DATA COLLECTION ON OUTPUTS AND OUTCOMES

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NSW Agriculture as a Research, Development and Extension organisation is primarily concerned with increasing the information bank on which its clients/stakeholders can make decisions and to influence those decisions through facilitating change in skills, knowledge and behaviour/adoption.

To achieve these two results the Department delivers a range of products and services (outputs) and measures the predicted results or effects (from the planning process) that has occurred with specified clients/stakeholders (outcomes).

Our core stakeholder is the NSW Government on behalf of the community and the NSW taxpayer. Our clients are:

- those people and organisations directly involved in the production, processing, marketing and distribution of NSW food and fibre products
- Agribusiness and other groups that service the NSW food and fibre industries including other government departments and corporations, local government, education institutions, marketing authorities, banks, accountants, consultants and veterinarians
- NSW rural communities including catchment management committees and Landcare groups
- Executive government, central agencies and land management agencies.

This paper describes the development of performance measures for outputs and outcomes and a computerised data collection, storage and retrieval system that uses the internet.

DEVELOPMENT OF PERFORMANCE MEASURES

OUTCOMES

During the strategic planning process objectives and performance measures have been set which have driven the data collection of outcomes.

CORPORATE LEVEL:

Goal 1 - Innovation: More farmers and other members of the food and fibre supply chain adopting innovative practices that enhance international competitiveness and maximise profitability while ensuring environmental resources are protected.

Measures of Success

- Percentage of New South Wales food and fibre industries and individual producers who are aware of and
 adopting practices recommended by NSW Agriculture that are designed to improve international
 competitiveness, long-term economic viability and responsible resource management.
- Collaborative arrangements with other research and extension providers.

Goal 2 - Sustainability: More farmers and community group adopting whole-farm and catchment-wide solutions that improve the sustainability of agriculture and minimise any adverse impacts of agriculture on the environment.

Measures of Success

- Proportion of farmers aware of and successfully adopting whole-farm or catchment plans aimed at improving
 the sustainability of agriculture and the environment.
- Reduced levels of soil degradation, acidity and contamination, and improved water quality and other appropriate environmental parameters.
- Increased adoption of approved waste management and remediation practices.

Goal 3 - Quality Assurance: More New South Wales food and fibre industries adopting adequate quality assurance systems that ensure quality, food safety and other requirements of consumers.

Measures of Success

- Percentage of New South Wales food and fibre industries, products and producers meeting Australian and international quality and food safety standards.
- Plant and animal disease and other diagnostic needs successfully met.
- Industry alliances developed as a result of NSW Agriculture.
- New business and market opportunities identified and realised.

Goal 4 - Agricultural Protection: Minimising the impacts of exotic and endemic pests, weeds, diseases and natural disasters on rural industries, the agricultural resource base and the community.

Measures of Success

- The incidence and impacts of exotic and endemic pests, weeds and diseases.
- Amount of chemical used.

Goal 5 - Business Management: More farmers adopting business practices that enable them to be better finance and natural resource managers, more self-reliant and better able to manage risk.

Measures of Success

• Proportion of farmers aware of and successfully adopting business and risk management practices.

Goal 6 - Needs of Government: Meeting legislative, information and policy needs of government regarding the agricultural industries as well as other special community service obligations, such as the welfare of animals.

Measures of Success

- The objectiveness and timeliness of rural policy advice.
- Implementation of legislation reform.
- Proportion of industries and the community adopting recommended and codified animal welfare practices.

PLANT INDUSTRIES DIVISIONAL LEVEL:

Objectives

Objective 1

New South Wales farmers and agricultural industries adopting cost effective and sustainable production and processing systems, such as:

- crop and pasture rotations
- pesticide risk reduction
- pasture and rangeland management
- quality assurance (QA) systems to maintain and expand international competitiveness while protecting the natural resource base.

Objective 2

New South Wales farmers adopting new varieties of crop and pasture species which meet performance criteria for improved yield and quality, pest and disease resistance, adaptation to new and existing environments, and satisfy the requirements of markets and consumers.

Objective 3

New South Wales farmers and agricultural industries adopting best practice for resource protection and

Performance Measures - Outcomes

- Percentage adoption by producers of best practice management systems including crop and pasture rotations, IPM and QA systems.
- Percentage reduction in use of environmentally 'hard' (broad-spectrum) pesticides.
- Establishment and impact of biological control agents and genetically improved plants.
- Number of people participating in, and impact of, Prograze.
- Fertiliser and lime use.
- Percentage market share of Departmental varieties.
- Cost of breeding and selection projects with % of cost contributed under user pays (RIRCs) etc.
- Impact on farm profitability (value/ha x ha sown.

 Levels of awareness and adoption of best practice options for soil, water, vegetation, biodiversity, land resource management, organic waste management of the State's soil, water, vegetation, biodiversity and land use.

Objective 4

New South Wales farmers meeting food safety requirements of New South Wales produce.

Objective 5

Plant industries in New South Wales competing domestically and internationally through client recognition of industry disease, pest and contamination status, and the management of drought and natural disasters.

Objective 6

New South Wales plant industry farmers becoming aware of and using business management and property planning techniques.

Objective 7

That the advice given by the Division meets the legislative, governance, information and policy needs of the Executive and New South Wales Government.

Objective 8

A working environment that fosters effective use of resources through cooperation, job satisfaction and staff development.

- recycling, threatened species, pesticide drift and vegetation management.
- Measured change in irrigation efficiency (%).
- Number of trace backs on plant products.
- Proportion of New South Wales produce meeting safety requirements.
- Maintain or increase international market access because New South Wales food products are free from pests or contaminants.
- Reduced percentage of producers whose profitability is adversely affected by major incursions of exotic plant pests.
- Proportion of the State where plant production is restricted because of pests or contaminants.
- Effectiveness in dealing with pest and disease outbreaks or incursions.
- Number of structured projects, for example Prograze and Topcrop, utilised.
- Percentage of farmers adopting risk management tools and/or property management plans.

(Only output performance measures taken.)

- Satisfactory recruitments (number of appeals).
- Eligible staff gaining promotion.

Strategic planning occurs at program, program leader/subprogram levels and to individuals in a cascade from these two levels.

OUTPUTS

Strategies are created at all levels in the organisation and data on these is collected through PM Web.

At the Plant Industries Divisional level these are:

Strategies

Strategy 1

The Division will develop, demonstrate and promote best practice systems for producing and managing crops and pastures including developing and implementing: quality assurance (industry and statutory); integrated pest (insects, plant diseases and weeds) management (IPM) systems and biological control agents; and develop strategies for resistance management.

Strategy 2

Divisional staff will: carry out breeding and selection projects for wheat, barley, oats, canola, lupins, chickpeas, field peas, faba beans, rice, mungbeans, lentils, subterranean clover, white clover and lucerne, and other pasture species including native grasses, maintain and screen germplasm collections, facilitate and conduct certification and registration schemes; commercialise varieties, demonstrate new varieties and promote their adoption; and provide New South Wales policy advice on plant improvement projects (in many cases these projects are part of national plant improvement schemes).

Strategy 3

Divisional activities will include developing, demonstrating and promoting best agricultural practices for: soil, water, vegetation, biodiversity, land resource management, threatened species, vegetation management, preventing and managing contamination by agricultural pesticides, including spray drift, and other contaminants; providing whole farm and

Performance Measures - Outputs

- Number of media releases, technical publications and group activities promoting best production and management systems.
- Number of policy documents provided.

- Number of new cultivar and varieties released.
- Number of breeding lines at evaluation and demonstration sites.
- Number of media releases, technical publications and group activities promoting new varieties.
- Number of policy documents on plant improvement.

- Number of land and water management plans adopted and farms involved.
- Change in lime use.
- Number of river management plans developed and implemented for ecologically sustainable use of water by agriculture.
- Number of planning instruments sympathetic to agriculture.
- Number of guidelines developed, promoted and

catchment wide solutions; waste management; technical consultancy in waste reuse by agriculture; developing and implementing agricultural land use policies, strategies, guidelines and practices to minimise conflict between agriculture and alternative land uses; participating in Total Catchment Management (TCM), Landcare, and Farming For the Future (FFF); contributing to environmental impact assessments for agriculture and related developments; and providing advice on New South Wales policy issues in this area.

adopted.

- Number of mass media releases, technical publications and group activities used.
- Number of TCM, Landcare and FFF activities and participation rates.
- Number of policy advice documents.

Strategy 4

The Division will develop and promote sound agricultural practices to: reduce risks associated with pesticide use, minimise and manage contaminants in agricultural products and pesticide residues, promote trace back systems; introduce legislation to allow source identification of agricultural products, develop and promote genetically engineered plants; and promote linkages between food safety, and quality assurance and environmental management systems.

- Number of media releases, technical publications and group activities promoting sound agricultural practices to reduce cadmium levels and pesticide residues.
- Trace back systems and food safety.
- Number of new and revised legislation.
- Number of policy advice documents.

Strategy 5

Divisional staff will: undertake risk analyses of pest and disease incursions; develop and promote exotic disease and pest response mechanism(s); develop and promote strategies for managing diseases, pests and contaminants in New South Wales agricultural products for domestic and international markets, manage pest incursions; develop protocols to ensure market access; minimise impacts of diseases and pests on the resource base and provide policy advice; detect and remediate residues and provide advice on New South Wales policy issues; and develop and promote strategies for managing drought, natural disasters and climate variability in agriculture.

- Number of legislative interventions required to ensure trade.
- Varieties released with pest resistance or tolerance.
- Number of policy advice documents.

Strategy 6

Number of media releases, technical publications

The Division will: develop and promote risk management strategies; develop close links between extension and FFF; provide market intelligence and production information; develop and release new varieties and management systems to manage risk; develop and promote policies for preparation and management of natural disasters and drought; provide research, development and extension services in a whole farm risk management context; and provide policy advice to the Executive and New South Wales Government.

- and group activities conducted.
- Number of DSS models developed and adopted.
- Number of policy documents presented.

Strategy 7

The Division will: provide policy options, briefings, strategies and draft replies to the Executive, Minister, Government and other agencies, as required, to reflect the interests of agriculture; contribute to national agricultural policy issues; and plan, manage, review and report on Divisional resource use.

- Number and timeliness of ministerials, briefing papers, policy papers, Standing Committee on Agriculture and Resource Management (SCARM) briefings, external reviews.
- Compilation of annual plans and reports.

Strategy 8

The Division will: manage staff according to acceptable criteria, provide resources (funds, staff, strategic direction and skills) to Divisional staff; recruit, promote and deploy Divisional staff; distribute policy documents on employment conditions to staff; develop and implement competency training for staff; and implement a strategy for information management.

- The number of Performance Management and Development System (PMADS) interviews completed.
- Number of staff attending training sessions.
- Number of staff completing higher degrees.
- Attendance at conferences.

PERFORMANCE MEASUREMENT ON THE WEB (PM WEB): THE DATA COLLECTION, STORAGE AND RETRIEVAL SYSTEM

Against this background the author was charged with designing/scoping a data collection system (PM Web) for management, research, extension and regulatory professionals. When fully operational about 1000 staff in 96 remote locations will provide, store and retrieve data through this system.

The system had underlying criteria:

- It would use the Internet to collect the data. This was to define a methodology for further data collection systems which used the public domain Internet rather than an in-house Intranet to transfer data.
- It had to be user friendly as many operators held low skill levels in computer use.
- The system would enable individuals to store and retrieve data which would be used for staff assessments,
 milestone and final reporting to funding sources, and used as indicators of 'work levels' for funding
 applications.
- Interrogation at a member of hierarchical levels within the organisation was required. At management levels it would be used for:
 - Central agency reporting such as Treasury budget papers, Annual Report to be tabled in Parliament, the CEO's Resource Allocation Agreement with Treasury, and individual reports for the Council on the Cost of Government.
 - 2. Reports to funding bodies:
 - Rural Industry R&D Corporations: Cotton, Grape & Wine, Grains, Horticultural, Woolmark, Land
 & Water Resources, Meat & Livestock Australia, Pig, Rural Industries and Sugar.
 - Other major grant sources such as Australian Centre for International Agricultural Research, Cattle Compensation Fund, Feral Pest Program, Horticultural Stock & Nurseries, and National Heritage Trust.

Development

The development involved:

- 1. Widespread consultation with managers and individuals. A number of iterations have occurred with program managers and program leaders on output and outcome definitions. Program managers and program leaders are able to interrogate and obtain data on all activities and outcomes on the staff that they supervise.
- 2. Individuals have been consulted to ensure all activities that they undertake have been included. See Appendix 1 for activity groups and activities on which output data is included. Consultation occurred at major centres: Head Office (Orange), Dubbo, Wollongbar, Tamworth, Gosford, Menangle, Wagga and Yanco.

After the system was operational, training and consultation occurred at Tamworth, Glen Innes, Wollongbar, Narrabri, Coffs Harbour, Grafton, Cowra, Goulburn, Berry, Menangle, Gosford, Maitland, Wagga, Yanco, Finley, Deniliquin, Dubbo, Cobar, Trangie, Condobolin, Griffith, Dareton, Orange (Head Office) and Bathurst.

- 3. Training for the software development programmer including the use of an external consultant. Training has been in Informix Datablade. HTML, Java Script has also been used in the development.
- 4. The software developed had to be capable of being directly linked to the Human Resources Software (Aurion) to verify individual and organisational structural arrangements for storage and retrieval. (Staff attached to outputs and/or outcomes.) The software was also linked indirectly to the Financial Data Software (SAP R3 System) to attach financial data to outputs and/or outcomes.

Lessons Learned

1. Computer Systems

Software: Informix Datablade was suitable but had limited reporting capability. Later versions than Windows 3.1 are needed for adequate connections.

Hardware: Older PCs were a problem and a minimum quality of pentium is needed for quality, speed and ease of use.

The internet connection was best in the mornings as 'jamming' after 3-3.30pm regularly occurred as school children return home and 'surfed' tying up the telephone in many parts of the state particularly on the north coast of NSW.

The NSW Agriculture network has some problems where large numbers of users at a location are connecting at once causing shut down on the system thus giving entry delays.

2. Skill Levels

Staff vary from computer illiterate to higher skilled. While PM Web requires some skills, a novice is able to enter their own entries. PM Web has a number of screens, drop-down menu or help directories so that a person entering data can simply work through the entry area to store data. Reports are available in a number of formats.

There is a reluctance of staff to give commitment or priority to this type of accountability process as many don't see the direct benefit of the activity. This is also related to other historical attempts to develop Management Information Systems that were of poor quality. It was noted that during the training phase many

staff did not attend sessions offered and then used their non attendance as an excuse to delay data entry.

Persons coming from a wide and varied background have taken some time to develop understanding of the conceptual framework and definitions. They are comfortable in their technical field but management processes leave most professionals cold.

This process has been driven by three people, Chief of a Division, the author (as the developer) and a software programmer. Skills and knowledge in strategic planning, evaluation, accountability, software and hardware capability are essential in the team in a development of this type.

3. Performance Measures

The development of output and outcome performance measures has not been easy.

Multilevel interrogation of outputs has meant a wide range of conceptual level outputs are included in the database. This is to allow individuals, managers and the organisation to obtain relevant output material.

When setting outcome performance measures, two frameworks have been adopted: *Global measures*: an indicator to which NSW Agriculture has been a contributor, eg. the value/volume of wheat grain exported from NSW that meets market specifications. *Causal measures*: an indicator to which NSW Agriculture has been the major contributor, eg. the amount of wheat grain exported that meets market specifications from varieties released through NSW Agriculture's wheat breeding program(s).

Two methods are used for obtaining these measures; use of public domain data, and collection through internal resources such as the outcome data collection system included in PM Web. (See Appendix 2 and 3 for instruments for data collection.)

4. Evolution

At the time of writing, only the Division of Plant Industries is involved in data entry. Commitments have been made by the Division of Animal Industries and other professional units to use PM Web.

The Software Informix Datablade has some limitation in reporting and designing flexibility and eventually we will transfer the system to Java.

The use of multiscreens for transfer to the database will eventually be replaced with a less complicated screen entry.

As the system became live in February 1999 we have been collecting backdated activity information from 1

July 1998. This has created difficulties for staff in terms of multiple entries and time required to complete their obligations.

Reporting capacity is limited in the software so both Excel and Crystal Report are being used in conjunction with Informix Datablade.

The author has been the primary 'Help Desk' facility for the system. Availability and long term help desk support will need to be established.

Summary

NSW Agriculture now has in place a data collection system that will allow it to support both output and outcome measures. Future developments will enhance the ease of collection for professional staff and give an auditable process for the data supplied during reporting activities.

APPENDIX 1

fdactivitygroup	fdactivitytype	fddescription	
Client Group Activities	Competition	Activities such as crop and carcase (Includes judging and/or organising)	
Client Group Activities	Field Day	General field day run at a client destination	
Client Group Activities	Workshop	An activity where the client is involved and learns from contributing to the outputs/outcomes of the session. (Interactive)	
Client Group Activities	Meetings	General meeting run with a client or client group	
Client Group Activities	Farm Walk/Local Bus Tour	The use of and travel to a number of varied sites for demonstrating technology.	
Client Group Activities	Major Field Day	Presenting or assisting with displays at major field days such as ANFD or Agquip	
Client Group Activities	Show Judging	Judging at organised show activities	
Client Group Activities	Peer Contact*	Contacts with other departmental personal	
Client Group Activities	Event Organising	Organising an event using other speakers.	
Client Group Activities	Seminar Client Group	Seminar for client group, either organising, attending, or participating	
Client Group Activities	Poster Presentation	Presented at field days, workshops, seminars etc	
Client Group Activities	Group Support	Provision of Secretarial support, group facilitation and/or expert advice to a formal group	
Client Group Activities	Standing Committee Participation	Participating in sub committees set up under SCARM,SCC and other standing committees	
Client Visits/Advice	Office Visit by client	A client visit to your office	
Client Visits/Advice	Business Visit	A visit by you to a client business eg IAMA or abattoir/packaging house.	
Client Visits/Advice	Farm Visit	A visit by you to a client farm	
Client Visits/Advice	Accountants/other professionals	A visit or phone contact to you or by you to an accountant or other professionals	
Client Visits/Advice	Lending Agency	A visit to you or by you to a lending agent	
Client Visits/Advice	Local Government	A visit to you or by you to a local government agency.	
Client Visits/Advice	Telephone contacts *	A listing of incoming and/or outgoing calls NOT COMPULSORY,	
Client Visits/Advice	Other NSW Government Agencies	a visit by you or to you of another state or federal government agency.	
Client Visits/Advice	Consultant Visit	Contact with private consultants by you or to you	
Client Visits/Advice	Electronic Enquires*	Enquires using Email, Fax etc from or to you	
Client Visits/Advice	Irrigation Designers	Contact with or from irrigation designers	
Client Visits/Advice	Rural Counsellors	Contact with or from rural councillors	
Client Visits/Advice	Court Proceedings	When appearing in court as an officer of the department.	
Client Visits/Advice	Other NSW Agriculture Staff	Meeting with other departmental staff to plan, arrange or exchange information/ideas	
Client Visits/Advice	Audits and Appeals	Reviews, inspections, assessments, reports and provision of advice to RAA (Special Conservation Scheme-Irrigation and Water Use Efficiency Incentive Scheme) Include ICA's	
Client Visits/Advice	Written Advice *	Reports to formally constituted organisations	
Committees and Planning Meetings	Local Formal Group	Local formalised group developing plans.	
Committees and Planning Meetings	Industry Organisations	Working with formalised industry groups	
Committees and Planning Meetings	Other Departments	Working with other state and federal government agencies.	

Committees and Planning Meetings	Ministerial	Activities at the direction of the minister/government
Committees and Planning Meetings	Planning - Program	For the Program
Committees and Planning Meetings	Planning - Sub Program	For the Program Leader
Committees and Planning Meetings	Industry Submissions	Contribution to Industry Activity
Committees and Planning Meetings	Strategic - Industry	Contribution to Whole of Industry Activity
Committees and Planning Meetings	Strategic - Corporate	Contributions to Departmental Strategic Plans
Committees and Planning Meetings	Staff Appraisals	Activity to be recorded by Program Leaders for their Staff
Committees and Planning Meetings	Staff Training Activities	Formalised Training conducted by you for Departmental staff.
Committees and Planning Meetings	BOM Meetings	Participation in BOM activities for division or program
Conferences	Proceedings - Unrefereed paper	Material published by the Conference Committee but not refereed.
Conferences	Abstracts*	Abstracts submitted for inclusion in conferences
Conferences	Poster Presentation	Poster displays at Conferences
Conferences	Presentation at Conference	Personal delivery at Conference of a formal document.
Conferences	Proceedings - Refereed Paper	A paper that has met the refereeing requirements
Conferences	Invited Paper	Any paper or keynote address given at the request of the organising committee.
Conferences	Organising Committee	A member of the organising committee.
Conferences	Keynote Speaker	Invited keynote speaker at a conference
Conferences	Session Chair	Chairing a session at a conference
Conferences	Conference Attendee	Attending a conference as a delegate
Conferences	Teleconferencing	Participation in a teleconference
Departmental Issues	OH & S	Participation in OH & S committees
Departmental Issues	Cannabis Identification	Identification of cannabis for the Police Service
Departmental Issues	Departmental Committees	Participation in Departmental Management Committees such as Centres of Excellence, Station management, By product account, Research Initiatives
Departmental Issues	OIC of Office	Activities associated with being the office OIC
Departmental Issues	Interviewing	Activities associated with staff recruitment
Educational Activities for Clients	Short Courses /Training Workshop	Structured courses (accredited) run by professional staff for clients.
Educational Activities for Clients	Home Study Courses	Structured home study conducted by professional staff.
Educational Activities for Clients	Accreditation of client or client business	Structured accreditations conducted by professional staff.
Emergency Management	Exotic disease - animal	Activities associated with animal exotic disease outbreaks
Emergency Management	Flood	Activities associated with floods
Emergency Management	Fire	Activities associated with fire
Emergency Management	Drought	Activities associated with drought
Emergency Management	Weed emergency	Activities associated with emergency weed outbreaks
Emergency Management	Exotic disease - plant	Activities associated with plant exotic disease control
Emergency Management	Committee Planning	Planning activities with Emergency Management group.
Investigations /RD&E	Demonstrations/Field Trials	Formalised demonstrations on client property that are not subject to statistic analysis.

Investigations /RD&E	Evaluations/Reviews	Formal evaluations and reviews with a set of terms of reference.
Investigations /RD&E	Consultancies to clients	Conducted by departmental staff
Investigations /RD&E	Experiments Glasshouse - Ongoing	Managed during period July 1 to June 30
Investigations /RD&E	Experiments Glasshouse - Commenced	Established during the review period (July1-Oct31, Nov1-Feb28, March1-June30).
Investigations /RD&E	Experiments Field - Ongoing	Managed during the period July 1to June 30
Investigations /RD&E	Experiments Field - Commenced	Established during the review period (July1-Oct31, Nov1-Feb28, March1-June30).
Investigations /RD&E	Experiments Laboratory - Ongoing	Managed during the period July 1 to June 30
Investigations /RD&E	Experiments Laboratory - Commenced	Established during the review period (July1-Oct31, Nov1- Feb28, March1-June30)
Investigations /RD&E	Climatic analysis	Number of analysis completed and reported to clients within and outside the organisation.
Investigations /RD&E	Resource Information Analysis	Number of resource information analysis reported to clients within and outside the organisation.
Investigations /RD&E	Experiment various - Ongoing	Experiments managed between July1 and June 30 that involve 2 or more elements of field, glasshouse or laboratory phases in the one experiment.
Investigations /RD&E	Experiment various - Commenced	Experiments commenced during the review period (July1-Oct31, Nov1- Feb28, March1-June30). that contain 2 or more elements of field, glasshouse or laboratory phases in the experiment.
Investigations /RD&E	Data Massaging	Reworking data from various sources
Investigations /RD&E	Plant Varieties Released	New varieties/cultivars released from Departmental breeding/selection programs
Investigations /RD&E	Biological control agents released	Number of sites/incidents where biological control agents have been released.
Investigations /RD&E	Market Investigation	Investigating new markets
Investigations /RD&E	Machinery Design/analysis	Activities associated with machinery design and analysis.
Investigations /RD&E	Literature Search	Conducting literature search to add to information bank
Investigations /RD&E	Machinery testing/commissioning/evaluation	Activities associated with machinery testing/commissioning/evaluation
Investigations /RD&E	Commercial Projects/Consultancies	Undertaking commercial projects/consultancies
Investigations /RD&E	Benefit/Cost Analysis	Research on benefit/cost analyses
Land Use Planning	EIS, SEP, SEE and REP	Reviews of EIS, SEP, SEE and REP
Land Use Planning	Development Applications	Review of Development Applications
Land Use Planning	Environmental Planning Instruments	Inputs to development of Environmental Planning Instruments(LEP, REP etc)
Land Use Planning	NREM Strategies	Input to development of NREM strategies. (Natural Resource and Environmental Management)
Land Use Planning	RVM Committee	RVM Committee meetings attended.
Land Use Planning	CMC Committee	CMC Committee Meetings Attended
Land Use Planning	Environmental Planning Committees Other	Other environmental planning committees activities
Library Services	Current Awareness Service	Use of or provision of the service
Library Services	Reference Services	Use of or provision of the service
Library Services	Document Supply	Use of or provision of the service
Library Services	Desktop Supply	Use of or provision of the service
Library Services	Training and Technical Support	Use of or provision of the service
Library Services	Library Professional Advice	Use of or provision of the service
Library Services	Information Resources	Use of or provision of the service

Library Services	Library Publications	Library management of departmental publications
Mass Media	Press	Use of printed media
Mass Media	Radio	Use of radio
Mass Media	Television	Use of Television
Mass Media	Video	Creating a video tape
Ministerial/Executive	Ministerial Correspondence	Preparing a ministerial reply
Ministerial/Executive	DG Correspondence	Preparing a DG reply
Ministerial/Executive	Briefing Paper	Preparing a Briefing paper. Add title and date in the description box
Ministerial/Executive	Policy Paper	Preparing a policy paper
Ministerial/Executive	Ministerial Council/Standing Committee briefing	Preparing a SCARM, ARMCANZ, ANZECC, SCC etc briefing or written comment on agenda papers.
Ministerial/Executive	External Reviews	Being a member of a Review or Evaluation team of another organisation
Ministerial/Executive	Annual Report	Contributing to the preparation of the Departmental Annual Report
Ministerial/Executive	Strategic or Corporate Plan	Contributing to the preparation of strategic or corporate plans
Ministerial/Executive	Cabinet Minute	The preparation of a cabinet minute.
Pesticide Management	Pesticide Submissions	Number of submissions to Government Agencies on farm chemicals, new legislation and permits
Plant Laboratory	Samples - analytical	Number of samples analysed during the review period.
Plant Laboratory	Samples - diagnostic	Number of samples diagnosed for identification, pest or disease status during the review period.
Plant Laboratory	Plant Laboratory Reports	Number of reports issued by the analytical or diagnostic service.
Plant Laboratory	Accreditation	Meeting audit requirements
Publications	Media Release	Media Release
Publications	Newsletters	Author of an article. Please add title and published date in the description box.
Publications	Brochures*	A single sheet that promotes an activity or technology. Author of the brochure . Add title of brochure.
Publications	Display Posters	Author of the Display Poster. Add title and date in description box.
Publications	Magazine /Journal Article	Author of the Magazine article . Add the title and publish date in the description box
Publications	Stickers/Folders*	Author of the item. Add title and date in the description box
Publications	Agnote	Author of the Agnote and published with PL approval. Add title and published date in the description box
Publications	Agfact	Author of the Agfact and published by the program. Add title and date of publishing to description box.
Publications	Technical Bulletin	Author of the Technical Bulletin. Add title and publish date in the description box
Publications	Scientific Paper : Refereed	Author of the paper In the description box include full citation details for your publications including the date when the article is actually published.
Publications	Booklet	Booklet for local groups such as local consensus data, or technical advice booklet etc. Add title and published date in description box
Publications	Books and/or Chapters	Author of the material. Add title and published date in the description box
Publications	Patent Applications	Submitter of the application
Publications	Interim/Milestone Reports	Submitted by Author. add title, funding body and date in the description box.
Publications	Final Reports	Submitted by Author. Add tittle, funding body, and date submitted in the description box

Publications	AgToday	Articles in Ag Today(with date)	
Publications	Divisional Newsletters	Articles in Plant Slants, Animal Activities, ARM News or CorpTalk	
Publications	Computer Software	Development and use of computer software that you make available to clients or peers	
Publications	Published on the net	Approved departmental publication published on the net	
Publications	Soil Survey Bulletins	Published by the department. Add title and publish date in the description box	
Publications	Research Updates	Published by the department	
Publications	Farm Budget Handbooks	Published by the author. Add title and published date in the description box	
Publications	Annual Crop/Pesticide/Herbicide Guides	Published by the author. Add title and published date in the description box	
Publications	Thesis Submitted	Thesis for a higher degree and using Departmental Project	
Publications	Information Sheets	Author and title of local information sheets	
Publications	Industry Updates	Publication of industry information such as the grains report etc	
Quality Management of Science	Seminar with peers	Presentation of material to peers	
Quality Management of Science	Review of draft papers	Reviewing drafts of scientific papers, national and international conferences. and chapters for books or journals.	
Quality Management of Science	Review of submitted papers	Reviewing submitted scientific papers, national and international conference papers and book chapters for journals and editors	
Quality Management of Science	Review of funding submissions	Review of projects sent for review by RIRF and other organisations after submission to the funding body.	
Quality Management of Science	Review of proposed projects	Review of proposed projects within NSW Agriculture before submission though to resourcing agencies	
Quality Management of Science	Review of International Projects	Reviews of International projects or programs eg ACAIR, CYMMYT	
Quality Management of Science	Managing post graduands	Managing Master and Ph D candidates	
Quality Management of Science	Monitoring	Monitoring of new departmental staff	
Quality Management of Science	Executive Position	Executive position held on a state or national organisation.	
Quality Management of Science	Thesis Marking	Reviewing and commenting on higher degree thesis	
Quality Management of Science	CRC Management	Managing a program or subprogram in a CRC	
Resource/Fund Seeking	By-Product Account	Application for funds from the By - product account	
Resource/Fund Seeking	Research Initiatives	Application for funding	
Resource/Fund Seeking	Commercial Applications	Seeking of Commercial Funds	
Resource/Fund Seeking	Industry Fund Application - RIRCS	Application seeking funds	
Resource/Fund Seeking	Industry Fund Application - Other than RIRCS	Application seeking funds	
Resource/Fund Seeking	Developing Consultancies	Applying for Consultancies	
Resource/Fund Seeking	Internal Accounts (CR)- Budget (PL/PM to complete)	Submitting Budget	
Resource/Fund Seeking	Internal Accounts (CR) - Reports (PL/PM to complete	Preparing and submitting budget reports	
Resource/Fund Seeking		Submission to SERC for approval by the program	
Resource/Fund Seeking	Preliminary Proposals	Concept development and preliminary proposals for R&D.	
Resource/Fund Seeking	Government Grants and	Specific Government/Treasury Enhancements with limited life.	

	Subsidies (E Item)	
Resource/Fund Seeking	Preliminary Proposal - external	Proposal for external funding submitted to the program
Resource/Funding	Managing/Conducting	On behalf of the Department/ Program
Management	Consultancies	
Resource/Funding	Project Leader	Managing projects
Management		
Resource/Funding	Technical Controller	Managing a sub set of a project
Management		
Structured Discussion	Landcare	Working with Landcare Group
Group		
Structured Discussion	Prograze	Working with Prograze Group
Group		
Structured Discussion	Topcrop	Working with Topcrop Group
Group		
Structured Discussion	Irrigation Based Associations	Working with these associations
Group	D: G	W. 1 A. D.
Structured Discussion	Rice Group	Working with Rice group
Group Structured Discussion	Citaroup	Formal grown of citmus growers
Group	Citgroup	Formal group of citrus growers
Structured Discussion	Viticare	Vinegrowers formal activity
Group	Viticale	vinegrowers formal activity
Structured Discussion	Irrigated CropCheck	Group in southern irrigation areas dealing with irrigated crops
Group	migated cropences	oroup in southern irrigation areas dealing with irrigated crops
Structured Discussion	Pastures Pay	Dryland pastures for southern cropping
Group		
Structured Discussion	Farming Systems Groups	Activities with farming systems group
Group		
Structured Discussion	FFTF Contributions	Sessions conducted at FFTF activities by EXT, Res or Reg Staff
Group		
Structured Discussion	Dairy Groups	Encompasses DIDCO projects and SDP projects
Group	7	
Structured Discussion	Bestprac	Activities associated with Bestprac
Group Training/Higher	Stoff Assessment	Your staff assessment
Duties(Self)	Staff Assessment	Your starr assessment
Training/Higher	Training Sessions Attended	Personal Training
Duties(Self)	Training Sessions Attended	Cromar Training
Training/Higher	Higher	Personal effort
Duties(Self)	Degrees/Diploma/Certificate	orbonar criore
,	obtained	
Training/Higher	PMDS Completed (PLS to	Level of PMDS activity
Duties(Self)	complete)	·
Training/Higher	Study Tour	A study tour undertaken by you
Duties(Self)		
Training/Higher	Professional Officer Training	The professional officer modules conducted by Education &
Duties(Self)		Training Program
Training/Higher	Application for Progression	Application prepared and submitted to PL for processing and
Duties(Self)	W. L. D. C.	support.
Training/Higher	Higher Duties	Acting in a higher duties position. Include date period in

EXHIBIT 6A

OUTCOME DATA COLLECTION: AGRONOMY (EXTENSION, RESEARCH PROFESSIONALS)

NAME

POS	SITION		••
LOC	CATION		
MOI	NTH OF RETURN		
HON	ME PROGRAM		
	W MANY PRODUCER TRICT/AREA OF RES	S/FARMERS IN YOUR PONSIBILITY	
ARE	EA OF YOUR DISTRIC	CT/AREA OF RESPONSIBILITY (ha)	
QA1	. Within your agronor have:	mist district what percentage of the area do you e	estimate to
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Winter cereal crop stub Summer crop stubble i		
r	etention) for disease o		
	Reduced tillage (less th	nan 4 operations)	
	Direct drilling		
	Traditional/Convention	al	
	Controlled traffic		
	Precision Farming		
F	Farm Forestry		

QA2. Within your agronomy district, please estimate the percentage of producers who or have:

	Percentage (%)
Sown approved improved pasture varieties	
Grazed pastures using objective assessment eg. skills	
developed from Prograze	

QA3. Within your agronomy district, estimate the percentage of producers who have:

			Percentage of Area (%)
Agronomy	Fertilised crops using:	soil analysis	
		tissue analysis	

QA4. Within your agronomy district, please estimate the percentage of area sowings/plantings (% of each crop or pasture).

		Percentage of Area (%)
 approved varieties of 	Wheat	
	Oats	
	Barley	
	Canola	
	Faba beans	
	Soybean	
	Chick peas	
	Field peas	
	Lupins	
	Rice	
	Perennial pasture grasses	
	Lucerne	
	Other perennial legumes	
	Annual pasture grasses	
	Annual pasture legumes	

QA5. In your agronomy district please estimate the percentage area:

		Percentage (%)
Using IPDM on	Cotton	
	Pulses	
	Oilseeds	

QA6. Number of growers in 1998 using:

	Number	Estimated Potential	%
Cotton BMP			
Ricecheck			
Prograze			
Topcrop			
Farmbiz			
Landcare			
Rangelands Bestprac			
Canocheck			

QA8. Number of producers using

	Number
Wheatman	
ManRice	
Grazfeed	
Rainman	
Proplus	

QA9.

	Tonnes
Tonnes of Lime used in District/Area (Crops)	
Tonnes of Lime used in District/Area (Pastures)	
	% Area
Estimated pasture area topdressed with lime based on soil analysis	
Soil allalysis	

QA10 Best Management Practices

10.1 Pest & Diseases: The number of farms using:

	Potential	Number	%
 On farm quality management system 			

10.2 Water

	Number
Irrigation & Drainage Management Plans developed under WRSAP	
Irrigation farmers that have undertaken irrigation management training	
Farmers using soil moisture monitoring for irrigation management	

10.3 Soil

		Number
•	adopting Soilpak technology transfer through:	

* Cotton Soilpak	
* Irrigated Soilpak	
* Northern dryland farming Soilpak	
* Southern dryland farming Soilpak	
* Red soil Soilpak	

10.4 Crops

	Number
Cotton BMP - growers adopting	
% pulses sown by 1 May	

10.5 Nutrients

			Number
ĺ	•	Dairy farmers using waste management systems of effluent	
l		management	

10.6 Farm Management

		Number
ľ	Whole farm management budgeting	

Q11A.

Within your rangeland district estimate the % of graziers who:

•	have developed property management plans	
•	are actively controlling total grazing pressure	
•	are adopting improved rangeland management practices (eg. management burning, paddock spelling)	

EXHIBIT 6M

OUTCOME DATA COLLECTION: AGRONOMY PROGRAMS (MANAGEMENT PROFESSIONALS, LEADERS & OTHER MANAGERS)

NAME				
POSITION				
LOCATION				
MONTH OF RETURN				
HOME PROGRAM				
ANSWERS TO QUESTIONS APPROPRIATE TO YOUR PROGRAM.				
QM1.				
THE USE OF "HARD" PE ENVIRONMENT	STICIDES THAT ARE REGULARLY DETECTED IN THE			
	% reduction/ha compared to previous 5 years			
Endosulphan use in cotton	1			
Atrazine				

QM2.

IMPACT OF BIOLOGICAL AGENTS AND MODIFIED PLANTS

	% Area sown	% Reduction in sprays	% growers using
BT Cotton			

QM3.

COST OF BREEDING AND SELECTION - PERCENTAGE USER PAYS

Program	Cost to NSWA	Cost Contribution RIRC's	Percentage % contribution by RIRCs
Wheat North			
North			
South			
Durum			
Oats			
Barley			
Canola			
Lupins			
Rice			
Lucerne			
White Clover			
Tall Fescue			
Phalaris			
Perennial Ryegrass			
Sub Clover			
Annual Medics			
Annual legumes			
Native grasses			

QM4.

IMPACT ON FARM PROFITABILITY/INCOME

Species	Area Sown	Increased yield from Trials	Estimated Value/Unit	Value
Acid Tolerant Barley				
Durum				
Wheat				
Oats				
Barley				
Sorghum				
Cotton				
Faber Bean				
Soybean				
Chickpea				
Lupin				
Rice				
Lucerne				
White Clover				
Tetraploid ryegrass				

QM5.

CHANGE IN IRRIGATION EFFICIENCY

Product	Wt produced/ha	ml/ha Irrigation water	Wt/ml	Value	Value/ml
Rice					
Prime lamb					
Beef					
Lucerne					
Milk					
Cotton					
Soybean					

QM6.

CHANGE IN IRRIGATED LAND USE

Estimated change in use in irrigation system/Area Region	% Irrigated land used for pastures	% Irrigated land used for Broadacre Crop or medium return crop, Citrus, Rice	% Irrigated land used for Intensive Crop or Production eg. Vines, Cotton, Vegetables, Dairy
Murray			
Murrumbidgee			
Lachlan			
Macquarie			
Namoi			
Gwyder	_		
Hawkesbury			
Hunter			
North Coast			
South Coast			

QM7.

MARKET ACCESS

Pest/Product	Incidents (NO)	Product Rejected (No)	Gained Access (No of Countries)	\$ of New Access
PCN				
Wheat				
Field Peas				

QM8.

ADOPTING RISK MANAGEMENT

Use Levels (No. of hits)

Seasonal Page	Seasonal Comment (Bureau of Met)

QM9.

STAFF DATA

Recruitment	No. recruited	No. of Appeals	Dismissals/ Resignations	Retirements

QM10.

POLICY ADVICE

Estimate of policy advice that reflects rural community requirements:

	%
Cereal Products	
Fibres, Oils & Specialty	
Products	
Agricultural Resource	
Management	
Pastures & Rangelands	