



Summary

- Australia needs to develop farming systems with appropriate focus on scale but an ability to supply into large niche-markets.
- Awareness in the consumer of where Australia sits in its management practice should be increased so that Australian production is appreciated for its level of professionalism.
 - As demands for QA and EMS increase and responsibility for food safety is pushed further and further down the supply chain to the farmer, it becomes more and more critical that a supply chain approach is adopted. These demands must become the basis for two way communication which will lead to value being recognised and paid for.
 - Government could help here by influencing the development of a common language so that information gathered for productivity, NRM, food safety or OH&S can be gathered in a common manner so that farmers are not inundated with demands for information. Collected once and held securely this information could satisfy the diverse needs of productivity improvement, EMS, QA and risk management for occupational health.
 - Farmers need to be able to develop knowledge of supply chain processes in order for them to engage in two way communication rather than the blunt instrument of price alone.
 - There needs to be an immediate review of the rural training packages within the National Training Framework relating to the “Irrigation” and “Conservation and land management” packages, to better integrate NRM into these predominantly rural production and food safety focussed packages.
 - There is a need to improve measurement and monitoring capacity at the farm production level so that continuous improvement can be achieved against known benchmarks within the on-farm resources managed and against peers in the industry.
 - There is the need for professional career paths to be developed in water resource management so that professionals have the opportunity to move between the realms of rural, urban and environmental water management.
 - There is a need for a national research agenda but it needs to be built on R&D needs of catchments and regions.
 - Ready access to what research is available together with timely delivery of new research is a key to driving innovation and change. Funds need to be made available for the wide dissemination of information. Promotion of best practice examples is one of the better ways of inspiring confidence in farmers to make changes in enterprise, technology or both.
 - Bio Fuels as a source of energy need to be taken seriously as an alternative to fossil fuels. These fuel production facilities can underpin successful, cereal and oilseed enterprises with long term local contracts are possible which are linked to increasing world energy demands.
 - It is important to note that the funding made available through the NWI is in no way sufficient to address the water issues outlined in the paper to which we are responding let alone the myriad other issues at state and local level that need attention.

A role for government in this is to ensure that in its policy framework there is clearly stated the desire for irrigation industries to remain as viable, competitive contributors to Australia's future prosperity and wellbeing.

- With the water reform process well under way, it is now imperative that natural resource managers and the commercial sector engage to allow the provision of specific environmental services by managing and moving commercial and environmental water with the sort of efficiency that is now expected of rural (stock and domestic), commercial, irrigation and urban users.

- Government investment should target the development of commercial mechanisms for the efficient management and movement of water to its highest environmental use, these include:

- Mechanisms for farmers (and others) to invest in land and water assets that can deliver environmental services.
- Mechanisms to achieve scale to meet large catchment or basin wide environmental targets.
- Mechanisms to trade water at the interface between environmental and commercial water to achieve highest value and most efficient use.
- Contracts with specifications that a farmer can deliver against.

- Many Australians are still clinging to the notion that the climate variability we are experiencing is part of the natural cycle in Australia where the longevity of records does not show that climate is changing. Two of the issues that are directly related to farmers are; costs- insurance premiums have already been adjusted to allow for climate change scenarios so direct costs have gone up. The second issue is that our competitors in the northern hemisphere where climate change will have significant beneficial impacts are already gearing up to access land that will become arable.

- The broader implications of change within irrigation communities are very much related to the movement of water out of irrigation areas. The infrastructure and ownership costs of water delivery businesses whether large or small are very significant. Many rural communities are dependent on the industries that utilise water. It is clearer still in the last drought that vibrant communities can survive where they have access to water. Exit fees, and other appropriate mechanisms will allow time for rational decisions to be made in the open water trading environment that is developing. This is an absolutely critical issue and needs thorough stakeholder engagement.

- Any notion that it is necessary or desirable for the irrigation industry to switch entirely over to high value enterprises is flawed. Horticultural and viticultural markets would not cope with such change and the implications relating to the water security requirements of such high capital-base enterprises are significant indeed. Sustainable water use in Australia demands that we have a balance of efficient, annual based enterprises that can move in and out of production according to available water; and efficient perennial based enterprises that have access to high security water year in year out.

Introduction

The Australian National Committee on Irrigation and Drainage (ANCID) is the Australian representative body on the International Commission on Irrigation and Drainage (ICID) and is a member of its Asian Regional Working Group.

ANCID represents most water authorities and companies in Australia. ANCID members represent about \$6.6 Billion of assets (at replacement value), in 68 businesses with 35,000 irrigators and 198 towns as customers. Total entitlement to water managed – 10,068,395 ML (2003/2004). This represents about 45% of all water entitlements in Australia. As new technologies and farming systems are introduced adjustment to water delivery products will need to be made and this will include seasonal through to hourly delivery requirements. It is expected the variation of services between commodities will increase. With water trade and rapid changes in market and climatic conditions there are a great many challenges facing water delivery businesses, private diverters and groundwater users.

Future operating environment

B. Markets for agriculture and food

International markets

Australia is a very good producer of commodities. However the natural progression of developing economies will be to compete in these commodity markets. Australia needs to develop farming systems with appropriate focus on scale but an ability to supply onto large niche-markets. For example the wheat market currently focuses on hard-wheat varieties, with premiums geared to that. Australia could in its south-eastern areas under irrigation, ensure quality and continuity to large noodle, flatbread or pasta wheat markets. There are approximately 450,000 hectares of irrigation land in the southern Murray Darling Basin is available for this type of production. At an average of 6 tonne per hectare under irrigation (readily achievable if not constrained with drought tolerant genetic attributes) this would produce 2.7 million tonnes of wheat. At present wheat production off irrigation in the most part goes into the broad commodity based wheat market which fluctuates wildly with climatic and market forces. Such production would contribute a very significant proportion of the export wheat potential of Australia. However there are very limited programs ensuring that wheat varieties suitable for irrigation are being developed. Also lacking is concerted, co-ordinated extension of best management practice to take up such opportunities.

Domestic markets

Some consumers expectations are unrealistic particularly in relation to the sustainability of production processes in Australia compared to over seas. A common held view is that Australia should not grow cotton or rice for example. This view on one hand sees that producing these products in Australia is not environmentally sustainable, however shifting the responsibility to produce such food and fibre overseas to regions where no-where-near the same level of best practice is utilised is in itself not a good thing for the global environment. Awareness in the consumer of where Australia sits in its management practice should be increased so that Australian production is appreciated for its level of professionalism etc.

One only has to use “google-earth” to realise the level of traceability and scrutiny our competitors have access to. There is now little evidence that having food-safety accreditation will command premiums, but access to certain markets is clearly dependent on having in place quality assurance systems that are aimed at satisfying retailer and ultimately consumer demands. As these demands increase and responsibility for food safety is pushed further and further down the supply chain to the farmer, it becomes more and more critical that a supply chain approach is adopted. These demands must become the basis for two way communication which will lead to value being recognised and paid for. There is also a need for farmers to manage the risk of being held accountable for a food safety problem. Farmers cannot afford to leave themselves open to such claims that are sheeted home to their produce, so food safety systems, and proper record keeping can protect farmers and customers from such eventualities.

There are four objectives that are consistent across all agricultural endeavours, whether these are highly efficient, sophisticated, modern and diverse (such as the highly intensive irrigated systems in Australia) or the simplest of subsistence enterprises in a highly populated third-world region. These objectives are:

- prosperous rural communities - underpinned by profitable farms,
- safe food and fibre for consumers,
- environmental management,
- health and safety for the people involved.

Modern farming has the capacity to impact enormously on the environment on which it and all aspects of society depend. By contrast, however, the capacity of a single farm individually to provide tangible benefits to the wider environment is extremely limited. The knowledge and skills required to manage land and water resources are complex, and satisfactory financial returns are harder to make. Farmers are driven by the need to make profit, yet at the same time they need to be able to demonstrate stewardship so that continued access to the resources is deemed appropriate. A wide range of regulatory bodies, natural-resource managers, conservation and consumer groups, employee and other community representatives all have input into how natural resources should be managed and used. But there are not as yet satisfactory tools to provide a consistent ‘language’ between all interest groups. It is only when appropriate farming practices are adopted on a wide scale that individual effort can be recognised as contributing to regional or catchment health. It is also the issue of scale that allows individual effort to contribute to regional or catchment prosperity.

Government could help here by influencing the development of a common language so that information gathered for productivity, NRM, food safety or OH&S can be gathered in a common manner so that farmers are not inundated with demands for information. Collected once and held securely this information could satisfy the diverse needs of productivity improvement, EMS, QA and risk management for occupational health.

C. Competitiveness of Australian agriculture and food businesses

Supply chains

Commercial farming businesses in the future will have to balance the needs of production, environment, quality and occupational health & safety. These land and water managers will run benchmarked, agricultural investments growing a range of commodities that cover financial, agronomic, and environmental and community risks. These enterprises will have the advantages of scale through alliances without the disadvantages of inflexibility and illiquidity. They will effectively target a balance of bulk, commodity-markets and specialist, niche-markets to drive productivity. These markets will include the supply of ecosystem services. These farms will have linkages with primary processing, manufacture and the marketing of quality assured, branded product. Not all of these steps will be owned but they must be linked using sophisticated information technology and most importantly of all relationships. This integrated supply chain approach will rely on the communication of extremely valuable information which will underpin these relationships and allow product and market value to be captured all the way along the chain.

The key to ensuring a level of producer control in the supply chain is to link the steps from the farm to the global market place. The interface between each step is critical because it is at these points that breakdowns occur, usually in communication or at a point where a financial transaction takes place. The management of information allows integration of on farm and off farm activities in order to capture value at each step. This value is gained through taking a marketing advantage or improving efficiencies. In most cases the market power is held in the retail end of the market. Knowledge of and a capacity to negotiate to achieve the value created in the supply chain is a major factor in farmers being price takers. Farmers need to be able to develop knowledge of supply chain processes in order for them to engage in two way communication rather than the blunt instrument of price alone.

Education, skills and labour supply

There is a National Training Framework in place which is competency based, however funding for training in TAFE for example is still delivered through hours of attendance at formal courses.

There needs to be an immediate review of the rural training packages including the "Irrigation" and "Conservation and land management" packages to better integrate NRM into these predominantly rural production and food safety focussed packages.

There is a need to improve measurement and monitoring capacity at the farm production level so that continuous improvement can be achieved against known benchmarks within the on-farm resources managed and against peers in the industry.

There is underway a National Landcare Programme partnership between DAFF, ANCID and the Irrigation Association of Australia (IAA) where IAA is managing a National Irrigation Skills Initiative which is aimed at establishing the culture and practice of continuing professional development in a range of areas of the Irrigation Industry from the water bailiff to the farm manager.

There is the need for professional career paths to be developed in water resource management so that professionals have the opportunity to move between the realms of rural, urban and environmental water management. This sort of integration will attract people into a water resource management careers.

Research, development, innovation and technology

There is a need for a national research agenda but it needs to be built on R&D needs of catchments and regions. These should identify R&D needs which could then be cross referenced with other research so that duplication is avoided. Broader industry and market research initiatives can then be taken in the knowledge that immediate catchment and regional needs are being met.

As part of the Partnership program mentioned above ANCID is developing an Irrigation Information network. This is in response to the dire need for farmers and industry to be able to access information that can allow improvement in productivity and environmental performance in the increasingly competitive world markets that the irrigation industry operates in. Ready access to what research is available together with timely delivery of new research is key to driving innovation and change. Funds need to be made available for the wide dissemination of information. Promotion of best practice examples is one of the better ways of inspiring confidence in farmers to make changes in enterprise, technology or both.

Water

To avoid duplication, comments on Water have been included in the Natural Resource management heading below.

Energy

Bio Fuels as a source of energy need to be taken seriously as an alternative to fossil fuels. These fuel production facilities can underpin successful, cereal and oilseed enterprises with long term local contracts are possible linked to increasing world energy demands.

Biosecurity and quarantine

Mention is made above on the need for integration of information demands whether they be for productivity, food safety or environmental reporting purposes.

D. Using and managing natural resources

Natural resource management

ANCID is already working at many levels including with the NWC to address water issues. It is important to note that the funding made available through the NWI is in no way sufficient to address the issues outlined in the paper to which we are responding let alone the myriad other issues at state and local level that need addressing. A role for government in this is to ensure that in its policy framework there is clearly stated the desire for irrigation industries to remain as viable, competitive contributors to Australia's future prosperity and wellbeing. Without that there will be insufficient confidence for private businesses to invest sufficient capital to address industry, community and environment needs.

With the water reform process well under way, it is now imperative that natural resource managers and the commercial sector engage to allow the provision of specific environmental services by managing and moving commercial and environmental water with the sort of efficiency that is now expected of rural (stock and domestic), commercial, irrigation and urban users.

These services will need to be delivered against established benchmarks and criteria many of which need to be the subject of research and development activities. The commercial agriculture sector provides a wide range of mechanisms and practices for delivery of products to both commodity and niche markets. The water allocated to the environment must be used effectively and efficiently in both large (e.g. Murray Icons) and small or “niche” ecologically significant sites.

Water will continue to have competing demands placed upon it. Managing the water at the interface between urban, commercial and environmental demands will become more complex but more efficient. Identifying new uses and sources of water will likely take the form of utilisation of grey and saline waters which currently do not have the level of use possible. These sources of water should be identified and opportunities to develop irrigation enterprises to create value with what is currently seen as an environmental problem. This is one way the irrigation industry can be seen to contribute positively to the problems created by resource use in our urban sector.

Effective market mechanisms such as monetary ones designed to allow water to move to its highest value use are being developed and utilised rapidly.

Reductions in availability of water is something that the commercial and the natural environments will have to face and it is at the interface between the two that some of the most effective solutions will be found.

The time to develop mechanisms to allow the efficient management and movement of environmental water is before us, these include:

- Mechanisms for farmers (and others) to invest in land and water assets that can deliver environmental services.
- Mechanisms to achieve scale to meet large catchment or basin wide environmental targets.
- Mechanisms to trade water at the interface between environmental and commercial water to achieve highest value and most efficient use.
- Contracts with specifications that a farmer can deliver against.

The Table 1 below shows how existing mechanisms in the commercial environment relate to the mechanisms that need to be developed in the natural environment.

Mechanism / Issue	Commercial Water Use	Environmental Water Use
Culture	In the commercial environment there is a rich culture of continuous improvement and utilisation of resources to maximise return on investment.	In the natural environment there is a need to establish a similarly rich culture of continuous improvement and utilisation of resources in order to maximise the return on environmental flows.
Water Trading	Mechanisms for water trading are in place which ensure that water moves to its highest value use.	Mechanisms need to be established which ensure that environmental flows are moved to their highest value environmental use.
Structures and Technology	Physical structures and technology are utilised to ensure the timely and efficient delivery of water for irrigated production of food and fibre products.	Existing physical structures and technologies are being removed and modified and new ones are being put in place to ensure the delivery of environmental outcomes.
Best Management Practice	Farmers who manage land and water are being asked to demonstrate best management practice within their enterprises. These enterprises are meeting a diverse range of commodity and niche markets. Management of these enterprises needs to address production, environment and quality issues in order to deliver economic, environment and community outcomes.	In the management of the natural environment there is a growing expectation that the managers of environmental flows should be able to demonstrate environmental, community and economic outcomes as well, particularly in the identified River Murray Icons however capacity to deliver outcomes in smaller specific ecosystems needs to be developed.
Measurement of outcomes	These outcomes can be measured using a range of well established	Methods of measurement and benchmarking are not well established.

	benchmarks such as Water Use Efficiency (WUE) and Return on Investment (ROI).	
Investment	There are also well established mechanisms for; Investment along the supply chain.	The opportunity exists to attract investment into this area but there is extremely limited opportunity to do so.
Achieving Scale	Well established mechanisms are established to achieve scale in the market place. AWB, Grainco for example.	Capacity to work together to achieve broad scale outcomes needs to be developed.
Contracts	Contracts can readily be available identifying specifications and price.	Contracts need to be designed and made available specifying price and “currency”.

TABLE 1

Achieving natural resource management benefits

Government investment should target the development of commercial mechanisms for the efficient management and movement of water to its highest environmental use.

Climate variability and change

Many Australians are still clinging to the notion that the climate variability we are experiencing is part of the natural cycle in Australia where the longevity of records does not show that climate is changing. Two of the issues that are directly related to farmers are; costs- insurance premiums have already been adjusted to allow for climate change scenarios so direct costs have gone up. The second issue is that our competitors in the northern hemisphere where climate change will have significant beneficial impacts are already gearing up to access land that will become arable.

E. Rural and regional communities

Rural businesses and communities

Changing nature of farming and Implications of change for rural communities

Irrigators have the opportunity to improve within their current enterprises despite where in an improvement cycle they have entered. There are barriers to such improvement which can be overcome with information, skills and the right technology. (The outputs of well directed research and development). Similarly if the irrigator moves over into a new enterprise, with new technology these barriers can be even more significant. In both cases resources are required. This project will provide a mechanism for change and The Australian Government needs to assist by providing resources significant enough to drive change. (Fig. 1)

Change will occur with the combined effect of three things;

1. There is a want to change in response to an opportunity or a problem
2. There is a plan or a mechanism for change.
3. There are resources available to implement the change.

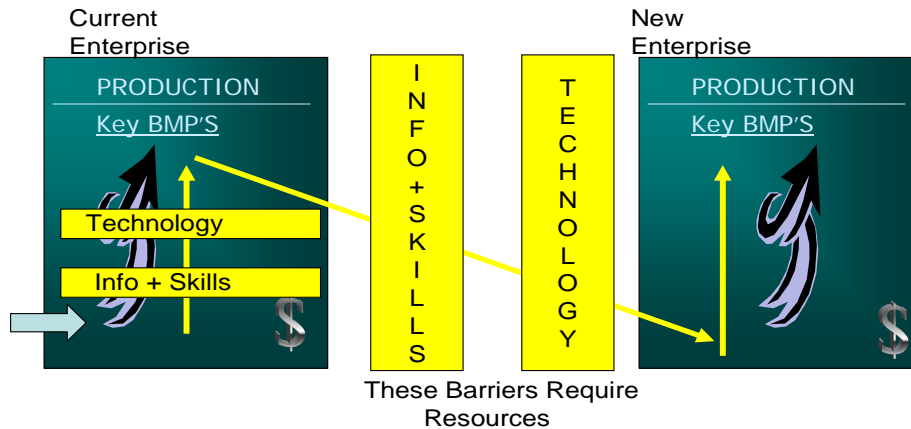


Figure 1.

The broader implications of change within irrigation communities are very much related to the movement of water out of irrigation areas. The infrastructure ownership costs of water delivery businesses whether large or small are very significant. Many rural communities are dependent on the industries that utilise water. It is clearer still in the last drought that vibrant communities can survive where they have access to water. Exit fees, and other appropriate mechanisms will allow time for rational decisions to be made in the open water trading environment that is developing. This is an absolutely critical issue and needs thorough stakeholder engagement.

Any notion that it is necessary or desirable for the irrigation industry to switch entirely over to high value enterprises is flawed. Horticultural and viticultural markets would not cope with such change and the implications relating to the water security requirements of such high capital-base enterprises are significant indeed. Sustainable water use in Australia demands that we have a balance of efficient, annual based enterprises that can move in and out of production according to available water; and efficient perennial based enterprises that have access to high security water year in year out.

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