8. IMPLEMENTATION STRATEGY

This chapter outlines the strategic actions required to achieve the outcomes and objectives. They include strategies aimed at:

- Addressing biophysical issues over and above the on ground works proposed in chapters 6 and 7;
- Improving the social, institutional and economic situation; and
- Implementing and monitoring the plan.

For each strategy, the organizations or positions responsible have been identified.

The strategies for each objective are listed under the following headings:

▪ Planning	Strategies for planning have only been provided where additional activities are required beyond those addressed by this report
▪ Research	Activities needed to cover identified gaps in knowledge
▪ Implementation	For on ground activities ie BMOs- refer to recommendations in Chapter 6 and 7
▪ Education	Areas where skills or awareness need to be increased
▪ Investment	Requirements for resources to carry out the strategy
▪ Monitoring	Identifies the monitoring required to evaluate whether the targets are being met. Additional monitoring may also be required.
▪ Evaluation & Review	Evaluation should take place against the tri-annual targets. Where available, benchmarks of current condition are noted

The targets provided in the Implementation Strategy define the extent of change agreed to by the catchment community over the ten year life of the plan.

A Communications Strategy, developed by LRLG in 1999, needs to be revised and implemented.

Outcome 1: Land managed in an integrated manner, to achieve long term sustainability

Objective 1.1: Land managed according to its capability (as measured by land use)

TARGETS **PRIORITY - HIGH**

2004	2007	2010
65% land used according to capability	80% land used according to capability	90% land used according to capability

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 1, 2 - 4, 10, 11, 15, 17	Landholders
Research	▪ Land use mixes required to maintain landscape functions ▪ Provide data on comparison between the capacity of trees and pastures to use water to prevent leakage, reduce salt movement in the landscape, and maintain surface water yields for production and the environment.	CSIRO, LWA, BRS, NSW Agriculture, DLWC, State Forests
Education	▪ Education package for land managers to increase understanding and awareness of land capability (including soils, geology, landform, slope) ▪ Develop a package about the LMUs, and the associated soil types, how to recognise these soils, and their limitations and capabilities.	DLWC LRLG Project Officer
Investment	See other Objectives under Outcomes 1-5	
Monitoring	Measurement of land use through remote sensing (air photos or satellite imagery)	DLWC or private consultant
Evaluation & Review	Benchmark - 1988 SCS land use and erosion survey, and land capability assessment mapping	LRLG Executive

Objective 1.2: Healthy and productive soils with reduced acidity, sodicity, and improved fertility and soil structure

TARGETS **PRIORITY - HIGH: Acidity, Soil Structure**
MEDIUM: Soil Fertility

2004	2007	2010
No further decline in topsoil pH compared to Yr 2000 figures.	50% improvement toward 2010 target figures. Increase in OC levels relative to Yr 2000	Alluvial soils >5.5 Euchrozems > 6.0 RBE, NCB, R Sol > 5.0 R. Pod > 5.0 (> 4.5 in native grass area) Sil. Sands, Shallow - manage native grass to increase OC.

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 1 - 8, 12. See also Objectives 5.1 and 5.2	Landholders
Research	▪ Investigate remedial systems which are economic in non arable soils ▪ Develop management practices, especially in grazing, that reduce the process of soil acidification (rather than depending on lime to fix the problem once it is present)	NSW Agriculture DLWC (Acid Action program)
Education	▪ Promote importance of addressing acidification to landholders and agronomists, including the need for adequate amounts of lime (based on soil testing), to reduce deep drainage and improve production ▪ Acid Action program -encourage soil testing ▪ Deliver courses in Prograze and other grazing management strategies	Agribusiness, NSW AG Industry groups such as MLA and GRDC through programs eg SGS, Topcrop
Investment	▪ Provide access to funds for farmers to apply lime or gypsum in areas where poor plant growth likely to cause recharge to surrounding areas eg. No interest / long term loans, subsidies. ▪ Set up demonstrations of liming in grazing lands ▪ Make available funds for conservation farming machinery conversions to increase the adoption of reduced tillage systems	RAA, MDBC, NHT, CWCMB, LRLG Acid Action program RAS
Monitoring	▪ Repeat Acid Action Program at three yearly intervals ▪ Access other data eg DLWC Salis database, private soil test results	LRLG Project Officer, NSW Agriculture /Acid Actio
Evaluation & Review	▪ Benchmark - Little River Acid Action Data 1998 ▪ Soils Landscape topsoil acidity data (Fenton 1996)	LRLG Executive

Objective 1.3: Area of dryland salinity stabilised at Year 2000 levels

TARGETS **PRIORITY - HIGH**

2004	2007	2010
Area not more than 10% above 2000 levels	Area not more than 5% above 2000 levels	Area of land affected does not exceed 2000 level

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	Coordinated Landcare / subcatchment planning to implement LRLG plan, and account for hydrogeological connections	FFTF, LRLG Project Officer
Implementation	BMOs 1 - 15 Urban, irrigation and infrastructure salinity control measures	Landholders Urban dwellers
Research	▪ Hydrogeological investigations (including aeromagnetics) to determine flow paths, extent of system, recharge areas, rate of rises, areas at risk etc ▪ Complete EMI surveys and validate with ground-truthing in all high risk areas at property scale ▪ Undertake soil survey for soils at risk ▪ Investigation of pumping options -disposal, use if fresh, use if saline ▪ Sustainable farming systems which make effective use of available water ▪ Social and economic implications of proposed changes	BRS, CSIRO, MDBC, LWA, CRES and other Universities, DLWC, NSW Agriculture, LRLG involved in research project steering committees
Education	Increase awareness amongst all community of impact of dryland salinity (See other objectives that provide the solutions to dryland salinity)	DLWC LRLG Project Officer and EO
Investment	See Objectives 1.1 - 5.2 ▪ State agencies to appoint salinity advisory staff	Farmers, Down stream water users, Broad community, government, MDBC, NAP
Monitoring	▪ Re-establish / maintain bore and piezometers network and recording ▪ Repeat known saline sites survey ▪ Map areas at risk of salinity using "ultrasound technology"	DLWC, LRLG Project Officer DLWC DLWC
Evaluation & Review	Benchmark - Known Saline Sites Survey 1998	LRLG Executive Officer

Objective 1.4: Minimal soil erosion in catchment

TARGETS **PRIORITY - HIGH**

2004	2007	2010
Median turbidity at end of Little R. < 20 NTU, and variation < 150% ie peak not to exceed 50 NTU	Median turbidity at end of Little R. < 20 NTU, and variation < 100% ie. peak not to exceed 40 NTU	Median turbidity at end of Little R. < 15 NTU, and variation < 100% ie. peak not to exceed 30 NTU

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 1 - 7, 10 - 13, 15, 16	Landholders
Education	▪ Promotion of conservation farming and other BMOs - see Obj 5.1 ▪ Form conservation farming group for support and joint learning experiences ▪ SGS and Topcrop groups, to increase skills base on ground cover recognition	LRLG Project officer " SGS, NSW Agriculture
Investment	▪ Discretionary funds for purchase /conversion to minimal tillage machinery ▪ Incentives for establishment of perennial pastures ▪ Support to implement strategic grazing- fencing and watering points	RAA, LRLG MDBC, NHT, NAP
Monitoring	▪ Monthly turbidity / nutrient grab samples from gauging station sites	DLWC
Evaluation & Review	Benchmark - Spot sampling NTU data for Obley; 1999 plus earlier data set from 1976-1991	LRLG Executive officer

Outcome 2: Improved terrestrial biodiversity and landscape function through increased levels of native vegetation

Objective 2.1: Tree cover restored to levels that provide sustainable landscape function

TARGETS **PRIORITY - HIGH**

2004	2007	2010
25% of change required to achieve recommended land use mixes / timber cover is implemented on each LMU	50% of change required to achieve recommended land use mixes / timber cover is implemented on each LMU	80% of change required to achieve recommended land use mixes / timber cover is implemented on each LMU

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	▪ Provide maps of pre-clearing vegetation so most suitable species can be selected ▪ Planning at property and catchment /LMU level required to coordinate tree planting to maximise the benefits at landscape level	DLWC, NPWS FFTF, LRLG Project officer
Implementation	BMOs 1, 5, 8 - 11, 17	Landholders
Research	▪ Research into direct seeding of trees ▪ Investigate appropriate species for strategic plantings, and agroforestry ▪ Investigate economics of agroforestry, with view to developing an incentive scheme that will result in increased timber cover with viable returns ▪ Investigate implications for salt movement and water yield from increased tree cover ▪ Social implications of changing landuse from agriculture to timber ▪ Investigate / develop trading in carbon and salinity credits	DLWC, State Forests, GA " State Forests, Macquarie Food and Fibre CSIRO, BRS State and Commonwealth governments and agencies
Education	▪ Education about positive and multiple benefits of trees in the landscape. ▪ Tree growers and seed collection courses for workforce and farmers ▪ Upskill labour to provide a tree planting group for employment in area	LRLG Project officer DLWC, GA, TAFE, ACE

Investment	▪ Access discretionary funds and distribute to subsidise establishment costs for tree planting according to priority LMUs - fencing, trees, labour. ▪ Increased incentives available for multiple purpose plantings using native (provenant) species, to enhance biodiversity, reduce salinity, improve agricultural production, provide forestry options, and carbon credits. ▪ Provide technical support to know what to plant, where and provide coordination of plantings across catchment ▪ Coordinate and promote tree planter in area ▪ Coordinate tree planting labour groups ▪ Ensure availability of provenant seed / seedlings for plantings <u>For areas where agroforestry / forestry is appropriate</u> - ▪ Implement a tender system for agroforestry activities where landholders provide land under contract and remuneration is competitive with current agricultural enterprises. ▪ Develop infrastructure and markets for agroforestry industry	LRLG GA, RTA DLWC Grassy Box Woodland project NVCA incentive scheme Bushcare, WWF and other environmental trusts LRLG Project Officer LRLG Project Officer LRLG Project Officer , GA GA CW FFP, State Forests MFF, LRLG State Government , Regional Development organisations
Monitoring	▪ Monitoring - Repeat Farm survey at three yearly intervals, ▪ Satellite imagery assessment of tree cover (need assessment of current landuse) ▪ Include records of tree planting in GIS	LRLG DLWC / private consultant LRLG Executive officer
Evaluation & Review	Benchmark - Farm survey 2001 (iCAM), 1988 SCS Land Use Survey, and M305 and Eastern Bushlands Database mapping	LRLG Executive Officer

Objective 2.2: No further losses of biological diversity and remnant vegetation.

TARGETS **PRIORITY - HIGH**

2004	2007	2010
On private land, 5% remaining native vegetation* preserved for biodiversity, and 25% managed for multiple objectives **. No clearing of intact remnants	On private land, 10% remaining native vegetation preserved for biodiversity, and 50% managed for multiple objectives	On private land, 25% remaining native vegetation preserved for biodiversity, and 75% managed for multiple objectives

**Native vegetation includes native grasses and herbs, shrubs, and trees.*
*** Management of remnants and new plantings should be for multiple purposes / objectives ie agricultural production (shade and shelter), erosion control, timber production, biodiversity, aesthetics, tourism, capital improvement of land etc*

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	▪ Map existing vegetation, including vegetation communities and associations, and areas of "high conservation value", and condition. ▪ Model pre-clearing vegetation ▪ Develop a vegetation management plan for the catchment, focussing on preserving and enhancing existing remnants. ▪ Implement regional vegetation plan through landcare / property plans	DLWC, NPWS NPWS DLWC, LRLG FFTF, LRLG Project officer
Implementation	BMOs 1, 5, 7, 8, 10, 11, 16, 17	Landholders Public land managers
Research	▪ Establishment and management of native grasses ▪ Management of remnants for long term conservation, preservation	NSW Ag, DLWC, Industry R&DC, LWA, Stipa
Education	▪ Education packages on biodiversity principles, and management of areas conserved as native vegetation, including ways of improving condition of remnants. ▪ Education packages on how to manage native vegetation for multiple objectives, allowing both production and biodiversity enhancement and improvement of remnants. ▪ Provide information on establishment and management of native grasses ▪ Tree growing and seed collection courses	NPWS Bushcare Coordinators LRLG Project officer DLWC Conservation officers and Vegetation officers Stipa, SGS, LRLG Project officer GA, Nursery industry, TAFE

Investment	▪ Access and distribute discretionary funds for fencing, labour and management costs in such a way as to encourage multiple objective management, including bonuses for positive biodiversity outcomes, or areas of high conservation value. ▪ Stewardship payments for managing land on behalf of the public / lost production potential eg. Rate reductions for non productive land	LRLG NVCA property agreements Grassy Whitebox Woodland Environment groups eg WWF All tiers of government
Monitoring	▪ NVC Applications for a) clearing b) property agreements/incentives ▪ Satellite imagery assessment of landuse ▪ Inclusion of works on GIS project	DLWC DLWC / private consultant LRLG Executive officer
Evaluation & Review	Benchmark - M305 and NPWS Bushlands vegetation mapping Review implementation and net gains against targets	LRLG Executive officer

Objective 2.3 Native fauna habitat enhanced

TARGETS

PRIORITY - HIGH

2004	2007	2010
Indicator species increased by 10%	Indicator species increased by 25%	Indicator species increased by 50%

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	▪ Develop a vegetation management plan for the catchment, which includes consideration of fauna habitat, Threatened Species, minimum areas of vegetation required for habitat, targets for conservation	NPWS, DLWC LRLG
Implementation	BMOs 5, 7, 8, 10, 11, 15, 16, 19	Landholders
Research	Species habitat requirements	NPWS, LWA, EA
Education	▪ Value of biodiversity, including native animals ▪ Habitat requirements, population imbalances due to lack of habitat etc	Bushcare, LRLG Project officer
Investment	As for Objective 2.1 and 2.2	
Monitoring	▪ Repeat Bird counts and/or ANOU records ▪ Records of amount of remnant fenced to be entered into GIS, ▪ Farm survey (CRES) to measure amount of land managed for both production and conservation objectives. ▪ Number of voluntary conservation agreements	CSIRO, ANOU LRLG Executive officer CRES, LRLG DLWC, NPWS, GWBW Proj.
Evaluation & Review	Benchmark - Bird counts 2001 (CSIRO) Farm management survey 2001 (CRES)	LRLG Executive officer

Outcome 3: ***Healthy riparian zones and streams, capable of supporting a full range of aquatic life and suitable for all domestic and productive uses***

Objective 3.1: Riparian zones managed as a distinct land management unit, according to Best Management Practice
**The riparian zone for the purpose of this objective is regarded as a third order stream or larger, and also includes wetlands, waterways and floodplains.*

TARGETS **PRIORITY - HIGH**

2004	2007	2010
15% riparian land is managed separately from surrounding paddocks.	35% riparian land is managed separately from surrounding paddocks.	60% riparian land is managed separately from surrounding paddocks.

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	▪ Rivercare plans should be prepared in sections of river degradation	DLWC
Implementation	BMOs 1, 5, 7, 8, 10, 11, 16-19	Landholders
Research	▪ Need to tailor generic riparian zone management recommendations to this area	LWA, DLWC
Education	▪ Disseminate packages about value and management of riparian zones	DLWC, LWA (Riparian Prog) LRLG Project Officer
Investment	▪ Discretionary funds for fencing, alternative watering points, as well as for vegetation re-establishment, weed control, bank restoration works. ▪ Coordinate a Labour team to help implement works ▪ Enforce legislation on protected areas and over weed control	LRLG ACV, GA, LRLG? DLWC, Local Govt/Weeds CC
Monitoring	▪ Repeat survey of farm practices every three years ▪ Maintain records of length of stream fenced out	LRLG
Evaluation & Review	Benchmark - Survey of farm practices (iCAM 2001)	LRLG Executive Officer

Objective 3.2: Biodiverse streams, capable of supporting a full range of aquatic life

TARGET **PRIORITY - MEDIUM**

2004	2007	2010
Native fish increasing. Alien fish numbers reduced to 50% total population	Native fish increasing. Alien fish numbers reduced to 35% total population	Increased diversity and numbers of native fish. Alien fish under control.

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 4, 8, 10, 11, 16-20 ▪ Also possible construction of artificial wetlands ▪ Weir management / fish ladders	Landholders, Local govt State agencies, MDBC
Research	▪ Management of carp, mosquito fish and other alien fish	NSW Fisheries, CRC Freshwater Ecology
Education	▪ Value of river system over and above production purposes	LRLG Project Officer DLWC Rivercare staff
Investment	▪ See Objectives 3.1 and 3.3 and 2.3, and land management objectives	
Monitoring	▪ Repeat fish surveys, evidence from fishermen ▪ Biological sampling under water quality monitoring program	NSW Fisheries, DLWC, CRC Freshwater Ecology
Evaluation & Review	Benchmark - NSW Fisheries Fish Survey - Little River at Yeoval 1994-1998	LRLG Executive Officer

Objective 3.3: Groundwater levels stabilised with watertables deeper than 2 metres

TARGETS **PRIORITY - HIGH**

2004	2007	2010	2015
No improvement expected to be detectable in 3 years.	Reduce the rate of rise of groundwater systems to less than 20 cms p.a.	Reduce the rate of rise of groundwater systems to less than 10 cms p.a.	Groundwater systems steady and surface watertables below 2m across catchment, (except in areas where they were naturally <2 m).

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 1 - 3, 5 - 7, 9 - 12, 14, 15, 18	Landholders DLWC
Research	▪ Investigate groundwater pumping and other engineering options for ground water pressure control, and identify any potential sites. ▪ Hydrogeological studies to determine ground flow and recharge sites	DLWC, BRS, CSIRO
Education	▪ Education for landholders, local government and other decision makers about hydrogeological processes, and how they operate in Little River	DLWC, LRLG Project officer
Investment	▪ Additional key sites bore monitoring piezometers ▪ See other objectives which help address salinity	Landholders, LRLG Project officer
Monitoring	▪ Regular monitoring and analysis of bore network by DLWC ▪ Monitoring of shallow piezometer network by landholders, with support and analysis by paid staff.	DLWC LRLG Project officer Possible short term contract to re-establish network
Evaluation & Review	Benchmark - DLWC bore monitoring network- Mid Macquarie Project	DLWC LRLG Executive Officer

Objective 3.4: Water quality suitable for recreation, irrigation and drinking water

TARGETS **PRIORITY - HIGH**

2004	2007	2010
Water quality meets standards set by CWCMB, and State and MBDC strategies for salinity and nutrient management, and river flows.		

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	▪ Targets to be set for salinity, nutrients, and water extraction / environmental flows for Macquarie River and its tributaries by other organisations. LRLG to collaborate with CWCMB, and the Water Management Committees	DLWC, EPA, MDBC, CWCMB, Macquarie Water Management C'ttees LRLG Executive
Implementation	BMOs 1-7, 10, 11, 13 - 15, 17 - 20	Landholders Local government
Research	Other organisations responsible	CWCMB, DLWC Water reform Committees
Education	▪ Awareness campaign about fertiliser and chemicals entering streams from inappropriate applications, and value of a healthy river system.	DLWC, LRLG Project officer
Investment	▪ See objectives for land and water management. ▪ Installation of additional water quality monitoring stations, including Ec, nutrient sampling, biological monitoring	LRLG DLWC, LRLG
Monitoring	▪ In-stream monitoring of Ec, and nutrient sampling, within and at end of Little River system	DLWC
Evaluation & Review	Benchmark - In stream Ec at Obley 1999-2000 data set	DLWC, LRLG Executive Officer

Outcome 4: Pest animals reduced to levels that do not result in economic losses or environmental damage

Objective 4.1: Pest animals* controlled to prevent economic losses and environmental damage

TARGETS **PRIORITY - LOW**

** Pest animals includes feral animals and native animals which are out of balance with their environment and habitat*

2004	2007	2010
Coordinated pest animal reduction programs between landholders in place.	Pest numbers reduced from 2000.	Pest animals cause minimal economic impact on agriculture and damage to the environment

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 10, 11 (has +ve and -ve impacts), 16	Landholders NPWS, RLPB
Research	▪ Cost effective ways of reducing pest numbers	BRS
Education	▪ Role of habitat and watering points in pest management	NPWS
Investment	▪ Discretionary funding for pest control in areas of vegetation conservation ▪ Coordination of landholders, including public lands to undertake control measures	LRLG LRLG Project officer, RLPB officers
Monitoring	▪ RLPB figures on pest numbers ▪ Applications to NPWS for kangaroo culling	RPLB NPWS
Evaluation & Review	Benchmark - RLPB figures on pest numbers 2000	RLPB LRLG Executive officer

Outcome 5: Sustainable (non-degrading) farming systems implemented across agricultural land

Objective 5.1: Best Management Options implemented on farm

TARGETS **PRIORITY - HIGH**

2004	2007	2010
35% properties using BMO for more than 50% of their management activities	60% properties using BMO for more than 50% of their management activities	85% properties using BMO for more than 50% of their management activities

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	BMOs 1-13, 16-20 ▪ Stengthen linkages between production and environmental utcomes ▪ Industry sectors to develop and promote codes of practice (cf cotton BMP manual)	Landholders GRDC, MLA, WRC, DRDC etc
Research	▪ Research and investigation into sustainable and productive ways to utilise land within its capability ▪ Extension of outcomes in packages / programs suitable for use by landholders / catchment managers	All primary industry R&DCs
Education	▪ Workshop program to Agribusiness advisers and "production based" agronomists to "bring them on board" about sustainability messages eg. Education on "Use water where it falls" - maximise production and minimise deep drainage. ▪ Initiate a conservation farming group in the district to overcome attitudinal barriers to adoption of reduced tillage eg. chemicals, spray management, reduce fear of failure. ▪ Provide courses on grazing management eg Prograze, HRM, Grazing for Profit, SGS groups etc. ▪ Increase activities of rivercare and bushcare officers in the catchment	LRLG Project officer, DLWC NSW Ag, private consultants and agronomists, DLWC NSW Ag, MLA, private providers DLWC, GA
Investment	▪ Appoint a project officer to undertake education, landcare coordination and project implementation in Little River. ▪ Establish demonstration sites and on-farm activities to show how BMOs can be implemented, and viability improved or maintained	LRLG LRLG Project Officer, DLWC, NSW Ag, NPWS etc

Monitoring	▪ Repeat farm practices survey at three yearly intervals	LRLG
Evaluation & Review	Benchmark - Farm survey 2001 (iCAM 2001)	LRLG Executive officer

Objective 5.2: Suitable sustainable farming systems developed for the catchment

TARGETS **PRIORITY - HIGH**

2004	2007	2010
A research program has been established to investigate sustainable farming practices in the district, with a local steering committee	Results of research available and actively extended to farming community and advisers	Adoption across 25% of catchment of new / innovative farming systems

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	▪ Collaborate with state agencies, national research organisations and funding bodies to have farming systems research undertaken in the slopes area of the Macquarie valley. ▪ Make available suitable sites and willingness to contribute to steering committees, and ongoing extension activities.	LRLG Landholders
Regulation	▪ Enforce Noxious Weeds Act and other NRM legisaltion eg NVCA, for the benefit of surrounding landholders & catchment sustainability	State agencies, Local govt, Weeds County Councils
Research	▪ Research Programs on farming systems suitable for CW. - Comparison between trees, pastures and crops in their capacity to use water use to prevent leakage in this climatic zone - Farming systems that achieve more effective use of available water and a balanced water table - Will increasing areas of perennial pastures and trees result in declining quantities of water run-off for dams (on farm storage) and down stream. Will there be adequate access to water if there is significant increase in infiltration? ▪ Produce tools and packages for landholders and catchment managers that draw together the latest available research outcomes	CSIRO, LWA, (Heartlands, RAAL) MDBC Farming Systems program GRDC, MLA and other primary industry R&DCs NSW Ag, DLWC, NPWS, Stat Forests etc
Education	▪ Access, develop where necessary and deliver education packages within catchment so people understand principles of sustainability, the guiding principles which from the basis of this Action plan, and	LRLG Project officer DLWC, NSW Ag

Education (cont)	the BMOs. ▪ Make information available to landholders eg. establish a library, provide guides to web sites, produce newsletters etc. ▪ Other specific education areas include - - Drought management - Climate variability management - options and risks	
Investment	Demonstration of new farming systems Support for extension and education programs	Researchers and state agencies LRLG
Monitoring	Farm management survey 2010	LRLG
Evaluation & Review	Assessment of amount of research undertaken and role of steering committee, and whether the research is available to the wide community	LRLG Executive Officer

Objective 5.3: Property plans developed and implemented in line with this catchment plan

TARGETS **PRIORITY - HIGH**

2004	2007	2010
50% properties have a property plan based on this catchment plan 25% of all property plans have been implemented	75% properties have a property plan based on this catchment plan 50% of all property plans have been implemented	95% properties have a property plan based on this catchment plan 75% of all property plans have been implemented

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	▪ Negotiate with FFTF to deliver a PMP program tailored for landholders in Little River catchment, that reviews or develops property plans based on this Catchment Plan - ie. integrated property plans covering all the issues and consistent with the landuse recommendations and BMOs outlined in this plan, including a coordinated tree planting program. ▪ Prepare drought management plans, aimed at maintaining >70% Ground cover even during drought.	FFTF and all associated agencies. LRLG, landholders and landcare groups
Implementation	▪ Coordination between neighbouring properties for salinity and biodiversity issues, development of agroforesty proposals, weed and pest control etc.	Landholders
Education	▪ As for Objectives 5.1 and 5.2 plus other area	
Investment	▪ FFTF agencies to prepare and deliver courses tailor made for this catchment. ▪ Consider tying incentives to PMP plans	RAA, NSW Ag, DLWC
Monitoring	▪ Repeat survey at three yearly intervals	LRLG
Evaluation & Review	Benchmark - Farm survey 2001 (iCAM) to determine what plans are already completed. Review of FFTF programs already run in catchment.	FFTF LRLF Executive officer

Outcome 6: Profitable enterprises, based on sustainable management of the natural resources and human capital

Objective 6.1: Profitable agricultural production, derived from sustainable management

TARGETS **PRIORITY - HIGH**

2004	2007	2010
To have 25% of farmers participating in comparative financial analysis. Indicators of profitability and sustainability established and district averages determined.	To have 50% of farmers participating in comparative financial analysis. Maintain district average, with introduction of less profitable farmers to the process.	To have 75% of farmers participating in comparative financial analysis. District averages improved by 10% for profitability and sustainability.

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	▪ Establishment of Benchmarking groups - financial and production based ▪ Access to Rural Adjustment Scheme to achieve property amalgamation and other restructure measures to improve viability.	Private consultants, NSW Ag, Topcrop, RAA, Farm Biz
Research	▪ Sustainability indicators to include in benchmarking program	Topcrop, GRDC, MLA, LWA
Education	▪ Promotion about the value of benchmarking program in improving profitability and as a learning tool	LRLG Executive Officer NSW Ag, Consultants
Investment	▪ Incentives or support to get farmers started in program. ▪ Continue to deliver Farm Biz programs in region	LRLG RAA, NSW Ag
Monitoring	▪ Numbers of farms participating in benchmarking (comparative financial analysis) ▪ Trends in "benchmarking" indicators - profitability and sustainability	Benchmarking consultants
Evaluation & Review	Benchmark - Economic survey of landholders carried out by iCAM 2001	LRLG Executive Officer

Outcome 7: A well-informed community, with the necessary skills to manage the natural resources in a way that will achieve a viable and stable district

Objective 7.1: Land managers appropriately skilled to achieve profitable and sustainable land management

TARGETS **PRIORITY - HIGH**

2004	2007	2010
25% of land managers have necessary skills to manage for profit and sustainability	50% of land managers have necessary skills to manage for profit and sustainability	85% of land managers have necessary skills to manage for profit and sustainability

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	▪ Appoint project officer to assist farmers, including providing information to groups and individuals ▪ Establish a library of NRM material for use by local community. ▪ Provision of training and learning opportunities to build capacity and enhance skills for individuals and regional communities.	LRLG LRLG Project officer P.O., agencies and other education providers
Education	▪ Encourage higher level of education and skills within community - improved management skills - increased local opportunities for education for children - improved marketing skills - business skills "cutting edge" ▪ Provide courses and learning opportunities as outlined in Obj.1-6	State agencies Universities and colleges eg Landcare course - Tocal, CSU Private consultants Private education providers TAFE, ACE
Investment	▪ Provide additional implementation incentives to people who undertake training ▪ Funding for an education/ project officer ▪ Agency staff and resources providing training services in Little River	LRLG State agencies, LRLG
Monitoring	▪ Repeat farm practices survey on three yearly intervals ▪ Collate information about courses held and numbers of participants	LRLG
Evaluation & Review	▪ Benchmark - Farm survey to establish current levels of education, courses undertaken, and interest in further learning experiences ▪ Access and analysis ABS statistics on education levels	LRLG LRLG Executive officer

Objective 7.2: The wider population and all tiers of government informed about sustainable natural resources management, and the need to provide policies and resources that promote stable and viable rural communities

TARGETS **PRIORITY - MEDIUM / LOW**

These targets are considered desirable by the LRLG - however, they are beyond their control, and therefore are not an aspect against which the plan is accountable

2004	2007	2010
Decline in population in area halted.	Infrastructure improving ie. - improved roads, - full access to mobile phone, - no further withdrawal of government services from the region	New industry and employment opportunities established in area, which assist in implementing BMOs for NRM

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	▪ Implement a communications strategy ▪ Inform the wider community of importance of investing in rural NSW ▪ Inform politicians at all levels of issues and concerns in the area ▪ Lobby politicians and bureaucrats for improved resources for area including - road and rail funding - mobile phone access - provision of social support infrastructure - education facilities - investment in industry and creation of employment opportunities. ▪ Increase cooperation and investment by working effectively with all stakeholders though partnerships to make the region stable, viable and self-supporting (not dependent on social services /relief packages)	LRLG and LRLG Executive officer Work with other groups such as NSW Farmers, health and welfare groups to extend message Regional Development Orgs, All tiers of government, Business investors
Research	▪ Research into the social impacts of changes in resource management eg potential effect of increased forestry on populations and social dynamic	Universities etc involved in social research
Monitoring	▪ ABS and local government statistics on investment, road expenditure etc.	LRLG Executive Officer
Evaluation & Review	Benchmark - Current level of investment and government services provided to region, and condition of infrastructure.	LRLG Executive Officer

Outcome 8: The plan and associated processes and arrangements are relevant, effective and reflect the current conditions

Objective 8.1: A plan with effective recommendations, appropriate for the current biophysical, human and economic resources

TARGET **PRIORITY - HIGH**

2004	2007	2010
Catchment Plan to be reviewed, evaluated and updated	Catchment Plan to be reviewed, evaluated and updated	Catchment Plan to be reviewed, evaluated and updated

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	▪ Appoint an Executive Officer to oversee the implementation of the Catchment Plan - including supporting community processes, putting this strategic plan into action, communications and negotiations for resources, and monitoring and evaluation	LRLG
Research	▪ Identify gaps in research and other information and coordinate activities to address these knowledge gaps. ▪ Update landuse data, so appropriate monitoring and benchmarking activities can be implemented	LRLG Executive Officer DLWC or private consultant
Education	▪ Implement communications strategy, increase awareness of NRM issues	LRLG Executive Officer
Investment	▪ Access funds for E.O. plus operating costs including publications and communications ▪ Access funds for an assessment of current landuse in the catchment?	LRLG
Monitoring	▪ Update GIS and other reporting systems with projects undertaken and other monitoring ▪ Coordinate and collate monitoring data, including SoE reports	LRLG Executive Officer
Evaluation & Review	Benchmark - Situation statement - Stage 1 of Little River Catchment Plan to evaluate changes in condition of the resource base ▪ Evaluate and revise plan following trimester reviews	LRLG Executive Officer

Objective 8.2 A catchment plan that is coordinated with other plans

TARGET

2004	2007	2010
The Little River CP will be supported and resourced by other catchment planning instruments and the relevant local government plans are complementary	Support and resources for the plan will be provided by local government and industry / development bodies operating in the area as well as private industry and the wider community though various cost sharing mechanisms	Local government plans and catchment plans are fully consistent. There is common monitoring and reporting processes for local plans. State and MBDC strategies are complementary, and support this plan.

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	Gain accreditation of LR Catchment Plan under NAP and State authority	
Implementation	▪ Increase awareness of issues in Little River ▪ Market the catchment management plan to other planning bodies ▪ Communicate, negotiate and liase with policy, planning and funding organisations to gain support and consistent strategies across all plans that apply to the area. Eg. - CWCMB, Water reform and vegetation planning committees. - State agencies- DLWC, DUAP (REPs), NPWS etc, - State and Federal agencies, including MDBC -salinity, biodiversity and water flow and nutrient strategies and catchment health indicators - OROC, CentrOC and individual local governments - LEP, SoE reporting - Regional development boards CW Planning Group	LRLG Executive Officer to work with other organisations
Education	Increase awareness in Local Govt of cost of degradation to their assets	LRLG Executive Officer
Monitoring	Review of Local Government planning documents, SoE reports.	LRLG Executive Officer
Evaluation & Review	Benchmark - No appropriate benchmark available	LRLG Executive Officer

Objective 8.3 The catchment plan and vision for the Little River catchment promoted to all stakeholder groups

TARGET

2004	2007	2010
75% people within the catchment are aware of the catchment Plan and its contents.	75% of key stakeholders willing to implement plan	75% of all stakeholders identified in communications strategy willing to implement their share of the plan.

STRATEGY	ACTION	Lead Agency / Stakeholders
Planning	Facilitate a workshop annually with Steering Committee to update communications plan	LR Executive officer LRLG
Implementation	▪ Distribute this plan widely ▪ Build landcare networks through continued commitment and promotion ▪ Regular media releases into local and regional press ▪ Visit and lobby policy makers, including politicians, for resources and commitment ▪ Maintain an active network with all identified stakeholders	LR Executive officer
Investment	▪ Operating funds for LR Executive officer	LRLG
Monitoring	▪ Newspaper articles ▪ Catchment survey to assess - Level of awareness in community of LR activities, importance of a healthy catchment, and attitude to changing practices	LR Executive officer
Evaluation & Review	Annual revision of communications strategy to ensure current relevance	LR Executive officer

Objective 8.4 Government, private industry, and local communities share the costs of implementing this catchment plan.

TARGET

2004	2007	2010
The Steering committee has negotiated cost sharing arrangements to fund 35% of the Plan	The Steering committee has negotiated cost sharing arrangements to fund 65% of the Plan	The Steering committee has negotiated cost sharing arrangements to fund 100% of the Plan

STRATEGY	ACTION	Lead Agency / Stakeholders
Implementation	▪ An "auditing" process in place to ensure resources are properly used and allocated ▪ Cost sharing mechanism and administrative arrangements agreed to ▪ True partnership between community and all tiers of government	LRLG Government agencies and LRLG
Research	▪ Trial various ways of providing incentives to land managers to adopt new practices eg Environmental Management Systems (EMS), tendering systems for available funds, property agreements. ▪ Establish "ecosystem values" for positive environmental outcomes from improved management.	LRLG, Agencies with funding opportunities CSIRO or other research organisations
Investment	▪ Investment from landholders, all tiers of government, business, sponsorships to support the improved use of the natural resources in the catchment. ▪ Support particularly needed for salinity control, and tree planting, assistance with cash flow problems for acidification. Funds to be directed to priority areas and issues first, through willing participants.	Whole community to bear cost LRLG Executive officer to negotiate funding agreements, and make applications form funds
Monitoring	▪ Keep records of funds and investment made into the district as a result of this plan	LRLG Executive officer
Evaluation & Review	▪ Regular review of level of support being received into catchment, and extent and success of uptake by landholders	LRLG Executive officer