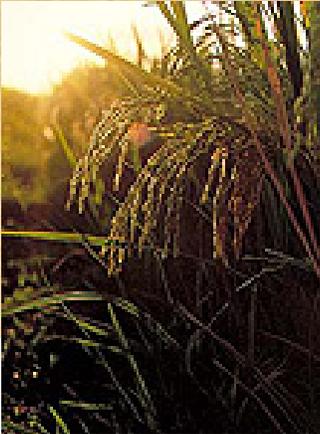


Australian Rice Industry  
Partnership Project:



Taking Stock and R&D Planning:  
A Workshop Discussion Paper

Jerilderie, 16 March 2006

Prepared by

RESEARCH WITHOUT BOUNDS



Kiri-ganai research

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# Australian Rice Industry Partnership Project: Taking Stock and R&D Planning

## ABOUT KIRI-GANAI RESEARCH

Kiri-ganai Research Pty Ltd is a Canberra based consultancy company that designs, implements, manages and coordinates complex programs involving multiple organisations, disciplines and stakeholder interests. We also undertake research and consultancy studies concerned with natural resource management and competitive, profitable and sustainable agriculture. Our strength is in turning knowledge gained from markets, business operations, science and research, as well as from the policy positions developed by governments, industry organisations, producers and marketers, into ideas, options, strategies and business plans for resilient and self-reliant industries.

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## Project team

Ken Moore, Richard Price and Brian Ramsay are the project team for the Taking Stock and Setting Directions project. They comprise an alliance of three companies led by Kiri-ganai Research. The other companies are Boorara Management and the Concept Consulting Group.

The team members bring together skills and experience in industry situational analysis and strategy setting; business planning; industry structural change aligned to world markets, industry adoption programs and change management; and research, project management and report writing. The team includes sociological expertise as well as economic and business analysis skills, thus recognising the need to address social and community issues in developing and implementing industry strategies.

## Disclaimer

Care has been taken to ensure that the information contained in this report is reliable and that the conclusions and recommendations reflect considerable professional judgment. Kiri-ganai Research Pty Ltd, however, does not guarantee that the report is without flaw or is wholly appropriate for all purposes and, therefore, disclaims all liability for any loss or other consequence which may arise from reliance on any information contained herein.

## **PURPOSE OF THIS DISCUSSION PAPER**

- ▶ Provides background information and discussion points for the Taking Stock and R&D Planning workshop on Thursday 16 March in Jerilderie.
- ▶ Provides preliminary Taking Stock issues based on initial consultations with a wide variety of industry participants and review of industry information and reports.
- ▶ The Jerilderie workshop will further explore the industry's current situation and performance, and identify opportunities and challenges. This will help to fill gaps in information, correct errors and substantiate statements or opinions made in this document.
- ▶ A complete Taking Stock report will be prepared following the Workshop. This will be presented to the industry and then work will commence on Setting Directions for the industry. The R&D plan will be completed at the end of April.
- ▶ There will be further consultations with the industry during the Setting Directions stage to develop practical strategies and actions to improve the industry's performance, sustainability and capacity to adapt to change.
- ▶ A final Taking Stock and Setting Directions report will be presented to the industry at the end of May 2006. Briefings will take place in June to reach agreement on future directions for both the rice industry and Government.

## **ACKNOWLEDGEMENTS**

The following contributions are gratefully acknowledged:

- Michael Clarke of AgEconsPlus who is compiling and analysing data from numerous sources on the industry. This will be vital for preparing a complete Taking Stock report on the industry. Michael is also leading the project on developing a strategic plan for rice industry R&D investments.
- The many ricegrowers and other industry stakeholders who gave their valuable time, insights and knowledge during meetings with the consultants. We were impressed by the professionalism of all the people we met and with their passion and commitment to achieving a highly successful and sustainable Australian rice industry.

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# EXECUTIVE SUMMARY

## Background

- In February 2006, the Ricegrowers' Association of Australia Incorporated and the Australian Government Department of Agriculture, Fisheries and Forestry initiated a Taking Stock and Setting Directions Project under the Government's Industry Partnerships Programme.
- The key features of the project include:
  - The aim is to undertake an analysis of the rice industry's current performance and situation, identify likely challenges and opportunities, and to set strategies for its future profitability and sustainability.
  - The imperative of the project is that what is produced is owned by industry participants who are able and motivated to implement the strategies that are developed.
  - Independent consultants have been engaged to undertake the analysis and to work closely with the industry in both taking stock of its situation and in developing practical strategies and actions for the future.
  - The project will be completed by the end of June 2006.
- The preparation of a new five-year Research & Development Plan managed through the Rural Industries Research and Development Corporation (RIRDC) will also be part of the project. The R&D Plan is to be submitted to RIRDC by the end of April 2006.
- The initial part of the project is the Taking Stock study that has commenced with the consultants collecting and analysing industry data and meeting with participants across the supply chain. A key event in this phase is a Taking Stock Workshop to be held on 16 March in Jerilderie.
- The purpose of this first report is to stimulate industry discussion at the workshop and to draw on the experience and knowledge of industry stakeholders. The Taking Stock report will then be reworked and developed into a comprehensive, accurate and agreed account of the industry's situation, performance and directions.

## Initial Findings

- An initial examination of the industry clearly shows that it has developed a world class food business during the course of the twentieth century from growing rice in irrigation areas in the Murray Valley, Murrumbidgee Valley and Coleambally area of south-western New South Wales and in northern Victoria.
- The Australian industry, while small by world scales, has become a successful and competitive supplier of quality rice products into world markets. It has achieved this through the vertically integrated marketing arrangements owned by ricegrowers that were developed over the second half of last century.
- In the space of six years, since the turn of the century, there has been unprecedented change in the operating environment of the rice industry. Rice production reached a record level of 1.7 million tonnes with the 2001 crop, followed by severe drought that reduced the 2003 crop to 390,000 tonnes, and then rebounding with the current crop which is expected to be 980,000 tonnes.

- Associated with this production variability has been the need for the grower cooperative, SunRice, to trade in international rice to service its markets and convert to a grower-owned company as a means of securing capital for future growth and profitability. At the same time, the New South Wales Government deregulated its domestic market by introducing an 'authorised buyer' scheme that will permit other companies to buy NSW rice under licence from the Rice Marketing Board. This was a result of commitments under the National Competition Policy. No change is to be made to export marketing arrangements and the public benefits of a single desk have been acknowledged by the National Competition Council.
- International trends in rice production and consumption point to a bright future for the industry if sufficient water is available to ricegrowers to meet required production levels. With consumption exceeding production in recent years, world stocks are expected to decline for the fifth successive year and to be at their lowest level since 1982/83.
- Very high levels of protection in all rice producing countries other than Australia present major barriers to the growth of trade. However, even modest liberalisation brings substantial benefits especially to Australia as a highly competitive supplier.
- The rice industry has a record of continuous improvement in product quality, productivity, land and water use, and environmental management. Ricegrowing is Australia's most regulated agricultural industry in terms of land and water use, and environmental impacts. Much of this regulation has been industry-initiated.
- Despite being a success story, there is serious concern in the industry about the perceived low standing of Australian ricegrowing amongst urban people. However, its achievements provide a strong base for promotion of the industry in the awareness and understanding of Australians, and as an asset to Australia in supplying quality food to the world.
- In a world where 'change is the only constant', it is timely for the industry to analyse and reflect on its situation and performance, to evaluate options that will add value to its future, and to act on its key challenges and opportunities.

## **Issues for Discussion**

- This paper addresses six Taking Stock issues for the industry in this time of change as a stimulant to workshop discussion:
  1. The profile and standing of the rice industry in world markets and the Australian community.
  2. The constant pressure for on-farm innovation to increase productivity and profitability.
  3. Market and community demands for best practice water and environmental management.
  4. Managing marketing change and risk to remain competitive and grow in global markets.
  5. Maintaining investment in the industry's capital infrastructure, leadership and skills.
  6. The importance of relationship management in supply chains and with service sectors.

# Rice Industry SWOT

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Highly skilled growers that adopt new technologies, varieties and growing practices.</li> <li>• Geographic concentration of the industry in south west NSW and north west Victoria.</li> <li>• Good climate for growing temperate varieties of rice.</li> <li>• Low disease and pest problems compared with other world ricegrowing areas.</li> <li>• Low chemical use after early stages of crop.</li> <li>• Leader in environmental management with demonstrable success.</li> <li>• Vertically integrated marketing arrangements backed by an export single desk.</li> <li>• Grower owned company that is a successful marketer in both the domestic and export markets.</li> <li>• Grower owned capital infrastructure.</li> <li>• Successful R&amp;D Program that has achieved major innovations in rice varieties for specific markets, yield increases, disease and pest management and water use efficiency.</li> <li>• Highly committed leaders that are passionate about the future of the industry.</li> <li>• Strong industry organisations.</li> <li>• Unified and loyal growers that have trust in their industry and marketing organisations.</li> </ul>	<ul style="list-style-type: none"> <li>• High susceptibility to water restrictions.</li> <li>• Lack of demonstrated options for farmers to grow their businesses and or ensure successful exit.</li> <li>• Reliance on debt financing for farm development and expansion.</li> <li>• Inadequate research on optimisation of the whole farming system from water allocations and whole farm profitability.</li> <li>• Aging grower population with inadequate succession planning for farm businesses and industry leadership positions.</li> <li>• Declining numbers of young people wanting to enter the industry.</li> <li>• Skill shortages in the rest of the economy attracting skills away from agriculture.</li> <li>• Inadequate strategies to develop key relationships (eg, with government, consumers, environmental groups, media, general public, etc).</li> <li>• Lack of integrated industry information systems that provide robust and up-to-date data to promote the industry and inform participants.</li> <li>• Poor integration of water allocation decisions and crop planning requirements.</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• World consumption exceeding production with stocks at the lowest level since 1982/83.</li> <li>• International demand for quality branded rice products that suit changing cuisines.</li> <li>• Movement on trade liberalisation that can bring increases in export opportunities.</li> <li>• National focus on water and development of more consistent policies under the National Water Initiative providing a climate for innovation in water allocations and supply.</li> <li>• Potential of R&amp;D and innovation to achieve further major increases in yields and water use efficiency.</li> <li>• Success in environmental and water management providing a strong base for promotion of the industry in the awareness and understanding of Australians particularly in urban areas.</li> <li>• Development of improved relationships with Government through participation in initiatives such as the Industry Partnership Programme and Environment Management Systems Pathways Programme.</li> </ul>	<ul style="list-style-type: none"> <li>• Frequent severe drought affecting water allocations.</li> <li>• Climate variability affecting crop yields and quality.</li> <li>• Impact of production variability on funds for R&amp;D.</li> <li>• Perceived low standing of the industry amongst urban people, the media and some environmental groups.</li> <li>• Negative and misinformed comment from prominent individuals and organisations.</li> <li>• Policy inconsistency and unpredictability of government decisions in relation to water and the environment.</li> <li>• Potential inequitable treatment of the industry in government policy making.</li> <li>• Market risk from deregulated domestic market.</li> <li>• Farm input cost increases (fertilizer, fuel and chemicals).</li> <li>• High cost of government regulations.</li> <li>• Negative publicity for export single desks due the wheat industry problems.</li> <li>• Failure to adequately invest in handling, storage, milling and processing infrastructure.</li> </ul>

# 1. THE RICE INDUSTRY PARTNERSHIP PROJECT

## What is the Rice Industry Partnership Project?

- The Ricegrowers' Association of Australia Inc. and the Australian Government Department of Agriculture, Fisheries and Forestry have commissioned a Taking Stock and Setting Directions project under the Government's Industry Partnerships Programme.
- The project is being undertaken in conjunction with the preparation of a five-year Rice Industry Research and Development Plan managed through the Rural Industries Research and Development Corporation.

## Who is doing the study?

- An independent consultant, Kiri-ganai Research Pty Ltd, is undertaking the Taking Stock and Setting Directions project. AgEconsPlus Pty Ltd is preparing the R&D Plan. The two project teams are acting as one to ensure effective and efficient delivery of their activities to the rice industry and Government. Consultants whom the industry will meet during various stages of the project are Ken Moore, Richard Price, Michael Clarke and Brian Ramsay.

## Aims of the Taking Stock and Setting Directions Project

1. Undertake an analysis of the rice industry's current performance and situation.
2. Identify likely challenges and opportunities for the rice industry over the next 5-10 years.
3. Determine the capacity of the rice industry to respond to current and future challenges and opportunities.
4. Identify key areas that the rice industry could build on to increase their profitability, sustainability, competitiveness, resilience and self-reliance (including a process to assist the rice industry to determine appropriate responses to these key areas).
5. Assist the rice industry to develop response strategies for priority issues.

## Industry oversight of the project

The project is being oversighted by a Project Management Committee comprising:

- Laurie Arthur (Chairman) - President, Ricegrowers' Association of Australia Inc.
- Gerry Lawson - Chairman, SunRice
- Noel Graham - Chairman, Rice Marketing Board
- Daryl Gibbs - Chairman, Rice R&D Committee
- Victoria Taylor - Executive Director, Ricegrowers Association of Australia Inc.
- Margie Thomson - General Manager, Established Industries, Rural Industries Research and Development Corporation
- Monica Staines - Department of Agriculture, Fisheries and Forestry

## 2. TAKING STOCK ISSUES

### 2.1 Introduction

#### Development of the Australian rice industry

Rice was introduced to Australia by the Chinese during the 1850s. Late in the 1800s and the first decade of the 20<sup>th</sup> century, there was experimentation in growing rice by the NSW Department of Agriculture and a ex-Japanese parliamentarian, Isaburo Takasuka. The first commercial crop is credited to Takasuka in 1914, but it was not until the 1920s that commercial growing became established. This was associated with the development of irrigation infrastructure and Department of Agriculture field trials of Californian varieties. By 1928, the Rice Marketing Board of the State of New South Wales had been established to market growers' crops. After decades of conflict between growers and private millers, the Central Executive of the Ricegrowers' Association of Australia formed Ricegrowers' Co-operative Mills in 1951 which paved the way for today's modern rice industry.

As with most of Australia's agricultural industries, rice production has been through turbulent and colourful times over the course of a century with periods of prosperity and depression. Its establishment as an industry was slow and difficult as early agricultural and irrigation pioneers grappled with growing this aquatic crop in a semi arid environment.

The history and timelines of the industry (SunRice) (<http://www.sunrice.com.au/rice/industry-timeline.asp>) are instructive to present day policy and decision makers in understanding the origins and evolution of the industry, the development of industry institutions and the cyclical nature of many issues. Although circumstances change, understanding the industry's history and culture can provide insights into how similar issues may evolve in future.

In the space of six years, since the turn of the century, there has been unprecedented change in the operating environment of the rice industry. For example:

- The variation in production has been extreme. A record rice crop of 1.7 million tonnes was produced in 2001. Severe drought reduced production to 390,000 tonnes in 2003 and the current crop is expected to rebound to almost one million tonnes. In this environment, SunRice became a major international trader of rice to service its markets due to low Australian supplies.
- In 2005, after 54 years of having a grower's cooperative, the members of Ricegrowers Cooperative Ltd agreed to a change in the business structure of SunRice from a cooperative to a grower owned company. This was seen as being necessary to respond strategically to global market conditions and to raise capital for business growth and future strategies.
- In October 2005, after 77 years of domestic statutory marketing through the Rice Marketing Board of the State of New South Wales, the NSW Government announced its decision to deregulate its domestic rice market. This was a result of commitments under the National Competition Policy, although no change was to be made to export marketing arrangements.

## 2.2 The profile and standing of the rice industry in world markets and the Australian community

Australia has developed a world class food industry during the course of the twentieth century from growing rice in irrigation areas in the Murray Valley, Murrumbidgee Valley and Coleambally area of south-western New South Wales and in northern Victoria.

The industry has created an Australian agricultural success story producing food for some 40 million people. SunRice, a grower-owned company, exports an average of 80 per cent of the Australian crop to over 60 countries. In normal crop years, the company generates around \$800 million in revenue, of which approximately \$500 million is in value added products.

With the industry now recovering from severe drought, its future looks bright. Global trends for the industry are very positive. The liberalisation of rice markets (albeit frustratingly slow), policy reforms in Asia as land and water resources come under increasing pressure, changing demographics and economic growth in Australia's export markets will be of significant value to Australian ricegrowers in the future.

Import demand from traditional rice producing countries in Asia is likely to increase with trade liberalisation, population growth and continuing urbanisation, even though per capita consumption is decreasing in these countries.

**Table 1: Changes in rice consumption, selected countries**

	Per capita consumption (kg)			Change in population (%)	
	1970-72	1989-91	1999-01	1970-2000	2000-2030
China	79	93	89	54	17
Japan	100	75	63	22	-5
Thailand	152	110	109	74	27
Australia	2	6	11	52	24
US	3	7	9	35	30

Source: FAO, USDA ER, 2004

The Rice R&D Program has developed the Opus variety for the Japanese style of cuisine due to its higher yielding properties than the preferred Japanese variety, Koshihikari. The Middle East has developed into an important market for the Australian rice variety Reiziq which is becoming a premium product in that region.

World production, consumption and stocks are important factors in prices received by Australian ricegrowers. In the past 5 years, world consumption has exceeded production and ending stock has declined. Global rice production for 2005/06 is projected to be a record 409.0 million tonnes, but consumption is expected to be 415.2 million tonnes. Global ending stocks for 2005/06 are projected at 66.6 million tonnes, 6.3 million tonnes below a year earlier. If this eventuates, it will be the fifth consecutive year of declining global ending stocks. Ending stocks would be the smallest since 1982/83 (USDA Rice outlook). This situation has been brought about by declining production in China and an absence of India from world trade.

With good export market prospects for rice and a highly successful track record, government and industry policies should be directed at enhancing the productive capacity of the Australian industry.

A profitable industry that invests in sustainable production is an asset to Australia in meeting future demands from a world that will be increasingly 'hungry' for high quality and healthy food.

The rice industry has a record of continuous improvement in product quality, productivity, land and water use, and environmental management. The industry's success belongs to Australia's ricegrowers, millers, processors, marketers, the industry's institutions, researchers, extension workers, service industries and the rural communities within which the industry exists.

Despite being a success story, there is serious concern in the industry about the perceived low standing of Australian ricegrowing amongst urban people, negative articles or comment about the industry in the media and misinformed opinions being given by prominent people or organisations.

However, its achievements provide a strong base for promotion of the industry in the awareness and understanding of Australians particularly in urban areas.

This could be assisted by the industry upgrading its information base to include robust and consistent statistics on its performance. These need to be accessed from one location by industry investigators including journalists, ministerial advisors, government policy makers and investment analysts.

### **Implications for Setting Directions**

Increasing the industry's profile is important for:

- ▶ lifting the morale of its participants and their confidence in the future of the industry;
- ▶ attracting new investment along the supply chain;
- ▶ in ensuring equitable treatment in government policy making; and
- ▶ successfully marketing its products for increasingly discerning consumers.

### **Workshop Question**

How should the industry promote its achievements and manage relationships with key groups whose attitudes and perceptions can affect its future?

## 2.3 The constant pressure for on-farm innovation to increase productivity and profitability

### Managing declining terms of trade

Rising input costs (eg, fuel, fertiliser and chemicals) are relentless and variable prices result in declining terms of trade for ricegrowers. Farmers are under constant pressure to increase productivity to maintain viability.

Productivity increases have been achieved through on-farm innovation over many years and the present Australian ricegrowing industry is a modern, sophisticated industry that uses advanced technology.

Australian ricegrowers have achieved the highest yields in the world with some sources quoting an average of 8-10 tonnes per hectare. Individual farmers consulted report best performance yields up to 16 tonnes per hectare, although yields can be highly variable across the farm.

**Table 2: Average size and yield of a rice farm – international comparison**

Country	Average rice area (ha)	Average yield (t/ha)	Production (milled) million tonnes 2004/05	Area (million ha)
Australia	591	8.83	0.55	0.08
US	146.5	7.37	7.08	1.34
Japan	1.75 to < 12	6.7	7.8	1.65
China	< 0.5	6.3	126	28.7
India	< 1	3.5	90	44.5
Thailand	<2	3	17.9	10.67

Source: FAO Rice Conference proceedings 2004, RGA 2004, USDA FAS 2004 (Rabobank, 2004)

High yielding crops have been achieved through several innovations:

- Changing land preparation for improved water use efficiency and production (eg, laser leveling for improved water application and more recently terraced layouts which allow progressive water usage across the terraces).
- Use of GIS to lift average yields across the ricegrowing area by improving the performance of low yielding areas.
- Improved high yielding rice varieties that use less water.

Growers consulted emphasised the priority of R&D on cold tolerance of rice varieties as a means of achieving major increases in yields and increasing returns per megalitre of water use.

Stubble use as a nutrient if it could be cheaply mixed with the soil or harvested and used as a byproduct (eg, for manufacturing fibre board or paper) was also cited as a priority to replace burning.

Innovation is an ongoing task requiring constant research, development and extension activities. A recent study conducted by the Centre for International Economics into 157 rice R&D projects found that the industry's major funding focus has been on production issues. Results showed that 71% aimed to develop technologies to improve competitiveness and 16% aimed to improve sustainable development.

## **Farms staying viable**

Despite productivity increases, many farmers struggle to remain viable. Over time, farms have become larger to achieve economies of scale. This has generally occurred through buyouts which often requires significant debt financing and is only usually undertaken by larger businesses or younger farmers.

Farmers operating small and economically marginal farms or reaching retirement are often unsure of options to improve viability or the best paths to exit. Financial counselling services are provided to agricultural industries through an Australian Government program, but this is usually provided in situations of considerable stress and exceptional circumstances. Growers report that there is little support for on-going advice and counselling on business options and exit strategies.

The consultations with ricegrowers indicated that there are varying views on what constitutes a viable farming operation with a range of water licenses and farm areas quoted. Ricegrowing is characterised by significant variation in the size of farms, the area planted to rice and areas devoted to other cropping and livestock enterprises.

Farm profitability relates to performance in the whole farming operation. Rice is only one crop grown on most farms that also usually have livestock enterprises in the mix. Rice farms diversify for three main reasons:

1. the restrictions placed on the proportion of the farm planted to rice;
2. adoption of crop rotation to prevent soil degradation; and
3. growing a second crop, often wheat, after harvesting rice to utilise the remaining moisture in the soil.

These factors ensure that rice is generally produced in conjunction with wheat or other cereals, oilseeds, pulses, maize and pasture crops. Some ricegrowers indicated that research on lifting returns from overall water use, poor performing enterprises or poorly performing parts of the farm was an R&D priority. There is a view that the emphasis should be on maximising returns from the water allocation rather than on rice per se.

## **Implications for Setting Directions**

- ▶ Further improving ricegrowing layouts and bringing more growers up to best practice is critical for the future profitability of growers. This is a difficult challenge as the investment required is large and knowledge and skills need to be enhanced.
- ▶ Cold tolerance of rice varieties is considered by ricegrowers to be a major focus of on-going R&D and extension.
- ▶ Stubble management is also cited as a key issue in the overall rice production cycle.
- ▶ While ricegrowers can seek professional advice from farm and financial advisors on their individual circumstances, there is a case for some fundamental economic research on farm profitability based on farm size, labour units required, achievement of full capital utilisation and optimal enterprise mix under varying water supply and price scenarios.

### **Workshop Questions**

1. Are these issues important priorities for on-farm innovation and the R&D program, and how should they be addressed?
2. What are the implications for research, development and extension?

## 2.4 Market and community demands for best practice environmental and water management

### Natural resource management

The rice industry is a leader in natural resource management through self-regulation and active participation in government programs.

Ricegrowing is Australia's most regulated agricultural industry in terms of land and water use, and environmental impacts. Much of this regulation has been initiated by the industry and is administered by the Irrigation Water Companies which are owned by irrigators (Murray Irrigation Limited, Murrumbidgee Irrigation Limited and Coleambally Irrigation Cooperative Limited).

- Hydraulic load limits apply in the Murray Valley (4 megalitres per hectare)
- Land use limits apply in the Murrumbidgee Valley (no more than one third of each farm).
- Rice can only be grown on approved heavy clay that minimise seepage into water tables. More than three metres of heavy, continuous clay is required for unrestricted rice growing. Soil suitability is identified by electro-magnetic technology (EM31) and soil textural analysis of samples bored at intervals across the paddock.
- Water use on rice cannot exceed the industry target requirement (eg, 15.3 ML/ha for the Murray Irrigation Area I 2004/05). Allowable water consumption levels for rice growing are set and policed by the Irrigation Water Companies.
- Water recycling is practiced and drainage water entering drainage schemes must meet EPA standards.

All of the Irrigation Water Companies have programs in place for reducing accessions to the watertable, increasing water use efficiency and encouraging best management practices (eg, the Total Farm Water Balance policy of Murray Irrigation Limited).

In the Murray Irrigation Area, CSIRO research recommends a maximum water use intensity for farms of between 1.5 ML/ha and 5 ML/ha depending on the depth to the water table, soil type, land use and rainfall. The Murray Irrigation Limited (MIL) policy is to set a maximum limit of 4 ML/ha, but if best management practice is adopted, the limit can be increase to 6 ML/ha.

All the MIL districts have been well below the maximum limit, although the results below show the low intensity that occurred during the drought.

**Table 3: Irrigation intensity across farming landscape**

	2000/01	2001/02	2002/03	2003/04	2004/05
MIL Region	1.73	1.74	0.53	0.84	0.97

Source: Murray Irrigation Ltd, 2005

The companies manage both stormwater and drainage plans that seek to ensure complete water re-use systems within irrigation areas, manage accessions to the water table and control nutrient and chemical contamination of both surface and groundwater.

Potential exists for greater integration of irrigation and environmental water use. For example, during the drought, irrigators were able to access water set aside for the Barmah-Millewa Forest through a water loan. Water requirements for the Forest to be met and the loan was equal to a 13.5% increase of the NSW general security allocation.

The industry is also covered by State Land and Water Management Plans which are community developed and implemented with both government and landholder funding. The Plans provide an integrated approach to managing each of the region's natural resources.

The rice industry has also been a leader in initiating its own environmental policy which it implemented in 2000. This covers a range of flagship programs covering biodiversity, greenhouse, industry performance, and the Environmental Champions Program. It also participates in the Environmental Management Systems Pathways Program supported through funding from the Department of Agriculture, Fisheries and Forestry.

### Water allocations and use

Water allocations for ricegrowers were seriously affected by the drought which in turn dramatically reduced production. For example, NSW Murray general security allocation was reduced to 8% in 2002/03. The Murray Irrigation Ltd allocation to shareholders was reduced to 284,901 ML compared with 1,543,752 ML in 2001/02. With carryover, supplementary water, net in-transfers and the Snowy advance the total resource available was 619,009 ML (62% less than the previous year). However, water delivered on-farm was 399,740 ML compared with 1,239,536 ML in the previous year.

The percentage general security allocations to Murray Irrigation Ltd shareholders over the five years is shown below.

**Table 4: General security water allocations in the Murray Irrigation Area**

Water availability	2000/01	2001/02	2002/03	2003/04	2004/05
NSW MV general security alloc.	95	105	8	55	49
MIL alloc. to shareholders	78	86	8	45	42

Source: Murray Irrigation Ltd, 2005

Average rice water consumption varies from between 11-14 ML per hectare with regional and seasonal variation. This compares favourably with pasture production through surface irrigation even though rice is an aquatic crop. The rice industry has increased water use efficiency by 60% over the past 10 years.

Through the R&D Program, it aims to further increase system yield per hectare by at least 50% with a further 25% saving in on-farm water use per hectare (RIRDC, 2006). The drivers for these further water use efficiency improvements will be:

- more efficient rice cultivars;
- precision management to reduce in-field yield variability and optimize water application;
- improving farm layouts;

- and effective extension and adoption.

Ricegrowers consulted overwhelmingly considered that water availability was their most pressing issue and future prospects for the industry depend on having more secure supplies. Most are seeking earlier notifications on general security allocations so that they can assess the risk of planting. The same problems face all irrigators whether they are within the irrigation supply areas or are river diverters or groundwater users. Ricegrowers in the Hay area which irrigate through river diversions and groundwater reported reduced access to the groundwater resource.

### **Implications for Setting Directions**

- ▶ Market and community demands for best practice environmental and water management are increasing. While the rice industry has been an initiator and implementer of good practice, it is in the interests of the industry to do the work necessary to continue to be at the forefront.
- ▶ The security of water supplies to the rice industry is its most pressing issue. The recent drought provides powerful evidence of the impact of lack of water availability on the industry. Greater security water allocations to the industry must be adequately addressed in Water Sharing Plans and the water and environmental performance of the industry should be recognised in these allocations.

### **Workshop Questions**

1. What aspects of environmental management must be addressed in future and how can good performance be effectively promoted.
2. What aspects of water availability need to be addressed? Are there innovative ways of water sharing that satisfy the needs of the industry and the environment?
3. Are there innovative ways to increase the amount of water supplied?
4. What are the implications for research, development and extension?

## 2.5 MANAGING MARKETING CHANGE AND RISK

The Australian industry has become a competitive supplier of quality rice products into world markets. It has achieved this through the vertically integrated marketing arrangements owned by ricegrowers.

### World markets for rice are highly protected

The global market for rice is characterised by high barriers to trade. Only about 6% of the world's rice production is traded, compared with approximately 18% of wheat, and 12% of coarse grains.

Trade liberalisation has been frustratingly slow for exporting countries. However, the trade reform that has been achieved is having a profound impact on the international rice market. Compared with the 1970s and 1980s, post Uruguay Round rice trade has essentially doubled, both in volume terms and as a share of consumption. (Rabobank, 2004)

Australian rice only represents around 0.2% of world rice production, although Australia's exports represent in the vicinity of 2-4% of world trade. (Rabobank, 2004)

Despite being a small producer in world terms, the Australian rice industry is the most efficient in the world, operating without any production or export subsidies – unlike most of its major competitors.

The OECD Producer Support Estimated (PSE) is a calculation of the percentage of gross receipts farmers receive from government support (both domestic and 'border' support). As Table 2 indicates the level of support for rice producers as a percentage of their total income is significant, as is the cost to government of administering that policy. (Rabobank, 2004)

**Table 5: Producer support estimates for rice, selected countries**

Country	Avg 2001-03 million USD	% PSE
Australia	7	6
EU	325	37
Japan	14,605	84
Korea	6,404	78
US	895	46

Source: OECD, 2004 (Rabobank, 2004)

Of all types of rice, export prices of medium/ short grain are the most affected by protection. At the FAO Rice Conference it was estimated that world export prices for medium/ short grain are lower by approximately 50% as a result of protection by Japan, South Korea and Taiwan.

The FAO report also suggests that, based on RICEFLOW model projections, complete rice trade liberalisation (had it occurred in 2000) would have resulted in an expansion in global trade of 3.5 million tonnes, equivalent to a 15% increase on 2000 figures. This in turn would result in trade weighted average export prices rising by 32.8% and import prices falling by 13.5%. (Rabobank, 2004)

The high protection afforded to competitor countries has provided strong support to the maintenance of the single desk for Australian exports. In October 2005, the National Competition Council acknowledged that the public interest in having a single desk for exports has been adequately demonstrated. The consultations with growers indicated almost unanimous support the export single desk.

### Managing the marketing risk of climate variability

The large variability shown in the tables below is due to the impact of drought on water allocations.

**Table 6: Number of farms growing rice**

		2004 CROP	2003 CROP	2002 CROP	2001 CROP	2000 CROP	1994 CROP
Number of Farms Producing Rice	MIA	492	640	698	670	664	637
	CIA	328	272	366	389	389	345
	MV	744	92	1,255	1,412	1,070	1,295
	<b>TOTAL</b>	<b>1,564</b>	<b>817</b>	<b>2,261</b>	<b>2,499</b>	<b>2,129</b>	<b>2,277</b>

Rice Marketing Board, <http://www.rmbnsw.org.au/about/statistics.asp>

The total harvested area also shows the impact of the drought. This indicates the flexibility of shifting between crops between years.

**Table 7: Total area cropped**

		2004 CROP	2003 CROP	2002 CROP	2001 CROP	2000 CROP	1994 CROP
Harvested Area (Hectares)	MIA	22,774	22,177	51,983	66,196	53,106	42,040
	CIA	13,068	11,444	26,057	30,999	27,850	22,924
	MV	28,893	4,735	69,228	87,036	50,887	67,692
	<b>TOTAL</b>	<b>64,735</b>	<b>38,356</b>	<b>147,268</b>	<b>184,231</b>	<b>131,843</b>	<b>132,656</b>
Average area per farm		41.39	46.95	65.13	73.72	61.93	58.26

Rice Marketing Board, <http://www.rmbnsw.org.au/about/statistics.asp>

Over the five years shown, production reached a record of 1.7 million tonnes and then dropped dramatically 2 years later to 390,000 tonnes. The current harvest is expected to rebound to 980,000 tonnes (SunRice). Growers consulted expected this to be followed by another very large crop.

**Table 8: Production**

		2004 CROP	2003 CROP	2002 CROP	2001 CROP	2000 CROP	1994 CROP
Production (Tonnes)	MIA	210,376	236,006	478,171	629,964	453,883	350,288
	CIA	101,489	114,590	211,620	289,766	227,819	189,831
	MV	217,119	39,483	551,919	824,336	407,063	542,056
	<b>TOTAL</b>	<b>528,984</b>	<b>390,079</b>	<b>1,241,710</b>	<b>1,744,066</b>	<b>1,088,765</b>	<b>1,082,175</b>

Rice Marketing Board, <http://www.rmbnsw.org.au/about/statistics.asp>

Interestingly the highest yields for all regions occurred in the drought affected 2003 crop year.

**Table 9: Yields**

		<b>2004 CROP</b>	<b>2003 CROP</b>	<b>2002 CROP</b>	<b>2001 CROP</b>	<b>2000 CROP</b>	<b>1994 CROP</b>
Average Yield (Tonnes/Hectare)	<b>MIA</b>	9.24	10.64	9.20	9.52	8.55	8.33
	<b>CIA</b>	7.77	10.01	8.12	9.35	8.18	8.28
	<b>MV</b>	7.51	8.34	7.97	9.47	8.00	8.01
	<b>Overall</b>	<b>8.17</b>	<b>10.17</b>	<b>8.43</b>	<b>9.47</b>	<b>8.26</b>	<b>8.16</b>

Rice Marketing Board, <http://www.rmbnsw.org.au/about/statistics.asp>

A consistent or growing level of production of rice depends on the reliability of water allocations to irrigators. Inconsistency in allocations due to policy changes or climate variability introduces high levels of risk in servicing Australia's rice customers. SunRice managed this marketing risk during the drought by becoming a significant trader. It also purchased water on behalf of its grower shareholders from Snowy Hydro and these additional allocations have underwritten the current 'bumper' crop.

### **Policy settings in Australia also affect the industry's ability to grow**

The ability of the rice industry to grow depends on further trade reform and policy settings in Australia.

Further change in marketing arrangements will occur with the deregulation of the NSW domestic rice market and this poses risks and opportunities that need to be addressed by the industry.

In October 2005, the NSW Minister for Primary Industries announced that a single desk for exporting rice from NSW will be maintained, but domestic competition will be permitted through the introduction of an authorised buyer scheme. The current vesting arrangements will apply to the crop due to be harvested, but the changes will be implemented from 1 July 2006.

The NSW crop will continue to be vested in the Rice Marketing Board, but it will licence 'authorised buyers' who will be able to trade in the domestic market. The single desk for exports will be protected through heavy fines for any person or corporation found to have breached the conditions of their licence (i.e. exported rice). Breaches will result in the loss of their authorised buyer permit for a stipulated period of time. Decisions of the Rice Marketing Board will be subject to appeal to the NSW Administrative Decisions Tribunal.

In October 2005, the National Competition Council has acknowledged that the public interest in having a single desk for exports has been adequately demonstrated.

However, community attitudes and government policy can change quickly. It is clear that events in the wheat industry have increased the scrutiny that single desk marketing will come under in government and the community.

To retain the single export desk as an effective marketing instrument for ricegrowers, good business practice suggests that processes be put in place for tracking evidence of the benefits for the rice industry.

## Implications for Setting Directions

- ▶ After 74 years of statutory marketing, deregulation is a significant change in government policy involving market risks for existing players that each will need to address and manage.
- ▶ Ricegrowers will have choice in selling to 'authorised buyers' and may need to assess this choice in terms of long term profitability, the marketing capability of the industry, the necessity (if any) to spread marketing risk and their interests as shareholders of SunRice.
- ▶ The Rice Marketing Board will become the licensor of 'authorised buyers'. Being subject to the Administrative Decisions Tribunal will require that it ensures due process in the administration of the authorised buyers' scheme, transparency of processes, accountability and governance arrangements that involve no conflicts of interest (real or perceived). The Board may need to re-examine its relationships with industry participants in light of these matters.
- ▶ SunRice as the present holder of the NSW domestic single desk (until July 2006) and a private company will address market risks to its business and the implications for returns to its grower shareholders.
- ▶ Potential new entrants will address the business prospects of gaining market share, investment requirements and profitability of operations.
- ▶ The Ricegrowers' Association of Australia in representing grower interests may need to re-examine its services to grower members, the collection and provision of information, its relationships with the other industry institutions under the new arrangements, and means of value-adding to grower membership benefits. A strong and viable grower association is vital to an industry in an increasingly political and accountable world.

### Workshop Questions

1. What processes are required to address the implications of the changed circumstances for market risk and to establish strategies to deal with threats and opportunities?
2. What are the implications for research, development and extension?

## 2.6 Maintaining investment in the industry's capital infrastructure, leadership and skills

This issue relates to both investment in the industry's handling and processing capacity and the people involved in industry leadership positions and all parts of the supply chain including the service sector.

### Capital infrastructure

This includes:

- the storage depots owned by the Rice Marketing Board; and
- the rice mills owned by SunRice.

The inventory of storage depots is as follows:

**Table 10: Rice Marketing Board storage depots**

Storage Depots		Sheds	Static Capacity
<b>MIA</b>			
1	Benerembah	5	84,000 tonnes
2	Gogeldrie	4	51,800 tonnes
3	Griffith	3	33,000 tonnes
4	Leeton	1	11,000 tonnes
5	Murrami	2	28,000 tonnes
6	Whitton	7	25,000 tonnes
7	Willbriggie	4	50,000 tonnes
8	Yenda	5	51,000 tonnes
<b>CIA</b>			
9	Coleambally	7	67,000 tonnes
10	Emery	7	120,000 tonnes
11	Walsh	2	43,500 tonnes
<b>MV EAST</b>			
12	Finley	3	96,000 tonnes
13	Blighty	2	29,000 tonnes
14	Deniliquin	13	253,000 tonnes
15	Hogan	3	67,000 tonnes
16	RRAPL (Jerilderie)		300 tonnes
17	Hay	2	52,000 tonnes
<b>MV WEST</b>			
18	Burraboi	7	88,000 tonnes
19	Caldwell	4	36,000 tonnes
20	Moulamein	4	59,000 tonnes

Source: Rice Marketing Board, <http://www.rmbnsw.org.au/about/facilities.asp>

This infrastructure has been funded under the Capital Equity Rollover Scheme for which growers hold equity certificates. These are valued at around \$100 million against which there are liabilities of \$30 million.

The most pressing issue with this infrastructure is its ownership under the deregulated domestic marketing arrangements.

### **Rice Mills**

The rice mills are owned and operated by SunRice. The facilities valued at around \$140 million undertake milling and packaging for the various markets.

**Table 11: SunRice mills**

<b>Rice Mills</b>	<b>Capacity</b>
Coleambally	45 tonnes per hour
Deniliquin No 1	65 tonnes per hour
Deniliquin No 2	30 tonnes per hour
Leeton	40 tonnes per hour

Source: Rice Marketing Board, <http://www.rmbnsw.org.au/about/facilities.asp>

A key issue with this infrastructure is the impact of variability of rice harvests for the economic capacity utilisation and the effects of this on shareholder returns and employment in the towns.

### **Industry Leadership**

All agricultural industries face problems of attracting and developing people for the many leadership positions required in their industry. In the case of rice, this includes the Ricegrowers' Association and its many committees, the boards of SunRice and its subsidiaries, the boards of the Irrigation Water Companies (Murray Irrigation Ltd, Murrumbidgee Irrigation Ltd and Coleambally Irrigation Ltd), the boards and committees of irrigator bodies such as the NSW Irrigators' Council, boards and committees of Catchment Management Authorities and other environmental management groups, and the various community organisations in which ricegrowers need to participate.

Attracting people to these leadership positions is a difficult task for a variety of reasons:

- the demands on young ricegrowers with families and in establishing their businesses;
- the pressures on all ricegrowers in managing their businesses as well as participating in industry and community forums;
- the rising costs of labour and the pressures on farmers to do more;
- the aging of the farming population;
- the difficulty of attracting or supporting children back into the farm business.

### **Rice industry labour availability and skills**

With tight labour markets in Australia, the availability of sufficient skilled labour is a challenge to most industries. The rice industry has been fortunate in having sizable towns in its growing, storage and milling regions, however, the consultations indicated issues in the availability of people with the required skills.

### **Implications for Setting Directions**

- ▶ To ensure the rice industry remains competitive in global markets, investment in both capital infrastructure and human resources must be maintained.
- ▶ As holders of equity certificates in the storage depots, ricegrowers will need to address options for continued holding of these certificates and future ownership of the depots.
- ▶ The Rice Marketing Board may need to address the divestment of rice storage depots under the new deregulated arrangements.

### **Workshop Questions**

1. What aspects of capital and human resources investment need to be addressed and what are the options?
2. What are the implications for research, development and extension?

## 2.7 The importance of relationship management in supply chains and with service sectors

“It is becoming increasingly evident that achievement of the desired market position cannot be achieved solely through the company’s own efforts. Because each company is just one link in the production chain, with upstream and downstream links, it has to cooperate. The more effectively it does this, the stronger its competitive position in the market.”

Source: Jan van Roekel, Managing Director, Agri Chain Competence Foundation (the Netherlands, 1998)

While the rice supply chain is vertically integrated and has been governed by statutory marketing arrangements for the best part of a century, rapid changes are taking place in the global food market in recent years to which the industry must respond.

Competition is increasing as food suppliers are able to make offers in any world market. This has meant world markets have become more crowded and even saturated as suppliers compete for market share.

Markets have become ‘buyers markets’ with consumers exerting greater power and being more discerning about the quality and value of products. In consumer dominated markets, supplier success factors include the following:

- close knowledge of consumers’ values and buying preferences and the ability to supply products which meet consumer expectations;
- major investment in differentiation against the best competing suppliers from anywhere in the world;
- achievement of continuity of supply over the whole year requiring sufficient volumes and the ability to be able to source from where the product is able to be produced at any time during the year;
- having the capacity to supply domestic and export markets as the distinction continues to blur between these markets;
- having the business approach and systems to be able to deal with more consolidated buyers including retail and food service chains;
- having the capacity and systems to supply global sourcing networks which may mean being able to source product both domestically and from overseas; and
- being able to build long term relationships with buyers and able to supply according to their specifications particularly in relation to quality and food safety.

There is much research and studies on global food market trends. The main trends can be summarised as below:

<b>Consumers</b>	Westernisation; income growth; seeking convenience; concern about health and nutrition.
<b>Retailing</b>	Global spread of major retailers; growth of hyperstores, discount warehouses, premium supermarkets, specialty stores.
<b>Global food supply chains</b>	Increasing purchasing power of major supermarkets; reduced number of suppliers; regional and global buying; increasing prominence of house brands and retailer labels; supply chain influence moving to retailers and away from processors.
<b>Processed food</b>	Increasing international trade; consolidation of processors (mergers and acquisitions); increasing variety of products.
<b>Food service</b>	Consumption increasing through quick service and family restaurants; development of uniform brands; increasingly centralised procurement; strong emphasis of food quality and safety; uniformity of products.

### Implications for Setting Directions

- ▶ The management of relations with key players in the supply chain and service industries including government as a regulator is seen as a priority for success in most business sectors.
- ▶ Most agricultural industries are emphasising the need for growers to keep abreast of market information and trends in food and consumer markets.
- ▶ Integrated industry information systems are seen as critical in promoting the profile and achievements of an industry or business.

### Workshop Questions

1. Are these issues important for the rice industry?
2. Given a grower-owned vertically integrated supply chain exists, is the provision of complete market information to ricegrowers including consumer trends important?
3. How should ricegrower organisations manage their relationships with key groups whose attitudes and perceptions can affect the industry's future?
4. What are the implications for research, development and extension?

# APPENDIX 1. CONSULTATIONS

The following table provides a list of organisations and individuals that were consulted from 10 - 24 February. Consultation is a vital part of this project and further organizations and individuals will be contacted as the project progresses. In addition, the Taking Stock Workshop will be a key event that provides opportunities for industry stakeholders to contribute to the project.

<b>Date/time</b>	<b>Organisation/individuals</b>	<b>Completed</b>
Friday, 10 February	Don Harman: NSW Agriculture	Telephone discussion (Ken Moore)
Monday 13 February	DAFF: Charmaine Hasting (Field Crops), Fiona Hill (NRM), Michael Goldsworthy and Damien Band (International), Stuart Stark (IPP)	Meeting (Richard Price; Ken Moore)
Monday 13 February	RIRDC: Margie Thomson, Rice Program Manager	Meeting (Richard Price; Ken Moore)
Monday 13 February	Murray Darling Basin Commission: David Dreverman (General Manager, River Murray Water)	Meeting (Richard Price; Ken Moore)
Monday 13 February	National Water Commission: Laura Phipps, Jane Taffield, Murray Radcliffe, (+ one other)	Meeting (Richard Price; Ken Moore)
Tuesday 14 February	NFF: Scott Mitchell SunRice: Aditya Swarup (General Manager – Strategy)	Meeting (Richard Price) Meetings (Ken Moore)
Wednesday 15 February	RGA Coleambally Branch Meeting  Coleambally Irrigation Cooperative Ltd: Kevin Kelly, Arun Tiwari	Observer (Ken Moore)  Meeting (Ken Moore)
Thursday 16 February	Murrumbidgee Irrigation Ltd: Brett Tucker (CEO), Robert Kelly (Environmental Manager)  RGA Mirrool Branch Meeting	Meeting (Ken Moore)  Observer (Ken Moore)
Friday 17 February	SunRice: Gerry Lawson (Chairman) The Rice Marketing Board for the State of New South Wales: Noel Graham (Chairman)  SunRice Leeton Rice Mill	Meeting (Richard Price and Ken Moore)  Tour (Richard Price, Ken Moore and Victoria Taylor)

<b>Date/time</b>	<b>Organisation/individuals</b>	<b>Completed</b>
Monday, 20 February	Irrigation Research and Extension Committee: Bryan Clarke, Kealey Clarke Pty Ltd (Executive Officer)	Meeting (Ken Moore)
Tuesday, 21 February	Murray Irrigation Limited: George Warne (Chief Executive Officer)	Meeting (Ken Moore)
Wednesday, 22 February	Burraboi ricegrowers: Les & Jenny Gordon, Andrew & Nicky Herbert, Mike & Shirley Surley, Greg Lodge	Meetings (Ken Moore)
Thursday, 23 February	Coleambally ricegrowers: David Brain, Wayne Morton, John Payne, John Gitsham  Hay ricegrowers: Brett Thomas (Cropping Manager, Uardry Station) Mark McLean (Southern Regional Manager, Twynam Agricultural Group) Duncan Fraser Ken Munn Daryl Gibbs (Rice R&D)  Committee Chairman and rice industry agricultural consultant)	Meeting (Ken Moore)  Meetings (Ken Moore)  Meeting (Ken Moore)
Friday, 24 February	Darlington Point ricegrower: Bernard Whelan  Griffith/Yenda ricegrowers: Nayce & Campbell Dalton, Christian Benetti, Frank Canduro, Gary Awen, Terry McFarlane, Mark Dosetti, Frank DalBon  Leeton ricegrowers: Peter Draper Steve McKay  Rabobank	Meeting (Ken Moore)  Meetings (Ken Moore)  Meetings (Ken Moore)  Telephone discussion (Brian Ramsay)

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# APPENDIX 3. NSW RICE INDUSTRY ORGANISATION

