

Building capacity to manage climate change in Queensland ($85,680, 2006-07)
AgForce Queensland will work with farmers to assess the likely impacts of climate change on their enterprise and the surrounding environment. Through workshops, producers will be up-skilled in the use of local climate change information and tools to assist in mitigating the impact of climate change. Case studies and workshops across four regions of southern Queensland will use software tools to quantify on-farm impacts.

Farming systems innovation – 'Hedge-row planting' a single pass, broad-row cane planting system. ($69,300, 2006-07)
Paul Mizzi is seeking to accelerate the adoption of a proven farming system concept that will greatly reduce planting costs by around 50% without loss of productivity. Hedge-row planting involves controlled traffic (1.8m), mound planting of a wide band of cane in a single pass.

Driving innovation in environmental performance in the Moreton Bay seafood industry ($162,477, 2006-07)
The Moreton Bay Seafood Industry Association aims to achieve by-catch reduction in the trawl and net fisheries in Moreton Bay (located at the mouth of the Brisbane River), through implementation of innovative technologies. The project will contribute to improvements in water quality by implementing a system to remove urban debris dumped in Moreton Bay waterways.

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South Australia

Driving adoption of robust profitable agricultural land management systems in medium rainfall conditions ($124,100, 2003-04)
The Southern Yorke Peninsula Alkaline Soils Farming Systems Group is comparing disc and tine seeding technologies in stony soils. The project is evaluating innovative techniques for annual rye grass control, new liquid fertiliser technologies, use of precision guidance to improve crop establishment and use of later nitrogen applications to improve canopy management. It is also promoting improved spray technologies. Widespread adoption of this approach will improve crop establishment in high stubble levels, reducing soil disturbance and improving water infiltration and weed management. The reduced reliance on burning for weed control will enhance biodiversity and reduce erosion risk.

Demonstrating improved use of disk seeders and herbicide use in no-till farming systems ($48,200, 2003-04)
The South Australian No-Till Farmers Association is establishing several field demonstration sites to promote adoption of disc seeders in no-till farming. Field days and workshops are also being run to improve farmer understanding of the practical use of disc seeder technologies in no-till farming systems. The project is aiming to double the adoption rate of no-till farming within three years. The increased use of disc seeders will increase farm efficiency and profitability and contribute to long-term sustainability.

Demonstration of advantages of precision agriculture technologies in lower rainfall farming systems ($25,000, 2003-04)
This project, which is being conducted by the Southern Precision Agriculture Association, will facilitate adoption of precision agriculture through training and on-farm demonstrations. Farmers arel being provided with information on a variety of technical issues, including hardware/software and data management, manipulation and interpretation. The project will demonstrate the economic viability of these systems in lower rainfall areas. The increased adoption of precision agriculture will allow targeted application of fertiliser and pesticide inputs, reducing the environmental impacts and soil water recharge, whilst improving the efficiency of water usage.

Implementation and demonstration of resource efficient irrigation systems for the lucerne seed industry ($103,172, 2003-04)
The project, being undertaken by Mr and Mrs Smart, aims to demonstrate, on a commercial scale, the benefits of sub-surface drip irrigation (SDI) over traditional methods of irrigation. SDI involves laying dripper tube 250 mm underground at 1-metre intervals to enable sufficient watering to the root zone. The project will improve the quality of aquifers by preventing fertilisers and chemicals leaching to the aquifer and widespread adoption of this technology in the lucerne seed industry will lead to both a sustainable water resource and industry.

Improving Agricultural Production Systems Through Innovation ($128,600, 2004-05)
Southern Yorke Peninsula Alkaline Soils Farming Systems Group is carrying out a number of activities, including demonstrating the advantages of more accurately applying seed, nutrients and chemicals, implementing innovative weed control techniques, evaluating new liquid fertiliser technologies, and increasing production and water use by evaluating the shattering of limestone layers beneath the soil surface, and comparing a range of slitted treatments for sandy clay soils with ripped treatments.

Holistic use of chemical and non-chemical weed control methods in no-till farming systems ($45,000, 2004-05)
The South Australian No-Till Farmers Association is looking to increase the range of weed control methods used in no-till farming, including 'incorporated by sowing' (IBS) herbicides, introducing more competitive crop varieties and applying 'knife-rolling' technology. The project will help promote the benefits of no-till farming systems, and reduce herbicide dependence and resistance.

The use of circle hooks to improve hook selectivity, while reducing mortality of target and non-target species ($68,800, 2004-05)
The SA Australian Fishing Industry Council is testing the use of circle hooks to see if they can replace the more conventional 'J hook' on commercial fishing vessels in South Australia. The use of circle hooks could reduce the number of undersized fish taken, and reduce the post-release mortality rates of hooked fish. If successful, it should have broader applications in the recreational fishing industry.

The Anna Creek Station Workshop on the application of telemetry and associated technologies in the pastoral industry ($70,000, 2004-05)
The Arid Areas Catchment Water Management Board has held a workshop on the use of telemetry and associated technology in Great Artesian Basin rehabilitation works and pastoral management. The workshop encouraged landholders to install more efficient water delivery systems, incorporate better management practices, and encouraged researchers and product providers to develop practical telemetry applications for the pastoral industry.

Viable small-scale firewood harvesting and processing using low-cost sleds ($24,850, 2004-05)
Mt Lofty Ranges Private Forestry is evaluating an innovative, small-scale harvesting and processing system — the 'sled system' — for plantation-grown firewood. It will help make young farm forestry plantings in the Mount Lofty Ranges more viable. The project aims to encourage farm forestry projects that will deliver natural resource management benefits, such as reducing groundwater recharge, stream salinity and saline discharge.

Improved nutrition, weed and pest management in reduced tillage farming systems ($136,000, 2005-06)
The Southern Yorke Peninsula Alkaline Soils Farming Systems Group will evaluate and demonstrate innovative methods to improve the sustainability of reduced tillage farming systems. The project will address the increased occurrence of brome grass, herbicide-resistant weeds, snails and inefficient nutrient application, which are arising in certain conditions under full stubble retention, no-till farming systems.

Mains water leak detection systems in the Coorong District ($126,300, 2006-07)
Coorong District Council will install leak detection systems on grazing and cropping properties to identify when mains water is leaking from delivery pipes on-farm. This will lead to reduced mains water waste on dryland farms, reducing on-farm overheads. The project has the potential to reduce diversion of water from the River Murray, increasing water flows.

Integrating perennial native grass pastures into low rainfall cropping systems ($130,250, 2006-07)
Upper North Farming Systems will integrate native perennial grass establishment and management technology, and develop new techniques for low rainfall cropping systems, which has not been undertaken anywhere in Australia on a broad-acre and cost-effective basis. The project is aimed at improving pasture and livestock production, reducing risks of seasonal variability and erosion and may possibly be an important component in a system for managing climate change.

Establishing new perennial pastures within the Upper Onkaparinga Catchment ($54,400, 2006-07)
The New Springs Landcare Group will conduct on-ground trials of new pasture technology to evaluate the performance of recent lucerne varieties and a range of promising native and exotic perennial pasture legumes. The project will look at innovative ways of incorporating native herbaceous perennial legumes into farming systems. The project will raise the awareness of salinity management issues in the Mount Lofty Ranges and lead to improved adoption of perennial based pastures in the region.

Innovation in dairy design – reduce, reuse and recycle ($49,600, 2006-07)
The DairySA Regional Development Program Inc will review innovative systems in the dairy shed that can reduce resource use in the Dairy Industry by up to 75%. The costs and benefits of renewable energy sources, energy efficient shed design, heat exchange from cooling and heating and recycling of water and chemicals will be communicated to farmers.

Managing livestock pressures in sensitive peri-urban environments ($90,900, 2006-07)
Horse SA will rollout an innovative methodology for engaging peri-urban livestock owners in natural resource management. The project will use industry leadership principles and the HorsesLandWater NRM tools (Action Planner & Management Guidelines) - developed and researched for peri-urban Adelaide (SA) – as a basis for the national outreach.

Limestone Coast Envirofuel - demonstration of on farm bio-diesel production ($57,500, 2006-07)
The Cacia Downs Farming Company will demonstrate the production of bio-diesel at a farm scale level, from locally grown canola. This will be used on farm to convert over 100,000 litres per year of traditional diesel to bio-diesel, thereby completely eliminating green house gas production on farm. The project will be a demonstration site, involving field days, a website, guest speakers and tours to showcase the economic and environmental benefits of on-farm bio-diesel production.

Innovative inter-row weed control in reduced tillage, stubble retained systems ($129,000, 2006-07)
The Yorke Peninsula Alkaline Soils Group will evaluate and demonstrate innovative precision technology for inter-row weed control on conventional crop row spacings (300mm). The project will be the first in Australia to attempt to achieve this. The outcomes of the project will help address the problems of weed control in reduced tillage, stubble retained systems and reduce herbicide inputs by more targeted applications of inexpensive herbicides to problem weed areas within the landscape.

Improving production in harsh and saline conditions ($158,000, 2006-07)
The Yorke Peninsula Alkaline Soils Group will work with growers in evaluating innovative methods to improve crop production under harsh conditions. Salinity issues in the Wallaroo catchment and difficult growing conditions in the Eudunda low rainfall region will be addressed. Activities will include, sowing pre-germinated seed, seed polymer coatings, new soil mulches, fluid fertilizers, in furrow treatments and improved seeding systems.

Increasing crop productivity through improved pollination practices ($163,200, 2006-07)
The Yorke Peninsula Alkaline Soils Group will deliver significant yield increases in Faba Bean and Lucerne crops in South Australia through developing and applying integrated pollination techniques. A pollination expert will work with growers and apiarists to increase local and industry knowledge of pollination techniques and improve the genetic quality of pollination bees through artificial insemination and selection processes.

Satellites, stocking-rates, sustainability – all come together on Kangaroo Island ($33,082, 2006-07)
Agriculture Kangaroo Island will use innovative technology to ensure the sustainability of grazing enterprises through the ground-truthing of ‘pastures from space’ technology for Kangaroo Island, demonstrate its applicability for ensuring grazing systems are sustainable, and investigate the sustainability of high stocking rates.

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Tasmania

Ecologically sustainable fresh water aquaculture development utilising best practice water management techniques for Atlantic salmon and other fresh water species ($145,000, 2003-04)
The project, being carried out by 41 Degrees South Aquaculture, is converting a traditional flow-through salmon farm to recirculation, where water is continually reused, after undergoing natural treatment to remove contaminants. Adoption of this 'best practice' will improve productivity, avoid release of effluent and contaminants into the environment and significantly decrease water usage.

Waste water treatment through the introduction of wetlands to wholesale nurseries ($74,125, 2003-04)
The Nursery & Garden Industry, Tasmania is constructing wetlands at wholesale nurseries to act as sediment and nutrient traps for water emissions from production nurseries. The project will produce significant reductions in the levels of contaminants entering waterways from nursery outfalls and demonstrate to the nursery and garden industry that improved environmental solutions can be found to conserve water and enhance water quality.

Improving water use efficiency and reducing soil leakage from centre pivots ($34,080, 2005-06)
Southern Farming Systems will demonstrate alternative irrigation schedules to farmers using centre pivot irrigators. A mini lateral-shift irrigator will be modified to apply different irrigation regimes. Soil moisture meters will be installed to demonstrate their use in monitoring water application and determining watering schedules, and to demonstrate leakage from poor irrigation scheduling.

Conversion of onion waste into disease-suppressive organic composts ($100,000, 2005-06)
Webster Fresh will undertake trials on techniques for composting onion waste so that it can be handled in a more sustainable way. It will develop techniques to ensure the compost is free of onion pathogens, and demonstrate the potential for composted onion waste, enriched with a biological control agent, to disinfest land of onion white rot.

Boosting agricultural productivity with biosolids; urban wastes for soil health ($128,100, 2006-07)
The Coal River Products Association will develop best practice use of recycled biosolids from urban waste streams in productive agriculture with scientific underpinning to inform the review of current guidelines. The project will develop partnerships between local farmers and relevant agencies.

Increased soil health and crop quality through adoption of industrial hemp waste-products and crop rotations ($35,600, 2006-07)
The Tasmanian Institute of Agricultural Research will demonstrate, implement and promote industry adoption of innovative industrial hemp waste-products to improve orchard soil health, productivity and fruit quality. Development of marketable products from hemp residue will enable 100% usage of a crop that is gaining an increasing market share, providing an effective method for farmers to improve sustainability

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Victoria

Sustainable farming systems, balancing water use and living with salt ($90,000, 2003-04)
The Northern United Forestry Group is combining local community expertise with work to improve water use and match perennial plant species to landscape conditions. The project is demonstrating that sustainable productive agriculture and biodiversity enhancement can be achieved on saline landscapes and incorporated into existing farming operations to the benefit of rural communities. (**Website**)

Trentham and district dung beetle program ($6,654, 2003-04)
The Trentham and District Landcare Group is releasing dung beetles in Trentham area Spring Hill and Trentham areas and assess the sustainability of dung beetle populations in this cold, high-rainfall climate environment. The benefits produced by dung beetles and the need to employ dung beetle friendly farming practices are being promoted to the broader community.

Seaweed solutions for salinity and sustainability - the 4s project ($138,290, 2003-04)
The Donald and District Landcare Group is introducing cultivation of marketable seaweed in saline water evaporation basins in Buloke Shire. This project will demonstrate the potential for productive use of salinised land, produce localised lowering of water tables and contribute to the development of a new Australian industry, for both domestic and international markets. (**Website**)

Demonstration of improved irrigation practices to the processing tomato industry ($58,500, 2003-04)
This project, managed by the Australian Processing Tomato Research Council, is examining the potential of above-surface irrigation for crop establishment. This method will overcome the negative aspects of the widely used subsurface drip irrigation (excess water use and nutrient leaching), lead to reduced water usage and environmental effects, and enhance crop establishment and productivity within the Australian processing tomato industry.

Implementing and demonstrating innovative methods of stubble retention in high rainfall and irrigation cropping systems ($49,700, 2004-05)
The Reynolds family is implementing inter-row sowing technology in cropping areas for a range of benefits, including reducing water erosion and soil moisture evaporation, and better disease control. The project also involves using precision guidance technology to run controlled traffic farming; this will improve water penetration and soil structure.

Application of EM mapping technology to optimise productivity and resource management across the low rainfall Mallee ($116,000, 2004-05)
Mallee Sustainable Farming is combining electromagnetic induction and GPS technologies to map soil water content and water use by crops. The project will identify better management options for paddocks with variable soil types, including the improved targeting of inputs.

Trentham pilot Vegetation offsets Project ($8,420, 2004-05)
The Trentham and District Landcare Group is undertaking a pilot project demonstrating how landcare groups can play an important role in identifying and defining native vegetation offset projects. The group will undertake landscape planning to identify potential sites for revegetation projects and encourage local landholders to participate.

Zero nutrient waste discharge aquaculture — aquaponic applications ($22,500, 2005-06)
Minnamurra Aquaponics will integrate a hydroponic plant growth component into an existing recirculation fish-farming system. This will allow the excess nutrients the fish generate to be removed from the system, producing an aquaculture technique with zero nutrient waste discharge to the environment, low water use and minimal environmental impact.

Pigs 'benchmarc' a new idea ($302,000, 2005-06)
The Pig Pen Pty Ltd will test grape marc (a by-product of wine production and a major problem for wineries in Phylloxera zones) as bedding material for deep-litter piggeries. The project will establish whether marc can form an environmentally and commercially sustainable source of supply, and develop logistical strategies to support the sustainability of moving large volumes of low-value material. It will also establish the characteristics of the resultant mulch, including any issues connected to Phylloxera, and create a detailed handbook on the process so other regions of Australia can successfully adopt it.

Sustainable tomato production through minimum tillage and crop residue retention ($54,200, 2005-06)
North Central Produce will test equipment designed to incorporate tomato crop residue in one tractor pass. This has the potential to significantly reduce the amount of tomato crop residue burnt each year and lead to increased soil organic carbon levels.

Assessment of mechanical harvesters suited to thinning small-diameter plantation eucalypts ($20,500, 2005-06)
Woollybutt Pty Ltd will determine conditions under which mechanical harvesting technology can be used economically to harvest small-diameter trees during the thinning of eucalypt plantations. The trial will compare the productivity of two types of machine as well as determine the costs and profitability of each operation. The trial will help to determine the future directions that need to be taken to develop profitable eucalypt hardwood thinning operations.

Budj Bim Heritage Landscape sustainable Kooyang (eel) harvest feasibility project ($90,000, 2005-06)
The Winda Mara Aboriginal Corporation will assess the potential sustainability of a traditionally-constructed eel aquaculture system in three important wetlands in the Budj Bim National Heritage Landscape at Lake Condah, in south-west Victoria. It will restore traditional channels and drainage systems in and around these wetlands and restore and recommission three eel harvest 'nodes' for demonstration and educational purposes. The project will also include the development of new technology to replicate traditional eel baskets/nets. The project will lead to improved fresh water quality and showcase land stewardship, Aboriginal land management and sustainable aquaculture at the landscape scale.

Testing the options for controlled traffic in southern Victoria ($38,500, 2006-07)
Southern Farming Systems will establish a concept farm to demonstrate alternative "controlled traffic" systems to farmers. These systems will range from simple "furrow marking" through to sophisticated GPS Auto Steer Controlled Traffic Systems. Currently there is nowhere for farmers to go to be able to compare different controlled traffic systems side by side. The project also aims to demonstrate the application efficiency of different nutrient applicators in terms of their ability to control off site nutrient loss.

Pasture cropping in south west Victoria to maintain native grasslands ($22,500, 2006-07)
Central Highlands Farming Systems will identify the impact of pasture cropping on the integrity of native grasslands and identify the best management practices for farmers to manage native grasslands in a modified cropping situation.

Mapping seagrass beds in Corner Inlet and changes over time ($36,900, 2006-07)
The Corner Inlet Fisheries Habitat Association will make maps from present and retired commercial fishermen's knowledge of the current and historical distribution of seagrass within Corner Inlet, Victoria. These maps will then enable the changes in seagrass beds over time to be seen and provide a possible monitor for the affect of combined catchment and habitat restoration efforts.

Sustainable farming systems resilient to climate change in northern Victoria ($111,420, 2006-07)
The Northern United Farm Forestry Group will develop and showcase practical guidelines for managing perennial vegetation (both pasture species and tree species) as farming responses to climate change. The work focuses on achieving sustainable management of dryland terrain on the foothills and plains of northern Victoria.

Improving viability of small farm forestry woodlots ($35,000, 2006-07)
The Central Victorian Farm Plantations Committee will develop, trial and improve farmer awareness of cost effective handling processes of thinning material taken from non-industrial (farm forestry) woodlots. The project aim is to develop new processes and improved market value to increase the financial viability and biodiversity values of farm forestry plantations.

Know your environment - telemetry communications in the upper Murray ($126,000, 2006-07)
A consortium of groups in the Upper Murray will establish a community-owned telemetry infrastructure to allow diverse environmental monitoring for primary producers to improve productivity and natural resource management. Rapid access to useful environmental data is crucial for making informed decisions on the farm. Telemetry can assist in collecting and transferring data automatically from distant sensors onto central computers.

Management of nutrient, salt and pesticide leaching in irrigated horticulture ($59,600, 2006-07)
The Kulkyne Way Landcare Group aims to confirm and demonstrate how a simple and cost effective tool (FullStop™ wetting front detector) can be used by growers to assess and manage the amount of water, nutrient, salt and/or pesticides being leached from the soil on their property. Leaching of nutrients, salt and pesticides in irrigated horticulture has long been considered a major issue in relation to contamination and health of the River Murray, surrounding wetlands and groundwater sources. Furthermore, leaching of water and nutrient has economic implications for growers.

Watchem Water – securing reliable water supplies for farms and fauna ($56,745, 2006-07)
The Watchem Development Association will engineer the catchment area of farm dams to maximize runoff and reduce thresholds. It will improve property resilience by improving the reliability of water supply and by helping maintain productive capacity. In addition, the project will address the loss of surface water likely from the proposed piping of the Wimmera-Mallee Stock and Domestic Channel System by establishing a strategic network of open dams adjacent to significant areas of remnant vegetation.

Supply-chain driven environmental performance in the dairy industry ($123,000, 2006-07)
The Murray Goulburn Cooperative will pilot supply-chain driven engagement of dairy farmers in improved environmental performance and reporting via milk company field officers and supplier intranet. It brings together dairy processor/supplier relationship, service providers and catchment planners to evaluate the effectiveness of this approach for wider application across the Australian dairy industry.

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Western Australia

Accurate agriculture for high fertiliser and herbicide efficiencies to maximise stubble retention practices in the low rainfall eastern wheatbelt region of WA ($5,000, 2004-05)
The Ninghan Farm Focus Group is quantifying the efficiency gains of carefully siting crops away from retained stubble. The project aims to increase the use of stubble retention practices that result in more sustainable soil organic levels and help reduce wind erosion.

Development of an Environmental Impact Statement and evaluation of the potential for African mahogany plantation industry in the Kimberly region of Western Australia ($42,500, 2004-05)
Peter Crawford investigated a new technique for establishing and managing African mahogany plantations in WA's Kimberly region. The seedlings will be irrigated in their first year only and, via the watering regime, encouraged to send a tap root down to the water table as quickly as possible. The project will demonstrate the economic viability of mahogany plantations, as well as their environmental sustainability. The needs and attitudes of local Indigenous communities will be a special focus.

New cost-effective and broad-scale native plant establishment equipment, systems and industries ($83,000, 2004-05)
Greening Australia WA aims to reduce the establishment costs associated with setting up commercial-scale native crops by developing new direct-seeding equipment. In addition to the NRM benefits of more trees being planted, the project also aims to develop new native plant industries to provide extracts, food products, structural products, new local native fodder plants and essential oils.

Demonstration of a Sustainable Organic Management System in Horticulture ($126,200, 2004-05)
SPARTEL Pty Ltd are demonstrating a sustainable, on-farm system that processes 'litter' into a product with a consistently higher nutrient value than conventionally stabilised litter. The new system also eliminates problems with fly breeding and other environmental and public health problems associated with the litter. Applying 'in-shed' additives at the end of each batch will help retain the nitrogen. The system will help re-establish links between the horticulture and poultry industries, while also addressing important public and environmental health concerns.

Botherling Springs saltland pastures establishment ($10,280, 2005-06)
Botherling Springs Catchment Group Inc. will assess the potential of Nypa grass (Distichilis) to increase profitability and soil health on three saline-affected sites within the Shire of Goomalling. Establishment issues will include: soil attributes affecting the growth of the plants; the plants' effects on the soil; mineral uptake; effect on water tables; and filling the summer feed gap.

Extending profitable saltland use with salt-tolerant Rhodes grass varieties ($14,000, 2005-06)
Evergreen Farming Inc. will assess the salt tolerance of three new Rhodes grass cultivars under Western Australian climatic and soil salinity conditions. These cultivars have the potential to increase the profitability of higher-salinity discharge areas where the grass varieties currently available cannot be grown successfully. The project is also targeting the sustainability of high-salinity discharge areas by increasing the level of permanent grass cover and helping dry out the excessive moisture that typically collects in such areas.

Grading raised bed furrows to reclaim saltland in Western Australia ($22,850, 2005-06)
Wagin/Woodanilling Landcare Zone Inc. will undertake trials on a cheap and effective means of constructing and renovating raised beds on 'flat' waterlogged and saline valley floors that ensures all furrows will empty completely. The aim is to increase to 100 per cent the extent of reclamation achievable by raised beds on low-slope waterlogged and saline valley floors, and to promote the adoption of raised-bed farming on waterlogged valley floors as a means of restoring the land to profitable and sustainable productivity.

Saline groundwater for seaweed cultivation in the West Australian wheatbelt/ Midwest ($133,220, 2006-07)
The Morawa Farm Improvement Group will use saline groundwater, extracted in the course of farm rehabilitation, as a resource for agronomic trials of marketable marine seaweed in two evaporation basins. The growth rates of the seaweed will determine whether the crop can be used to mitigate the costs of salinity management initiatives.

Remote monitoring of livestock behaviour for sustainable grazing management ($122,543, 2006-07)
The project will use animal behaviours of travel, grazing and resting time in relationship with pasture availability and quality to optimize both animal production and landscape sustainability. The unique approach in using animal behaviour will overcome current constraints in intensive and extensive monitors of productivity that rely on measurements that are post-change or are unable to link the feed base with animal productivity.

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National

Mortality composting in the Australian dairy industry ($112,355, 2005-06)
Dairy Australia will establish best practice on-farm demonstration sites for the safe composting of dead dairy cattle, so as to minimise the risk of contamination of surface and sub-surface water bodies and nutrient overloading of soils in animal disposal areas. The sites — in Victoria and Queensland — will be used to research and monitor the composting process and pathogen destruction, and also for training and demonstrations. Project findings will be integrated into standard operating procedures and existing dairy industry programmes. They will also form the basis for a training programme on on-farm mortality composting, which will be piloted in Gippsland.

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