FINAL REPORT

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

SFS00013

Co-ordination of GRDC's High Rainfall Zone Investment

PROJECT DETAILS

PROJECT CODE:	SFS00013
PROJECT TITLE:	CO-ORDINATION OF GRDC'S HIGH RAINFALL ZONE INVESTMENT
START DATE:	01.04.2004
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Summary

The overall objectives of this project were to stimulate national coordination of grains research and development (R&D) in the High Rainfall Zones (HRZ). Greater coordination was sought within and between regions, with a specific desire to strengthen collaboration between researchers and growers in the HRZ of south eastern (SE) Australia and their counterparts in the HRZ of south western (SW) Australia. Prof. T. G. Reeves, an experienced scientist, was appointed as national coordinator. A number of activities were undertaken to enhance coordination and collaboration. These included two national coordination workshops, visits by the coordinator to key sites, specialist reports, project development and stimulation of grower visits.

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Conclusions

There was a major need for greater national coordination of GRDC's investments in the HRZ, as there was only limited awareness among key groups as to the activities of others. This resulted in lost opportunities for refinement and evaluation of technologies developed in one part of the HRZ, in other regions.

There was strong consensus on the key national R&D priorities for the HRZ, although the emphasis on these sometimes changed from region to region.

There were areas for effective collaboration between researchers in eastern Australia and Western Australia (WA) on such issues as disease management and canopy management, modelling, and farming systems. However, in varietal development priorities differed between these regions. For example, WA has generally been better served in terms of varietal development than eastern Australia, particularly for cereals. WA workshop participants also clearly stated the continuing importance of export milling quality for HRZ wheats in WA, whereas yield and disease resistance were the highest priorities for HRZ wheat growers in Victoria (VIC). Dual purpose wheats were very important in the HRZ of New South Wales (NSW).

Statistics compiled for the HRZ demonstrated the ever increasing contribution of the HRZ to national production, but also showed that there is a major gap between potential yields and those actually obtained by growers. R&D to address this 'yield gap' was identified. Climate change is likely to increase the importance of the HRZ for grain production.

National collaboration and coordination were greatly enhanced through the participation of both researchers and growers in the coordination activities. Grower participation in the national workshops was very effective in helping to 'reality test' ideas and priorities. Greater participation of WA growers should be encouraged in the next phase.

Better mechanisms for the presentation of HRZ priorities to key decision-makers should be explored to ensure appropriate alignment between priorities and future investments by GRDC and others.

Recommendations

It is strongly recommended that national coordination of R&D in the HRZ continues for at least a further three years. A national workshop should be a key part of this coordination.

The agreed national R&D priorities should be reviewed and strategies put in place to implement these as resources become available.

The opportunities for a national and international approach to modelling for the HRZ, including environmental modelling, should be pursued e.g. MIDAS, Yield Prophet®, LUCI).

The HRZ database compiled by Neil Clark and Associates should be updated annually with a view to longer term planning for investment and infrastructure in the HRZ based on trends.

Grower participation in the coordination activities should be further enhanced with particular emphasis on participation by WA growers.

A better mechanism be implemented to increase alignment between priority setting and future investment.

Varietal development for the HRZ be given greater priority, particularly in eastern Australia.

Outcomes

The expected outcome was a more coordinated and better prioritised portfolio of R&D investments by GRDC, and others, in the HRZ. The benefits achieved included the development of agreed R&D priorities for the HRZ, published in the proceedings of the first national workshop (Melbourne); the development of a national R&D proposal, led by Penny Riffkin; information and knowledge sharing between both researchers and growers, specifically highlighted in the proceedings of the second national workshop (Adelaide); enhanced communication between HRZ groups, including exchange visits by grower groups in both eastern and Western Australia; enhanced varietal development and evaluation for the HRZ through engagement with breeding companies; and the establishment of a HRZ database including statistics on areas, yields, production, etc., to facilitate future planning and priority setting. As a result of these activities, there has been growing awareness of the increased potential importance of the HRZ under future climate change scenarios.

Achievements/Benefits

The core aspects of this project were successfully achieved. Enhanced coordination of R&D in the HRZ has been demonstrated, resulting in greater collaboration between researchers. In addition, there has been greater exchange between HRZ grower groups as a result of the national workshops and the relationships built there.

A clear set of nationally agreed research, development and extension (R,D&E) priorities for the HRZ were published and communicated to all key stakeholders. These were followed up with recommendations as to how best to implement the highest priorities. In addition, there was excellent knowledge sharing between key groups resulting in a much greater awareness of ongoing work in the HRZ nationwide.

Visits to key sites and the production of reports also helped to bring a sense of 'community' to the HRZ R&D network. This was reflected in communications from a range of stakeholders.

Other research

There are a number of other R&D priorities for the HRZ and these include:

The role of biofuel production based on biomass production systems in the HRZ.

Carbon sequestration and offsetting.

Reducing losses of nutrients, pesticides and water from HRZ cropping systems.
Exploring opportunities for relay cropping.

Investigating the feed value of high quality cereal grains for use in the adjoining dairy industries in southern VIC.

Overcoming subsoil constraints to grain yields via green manuring and deep injection of organic matter.

Investigating the factors contributing to varying yields across uniform soil types and conditions.

Creating a longitudinal time series of key HRZ economic parameters (gross margins, input costs, area sown and varieties).

Establishing a long term investigation of the benefits of biological farming techniques in the HRZ.

Investigating the key drivers for the initial and ongoing uptake of cropping within the HRZ.