The National Climate Variability R&D Program
is jointly supported by the following organisations

Land & Water Resources Research & Development Corporation

SHAPING THE FUTURE
RIRDC
RURAL INDUSTRIES RESEARCH & DEVELOPMENT CORPORATION

DAIRY RESEARCH AND DEVELOPMENT CORPORATION

FOREST & WOOD PRODUCTS
RESEARCH & DEVELOPMENT CORPORATION

IWS
INTERNATIONAL WOOL SECRETARIAT
AUSTRALIA BRANCH

GRDC
Grains Research & Development Corporation

DPIE
COMMONWEALTH DEPARTMENT OF PRIMARY INDUSTRIES AND ENERGY

NFF
NATIONAL FARMERS' FEDERATION
AUSTRALIA

Sugar Research and Development Corporation

Management strategy

National Climate Variability R&D Program

Published by:
Land and Water Resources Research & Development Corporation
GPO Box 2182
Canberra ACT 2601
Telephone: (02) 6257 3379
Facsimile: (02) 6257 3420
Email: public@lwrrdc.gov.au
Home Page: http://www.lwrrdc.gov.au

Publication Data:
'National Climate Variability R&D Program: Management Strategy' by LWRRDC

ISBN 0 642 26713 8

Design: Mastercraft, Canberra

Printing: The Communication Station, Canberra

May 1998

NATIONAL CLIMATE VARIABILITY R&D PROGRAM

Management Strategy

The National Climate Variability R&D Program aims to work with the Australian agricultural sector to develop and implement profitable and sustainable management strategies which prepare the sector to respond to the major opportunities and risks arising from climate variability.

Background

Introduction

In September 1997 the Commonwealth Government launched an integrated rural policy package, *Agriculture—Advancing Australia,* which included an allocation of $3.5 million for climate research and development. This represents an ongoing commitment to the intent of the National Drought Policy, first developed in 1992, which has the aim of better preparing the agricultural sector to manage the vagaries of Australia's climate through implementing strategies based on self-reliance.

Since 1992, there have been two phases of the National Climate Variability R&D Program (NCVP). The Commonwealth's latest investment has enabled a third phase of the program to be established. This management strategy covers the government's requirements for climate-related research, development and communication investment in the agricultural sector within the third phase.

Program design

This strategy also reflects the aspirations of the wider interests involved in the agricultural sector which includes not only farmers but also other agencies managing land and water resources. Indeed, the process leading to the preparation of this plan included the most significant gathering of stakeholders ever convened to develop a strategic approach to supporting climate research directed towards the interests of the agricultural sector and its natural resource base.

The design process recognised that R&D on climate variability for the agricultural sector is part of a larger and ongoing overall national R&D effort in climate research generally, including for example climate change research. The Bureau of Meteorology, CSIRO, Bureau of Resource Sciences and some State Departments (particularly Queensland) have established programs within their charters. The role of the NCVP is to provide national leadership on climate variability in the agricultural sector by providing research funding. This role includes building partnerships and strengthening collaborative approaches with public and private sector agencies. Desired approaches include ensuring that the agriculture sector nationally can benefit through targeted projects which can build for example, on either more broadly-based generic R&D, or R&D specific to industries or regions.

A further basis for the preparation of this strategy has been an independent review of the climate variability R&D program, which was undertaken during 1997 by external consultants. The review strongly endorsed the need for further R&D in this area.

Program context

Australia is a country *of droughts and flooding rains*. This represents an enormous challenge to Australian agriculture, especially as it seeks to foster industries which are profitable, internationally competitive and ecologically sustainable.

In an environment where 80% of farm profit can be made in 30% of years, and where inflexible management can lead to land degradation, hardship and even poverty, climate variability presents both risk and opportunity. Variability in on-farm production is also a major source of instability for the agribusiness sector generally through impacts on input suppliers, marketing and finance, and processors.

R&D aimed at improving climate prediction, providing access to climate information, developing tools for tactical decision making, and adapting agricultural practices to Australia's unique circumstances, will significantly enhance the agriculture sector's ability to manage risk and take early advantage of opportunities as they arise.

The program also recognises that the impacts of climate variability are social, economic and physical by nature, and the portfolio of R&D required must address social and policy considerations as well as specific climate, farming system and agribusiness issues.

Stakeholders

The program recognises that there are many different stakeholders with an interest in the program's products and outcomes. These include the program's funders, the Commonwealth Government and R&D corporations, as well as potential partners in agribusiness where there is scope to better manage business risk associated with climate variability.

The stakeholders include program clients with farmers as a major focus, either directly or through farmer groups and farm organisations. Other stakeholders include managers of natural resources particularly land and water; education, training and extension organisations, farm advisers and consultants; rural policy agencies; environment groups; the media and a wide range of other agribusiness enterprises.

Since researchers themselves need access to climate R&D results, as well as being R&D providers, they are an important client of the program.

Purpose of management strategy

This Management Strategy:

- describes in general terms how the program will achieve its goal
- provides detailed information about the program's activities, management structure and operation as the basis for interaction with stakeholders and clients
- provides the means for assessing the program's progress towards achieving its goals and objectives.

Goal

To work with the Australian agricultural sector to develop and implement profitable and sustainable management strategies which prepare it to respond to the major opportunities and risks arising from climate variability.

Objectives and Strategies

Objective 1 *(Strategic R&D—climate prediction and impacts)*

To improve climate prediction and the monitoring of the impacts of climate variability through increased understanding of climate variability

Strategies

- further develop statistical forecasting techniques of rainfall, temperature and other indices for application in the agricultural sector
- continue to foster elements of global climate model development and long-lead time climate prediction to enhance applicability in the agricultural sector
- develop effective ways to communicate improvements in forecast skill to users
- explore and monitor social, economic and environmental impacts of climate variability
- facilitate more effective use of remotely sensed data to monitor climate variability impacts on land and water resources
- improve understanding of changes in climate variability over decade time scales

Objective 2 *(Adaptive R&D focus)*

To develop new farming systems better adapted to climate variability

Strategies

- investigate industry specific management options which are more profitable and sustainable and provide a greater buffer against climate variability
- support innovative industry R&D to develop profitable farming systems appropriate to Australia's unique climatic and ecological systems, and encourage integrated institutional support for implementing change

Objective 3 *(Marketing and market research focus)*

To develop ways to meet managers' needs for climate information based on improved knowledge of their needs

Strategies

- develop understanding of farmers' decision making environments and culture and develop communication systems to reflect these

- identify managers' needs for climate information tailored to regions and industries
- develop approaches to increase understanding and confidence in using seasonal climate forecasts
- improve access to climate forecasting and other climate-related information
- develop information to meet requirements of policy makers
- investigate priorities and methods for improved spatial and temporal resolution of climate data

Objective 4 *(Extension and value of applications focus)*

To provide managers with information requirements on the value of seasonal climate forecasts in supporting decisions for specific applications

Strategies

- develop and promote decision support tools to assist producers make improved tactical decisions which reduce risk and capitalise upon opportunities arising from climate variability
- integrate extension and advisory networks, farmers and researchers for planning, feedback and training in climate variability management
- develop specific information delivery and extension systems to meet user needs
- coordinate research to identify where climate forecasts improve productivity and environmental, financial and social benefits
- build on existing bio-economic and water resource models to show value of forecasts in changing decisions
- examine and promote case studies based on successful management of climate variability
- jointly support demonstrations of successful management practices

Program Management

Principles

In delivering on the objectives of the program, the following general principles will be followed.

National Role The program's activities will recognise a national leadership charter for climate variability research in the rural sector, and fund activities where a national focus can add value. This may include accelerating existing research or broadening the focus, but not 'crowding-out' activities which could be expected to be undertaken by other agencies.

Consultation and Communication The range of disciplines involved in R&D and the nature of climate information will generally require a high level of consultation and feedback recognising the end-to-end nature of the information flows in the climate research and applications system. Collaboration between climate and agriculture researchers, agencies involved in implementation, and users will be essential to achieve the goal of the program (see also 'Communication' on page 12).

Applied and Strategic Research The program will give priority to activities which plan to deliver benefits in the short term. However, a balance will be maintained by funding some longer term more strategic research which is essential to underpin applied research and foster innovation.

Program Scope Where feasible, the program will concentrate on R&D (including R&D on training, communication processes etc.) and make maximum use of existing public and private sector networks for training and extension. The program has a national scope across industries and regions and includes irrigated and dryland farming. The scope also includes R&D on production and sustainability issues.

Private Sector (including agribusiness) Opportunities to involve the private sector will be developed at the program level, as potential stakeholders, and at project level, as partners in development and delivery of research (see also 'Cooperation with Other Programs' on page 13).

Project Design All projects will have in-built processes for evaluation of outputs and outcomes, and for the ongoing communication with users which is required to ensure the success of the project.

R&D Training Component Projects will be encouraged to include a training component where this is an efficient way to meet the objectives, and where a gap has been identified in research capacity.

Economic Efficiency Activities will be funded which contribute to the goal of the program and achieve the greatest potential return (economic, environmental, social) to the nation.

Contestability All program funding will be subjected to open, competitive bidding processes other than where there are no recognised or feasible alternative providers, whereupon the process of commissioning will be based upon rigorous consultation with program stakeholders and clients.

Coordination

The program is managed by LWRRDC on behalf of a consortium of R&D investors, and is one of fourteen programs detailed in the LWRRDC Research and Development Plan 1996–2001. All activities supported under the program are subjected to LWRRDC's project and program management processes within a Total Quality Management framework for which LWRRDC has achieved registered status under ISO 9002.

Management of the program is overseen by a Management Committee comprising representatives of the R&D investors and the LWRRDC Program Manager responsible for LWRRDC's Sustainable Land Management Systems portfolio of programs. A National Coordinator is responsible for the day to day communication and coordination activities.

The program will make use of expert referees and technical sub-committees as required for specific projects or issues. Major projects will have steering committees where this is the most effective method to involve stakeholders and users in ongoing development and monitoring.

Evaluation and Monitoring

Program and project management processes are in place to ensure that monitoring and evaluation processes are rigorously carried out for the duration of the program. These processes include:

Program Monitoring and Evaluation

The Program Management Committee will oversee progress made in the program. A mid-term review of the program will be undertaken in early 1999, and an *ex-post* review will be undertaken in late 2000. The evaluations will be based upon assessing the extent to which the program's goal and objectives have been met. Program milestones have been established against which performance will be assessed and Commonwealth Government payments to the program will be made (see below).

Project Monitoring and Evaluation

All projects supported under the program will include specific project milestones and achievement criteria against which progress will be measured. Final assessment of projects will be on the basis of project objectives having been achieved. Some projects will be selected at random to be evaluated as part of LWRRDC's life-of-project evaluation process whereby the projects are scrutinised in-depth using benefit–cost analyses at *ex-ante*, in-progress and *ex-post* stages.

Milestones

June 1998

- Program Management Strategy agreed to by major stakeholders
- Contractual agreements among funding partners executed
- Projects contracted against all program objectives
- Detailed Communication Strategy developed and agreed to by major stakeholders

June 1999

- Technical and communication workshops convened to assess program progress
- Mid-term review of program commenced
- Major extension activities, including demonstrations, established
- Improved access to, and use of, climate information demonstrated

June 2000

- *Ex-post* program review commenced
- Improved climate forecasting systems demonstrated
- Improved access to, and use of, climate information further demonstrated
- Tactical tools for improved industry response to climate variability developed
- Improved farming systems based on Australian climate incorporated into industry best management practices
- Communication strategy objectives accomplished.

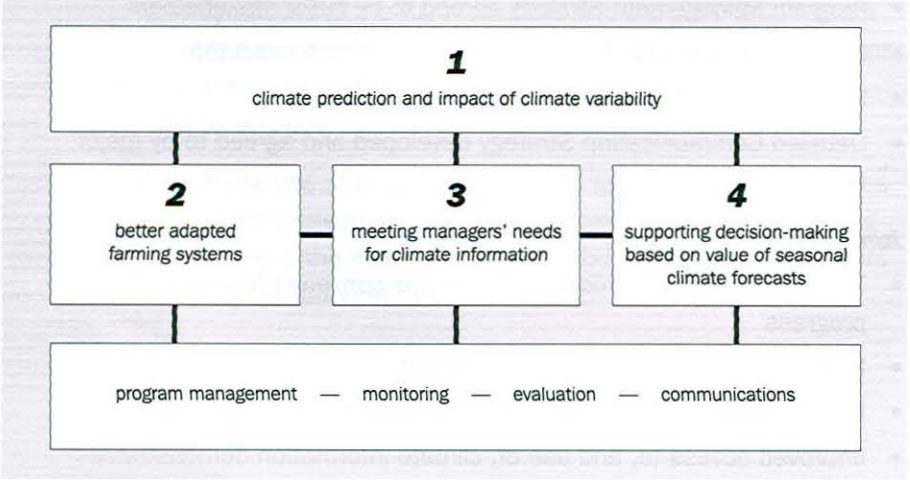
Communication

Through a Communication Plan, the program will ensure that the tools and processes generated by its activities are made relevant and exposed beyond the immediate environments in which they are produced.

The following communication principles have been adopted by the program:

- the program will facilitate and encourage participatory research and development activities between researchers and community groups
- the program will emphasise research and development activities which have an integral adoption strategy embedded into their methodologies
- the program will encourage activities that examine the cultural, political, social and economic contexts of the issues.

Program structure



Cooperation With Other Programs

As a key part of the program's national leadership role in the agricultural sector, collaborative approaches will be maintained and developed with research providers and funding bodies. Agribusiness involvement will also be targeted.

Research Providers In the agricultural sector, climate variability is a relatively recent focus for research. There are only a few major research providers with some activities relevant to the NCVP within their larger climate R&D programs. These include CSIRO, Bureau of Meteorology, Bureau of Resource Sciences, and QCCA (Queensland Centre for Climate Applications, combining QDPI and QDNR activities). The program also has an important role underpinning more recent initiatives on R&D and training by NSW Agriculture and Western Australia Agriculture and exploring opportunities for other agencies to more explicitly focus on climate variability research. These include Cooperative Research Centres and the Murray–Darling Basin Commission.

R&D Corporations Ongoing links with the R&D corporations will be essential for the program to maintain a focus on products of benefit to specific rural industries and for equitable funding of generic research. Of the 13 rural R&D corporations, seven have contributed $725,000 over the three years to 1997/98 to a fund for generic research. Five of these seven corporations, plus two others, have been involved in partnership funding of projects relevant to their specific industry charter.

Private Sector including Agribusiness The program will encourage and develop partnerships with the private sector, particularly opportunities in information delivery generally and in managing risk related to climate variability in the agribusiness sector. In addition to partnerships at the project level, there will be opportunities for involvement as stakeholders through investing in the overall program. This will give investors an input to the direction of the program and early exposure to its products.

Training and Extension The program will build on existing networks and activities which aim at enhanced management capacity of farm businesses. In particular *FarmBis* and Property Management Planning programs are ideal general vehicles for presenting products of climate variability research in a risk management context. In addition, there are a wide range of avenues available in particular industries and regions.

National and International Initiatives The NCVP will continue to maintain an awareness of major national and international initiatives in seasonal forecasting and applications. The overall Australian effort in applying climate forecasting is widely regarded as being at the forefront. The World Meteorological Organisation has a project on Climate Information and Prediction Services and an International Research Institute has been established in the United States to develop climate forecasting. A feasibility study on the establishment in Queensland of an Australian Institute for Climate Applications is in progress. The Australian Centre for International Agricultural Research (ACIAR) has also been consulted on potential international collaboration within the scope of the program. Opportunities will be taken for collaborative approaches where appropriate.

Further Information

Dr Barry White
NCVP Coordinator
PO Box 916
Indooroopilly
Brisbane QLD 4068
Phone/fax: (07) 3371 5878
Email: bjwhite@b022.aone.net.au