13 January 2011

Committee Secretary
Senate Standing Committee on Rural Affairs and Transport
PO Box 6100
Parliament House
CANBERRA ACT 2600

Re: Inquiry into the Management of the Murray-Darling Basin

Thank you for the opportunity to make a submission to this important Inquiry. We also appreciate the extension of time to make this submission.

Irrigation Australia Limited (IAL) is a national organisation representing the whole of Australia's irrigation industry, including both rural and urban irrigation. IAL has a broad membership base such as major water providers, corporations that manufacture and supply irrigation equipment, organisations, consultancies and individuals who design, install, maintain and use irrigation systems, and educational and research institutions. Our members and the communities they serve will be directly affected by the proposed Basin Plan, and therefore we have a keen interest in both the direction of the Basin Plan and Government's implementation of the Plan and future management arrangements for the Basin.

IAL acknowledges the need for a Basin Plan to return the Basin to sustainable levels of extraction, and also importantly to provide greater long term certainty for the irrigation industry. However, we also believe the final Basin Plan needs to be properly justified, and ensure efficiencies are being driven across all water users, including environmental water managers. Further, we believe the final Basin Plan needs to be accompanied by a complementary Plan for Basin Communities that drives a series of co-ordinated measures to assist the irrigation sector and dependent Basin communities to adapt to the implications of the Basin Plan.

We have submitted at Attachment B, for this Committee's reference and consideration, a copy of our submission made to the current House Standing Committee on Regional Australia Inquiry into the impact of the Murray Darling Basin Plan which has some similar Terms of Reference. In particular, the submission to the House Standing Committee on Regional Australia addresses the impacts of the proposed Basin Plan on the irrigation services sector as well as outlining some of the water use efficiencies that can be readily achieved through improved irrigation infrastructure and improved irrigation practice. Attachment B also includes a number of recommendations to address these matters, which we would ask this Senate Committee to also consider.

We have also attached an addendum at Attachment A to address several of the additional, specific Terms of Reference of this Senate Inquiry, namely the Terms of Reference to inquire into opportunities for a national reconfiguration of rural and regional Australia against the background of the Basin Plan and the science of the future, particularly the option for using alternative basins.

Should you wish to discuss any matters raised in this submission please feel free to contact me.

Yours sincerely

CHRIS BENNETT
Chief Executive Officer

Attachment A: IAL Addendum Submission to the Senate Standing Committee on Rural Affairs and Transport inquiry into the management of the Murray Darling Basin

Attachment B: IAL Submission to the House Standing Committee on Regional Australia for the inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia

ATTACHMENT A

IAL Addendum Submission

for the Senate Standing Committee on Rural Affairs and Transport

Inquiry into the Management of the Murray Darling Basin

Introduction

This addendum should be read in conjunction with IAL's Submission to the House Standing Committee on Regional Australia's inquiry into the impacts of the Murray Darling Basin Plan which, inter alia, briefly outlines the opportunity for water savings through improved irrigation sector efficiencies in the Basin. A copy of that submission is at Attachment B.

The focus of this addendum is the Inquiry Terms of Reference to examine:

> *the opportunities for national reconfiguration of rural and regional Australia and its agricultural resources against the background of the Basin Plan and the science of the future;*
>
> *and*
>
> *options for water savings including use of alternative basins.*

In particular, this addendum briefly examines the scope and need for new irrigation areas to be developed to reconfigure and diversify the irrigation industry for the future.

Please note that while this addendum argues for the need for a national irrigation strategy, including the need to expand irrigation beyond the Basin, that IAL supports maintaining as much as possible of the existing irrigation activity in the Basin. That is, we are not arguing for dismantling of irrigation enterprises and dependent Basin communities. Rather, new and additional irrigation opportunities beyond the Basin would offer choice to affected irrigators, offset productive losses, and reduce risks to the irrigation sector through geographical diversification.

IAL would be pleased to provide additional information to the Committee or to present our submission in person to the Committee.

Need for New Irrigation Areas

There are over 40,000 irrigated farms across Australia (ABS, April 2010), with the vast majority (in the order of 65%) of the irrigated land area located in the Murray Darling Basin as shown in Figure 1 below.

While the Murray Darling Basin has served the nation well as Australia's primary food bowl, and will continue to do so with appropriate responses to the Basin Plan as outlined in Attachment B, there is also a need to seriously consider expansion of Australia's irrigation potential beyond the Murray Darling Basin. These reasons in summary are:

1. in relation to the Basin Plan itself to:
    a. provide choice for those individuals adversely impacted by the Basin Plan, within an industry with which they are familiar and skilled;
    b. to offset any residual national economic implications from reduced productivity levels;

2. to diversify the locations upon which we are dependent on irrigated agricultural production as a national risk management measure, as has been starkly apparent from both drought conditions over the past decade and recent flooding events in Queensland and throughout parts of the Basin;

3. related to risk management from point 2 above, to respond to predicted impacts of climate change – with the Garnaut Climate Change Review 2008 indicating that irrigated agricultural production in the Basin would decline by 92% in a "no mitigation scenario" by 2100 and between 6 and 20% under a range of mitigation scenarios. While most areas across Australia will be impacted by lower rainfall and runoff, this may not occur concurrently. So, a diversity of productive areas would be a sensible insurance against predicted climate change, and allow development of areas less affected and/or enhanced by climate change;

4. to simply contribute to economic growth of this nation provided it is done so within the sustainable limits of the resource base, and learning from lessons of the past and more contemporary research and development; and importantly;

5. in the longer term to position Australia to develop its irrigation capacity to meet looming global food security needs which, argued the science communicator Julian Cribb, will require a doubling of food production to feed a global population of 9.1billion people demanding higher nutrition levels, but with only half the necessary water available (IAL: Conference 2009: Notes available at http://www.irrigation.org.au/IAL_IDC_Conf_2009/CRIBB,%20Julien%20FINAL%20Irrigation%20&%20drainage%20conf%20Oct09.pdf).

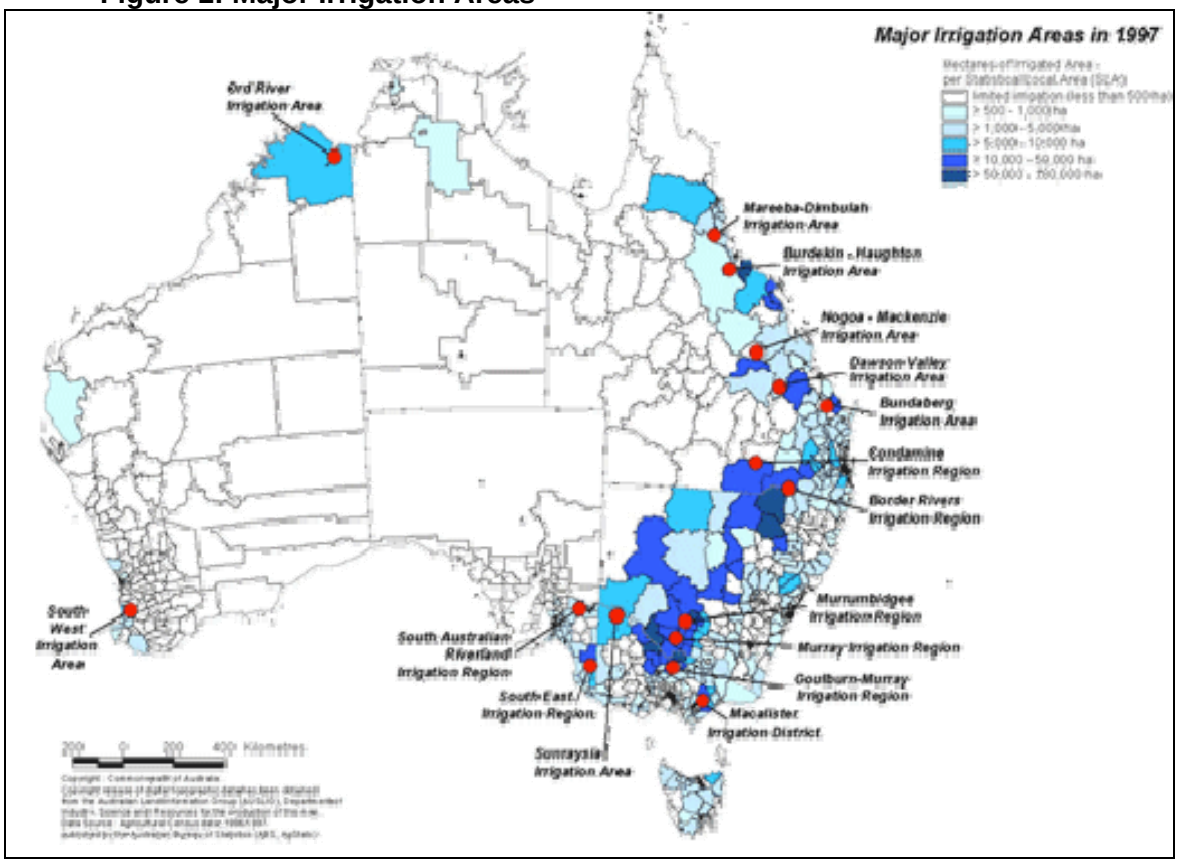
Clearly there is a legitimate case for expanding Australia's irrigated agricultural capability beyond the Basin, not just as part of the response to the Basin Plan, but irrespective of the Basin Plan as a nation building opportunity, as an important risk management measure for our agricultural production capacity, and as part of our longer term global responsibilities and opportunities. However, new irrigation areas should be developed as part of a national irrigation strategy that co-ordinates these objectives.

IAL recommends that a National Irrigation Strategy be developed to set out the sustainable pathway for expanding Australia's irrigation potential which ensures a co-ordinated national approach, and amongst many other social and economic elements, includes:

- **a comprehensive assessment of additional irrigation areas that may be suitable for future irrigation, and preservation of these areas for that purpose;**
- **a planning framework to guide consistent consideration of historical lessons, and contemporary research and development opportunities; and**
- **performance benchmarks for production and water use to ensure the output from the resource base is optimised.**

Some of these elements for a National irrigation Strategy are briefly discussed below.

Figure 1: Major Irrigation Areas



Source: (http://www.anra.gov.au/topics/irrigation/extent/index.html#areas_irr

Opportunities for New Irrigation Developments

The primary known opportunities for new irrigation developments are in Northern Australia and include:

i) approximately 600GL/year groundwater said to be available for new consumptive uses across the Timor Sea, Gulf of Carpentaria and Northern North-East Coast drainage divisions (http://www.nalwt.gov.au/files/NLAW.pdf) as identified by the Northern Australia Land and Water Taskforce in 2010; and

ii) the current Ord Irrigation Stage 2 expansion of the irrigation area by over 35%.

Apart from these opportunities, there is unlikely to be any silver bullets for new major irrigation area developments. Rather, there are likely to be smaller irrigation opportunities dispersed across Australia, including:

- localised smaller scale expansions of existing irrigation schemes to maximise economic use of existing infrastructure;
- investment in industrialised, higher technology horticultural production such as that being trialled at the Chisholm Institute at Cranbourne near Melbourne, as described in Attachment B; and
- preserving agricultural land in close proximity to major urban centres, as discussed in a little more detail below.

The preservation of peri-urban irrigated agriculture needs greater consideration in this debate for many reasons such as reduced carbon footprint embedded in the transportation of food products, and the fact there is a larger local labour supply close to urban centres which can be problematic in some remote, rural areas. But perhaps the most important reason is that irrigated agriculture is, and needs to be perceived as, a fundamental component of sustainable urban communities not only through meeting food and fibre needs, but also by productively utilising large volumes of recycled urban wastewater. The water resource has high security even during drought, and otherwise causes significant environmental impact through discharge to rivers and oceans.

While there are a growing number of examples of recycled water schemes serving peri-urban irrigation activity such as irrigation such as the Virginia and Wilunga Basin pipelines in South Australia, there remain many further opportunities to expand irrigation activity near urban centres. Perhaps the biggest of these opportunities would be for greater utilisation of the Western Corridor recycling scheme in SE Queensland for irrigated agriculture in peri-urban areas around Brisbane, now that the scheme is not being used for indirect potable re-use as had been originally planned. Sydney too has many peri-urban irrigation opportunities on relatively productive soils, with significant volumes of urban wastewater in close proximity.

Many peri-urban irrigation opportunities are threatened by urban development, as urban land is of higher capital value. However, the capital value of urbanising the land is realised only once, whereas peri-urban agricultural land can provide a perpetual economic contribution. However, the market tends to recognise the one-off, immediate capital value of these lands for urban development rather than the sustainable economic returns over the longer term. Therefore, to realise opportunities for peri-urban irrigated agriculture, the market needs to be better regulated through land use planning mechanisms that preserve these lands as fundamental components of a sustainable urban form.

IAL recommends that the Committee consider opportunities to expand serious peri-urban irrigated agricultural opportunities near major urban centres, including urban wastewater recycling infrastructure and land use planning mechanisms to preserve peri-urban agricultural land.

How to Develop New Irrigation Areas

New irrigation areas should be planned and developed within stringent, nationally defined planning frameworks which seek to:

- complement and diversify economic activities and opportunities of rural and regional Australia;
- adopt the most contemporary information, research and development initiatives for water, irrigation and agronomic management;
- ensure the resource base is sustainable, including scientifically robust sustainable water yield assessments and long term agronomic capability of soil to sustain irrigation; and
- ensure the resource base is used on individual irrigation farms to its optimum potential within these constraints. This point is discussed further below.

Optimising the use of the resource base would be achieved through individual developments being required to meet specified performance benchmarks. Performance benchmarks may include, but not be limited to, measures such as irrigation efficiency (ML/ha) and production efficiency (tonnes/ha).

One may argue that the market will drive these efficiencies, without the need for government imposed frameworks that set out performance benchmarks. However, the fact that water savings of up to 30% can be readily achieved now, and that these water savings are often coupled with increased production levels as shown in the examples listed in Attachment B, suggests that the market alone does not drive the optimisation of the available resource base in existing irrigation activities. There are other factors that must affect irrigator's decisions to invest in the efficient use of the resource base.

Government then clearly has a role in driving these resource efficiencies through assisting with the achievement of minimum performance expectations for new irrigation activities.

The achievement of stringent performance benchmarks will require three elements, namely:

- capacity and willingness to adopt new research and development outputs;
- utilisation of best available technologies; and
- utilising the professional irrigation services sector that is required to bring all the elements of good, professional irrigation practice together – agronomic data and assessment of plant, soil, water interactions to maximise crop growth to achieve production benchmarks, and design, installation, operation and maintenance of irrigation systems to achieve and sustain irrigation efficiency and water use benchmarks.

An irrigation planning framework needs to be established to ensure new irrigation developments respond to the lessons of the past, are planned, implemented and operated using best available information and technology to achieve stringent performance benchmarks.

We have outlined how this can be achieved in Attachment B.

IAL is willing to work with governments and commodity groups to develop a planning framework for new irrigation developments.

ATTACHMENT B

Submission to
The House Standing Committee on Regional Australia
Inquiry into the
Impact of the Murray-Darling Basin Plan in Regional Australia

Summary

Introduction

- Irrigation Australia Ltd (IAL) believes this is the time for the irrigation industry to demonstrate leadership and put on the table long term, sustainable and ultimately positive solutions, not only for the environment but also for those communities that depend on a healthy Murray Darling Basin.
- That means solutions not only for irrigators on-farm, but also for the towns and people whose social and economic fabric is built around the Basin. Consider this: for every 100ML of water used for irrigated horticulture, four jobs are created at the farm gate.
- But the Basin Plan does not just affect the irrigation sector or Basin communities. This matter has implications for all Australians who depend on the Basin for the bounty it produces. This is a matter of national interest. And at stake is the food bowl of the nation.
- The Committee should feel comfortable that there is broad support in published opinion polls for changes to sustainable water management in the Basin.
- However, like Climate Change, many in our communities want action, but no-one wants the electricity turned off altogether. The same middle way must be found in relation to water management in the Basin.
- There is clearly a broad national interest with this Committee making the right, balanced recommendations to sustain a productive base and the communities that enable this productive base for the benefit of the nation.
- Consequently, at the centre of a balanced set of recommendations, it is critically important that a final Basin Plan be accompanied by a **Plan for Basin Communities** that clearly outlines the adjustment path forward for Basin communities affected by the Plan. It should co-ordinate government programs across portfolios and agencies.

Irrigation Australia Ltd (IAL)

- We, at IAL, are not partisan political lobbyists. Rather, we are apolitical and passionate advocates for technically sound information for our members and their communities and the long term sustainability of the Murray-Darling.
- IAL seeks to lead the development of a professional irrigation industry embracing best practice to underpin healthy, sustainable urban and rural communities and lifestyles through the provision of technical irrigation training, certification and information services.

- To this end the IAL is willing to take on a leadership role and work with the Government, the Opposition, the Greens and the Independents to bring together proven and benchmarked outcomes that will finally deliver the consensus that has been missing from the debate thus far, and to be an independent sounding board about the practicality of ideas or directions for the irrigation industry.

- If adopted, IAL's recommendations will lead to:
  - a complementary Basin Plan providing clear mechanisms for developing and co-coordinating social and economic adjustment plans across Ministerial portfolios and relevant government agencies;
  - maintenance of productivity but with a reduction in water usage; and
  - more certainty about how taxpayer's money is being spent on water efficiency measures through a well trained, competent irrigation sector operating with appropriate checks and balances on the outcomes of public investment.

- IAL can help Government ensure its Basin Plan delivers greater longer term certainty for the irrigation industry and the communities that are supported by it. However, there is much more work to be done by Government on the proposed Basin Plan to justify the proposed environmental water needs and to assess the socio-economic impacts of this transfer on the productive irrigation base that underpins many Basin communities.

The Industry

- Modern, efficient, high productivity on-farm irrigation is supported by an extensive chain of professional irrigation services from research and development of new technologies, irrigation system design, installation and operation and maintenance services.

- The whole irrigation services chain needs to be considered as one sector to deliver water use efficiencies to meet reduced sustainable diversion limits whilst maintaining the productive economic base for Basin communities.

- IAL's Certified Irrigation Professionals scheme shows that there are 507 individual people currently recognised as competent irrigation professionals across the Basin states.

- Ironically there is much current uncertainty within the irrigation services chain, at a time when these services are fundamental to delivering the practical water efficiencies that will be needed to meet the challenges of the reforms imposed by the Basin Plan.

- Government has a role in restoring certainty for, and building this irrigation services sector, to practically support the implementation of the Basin Plan through delivering on-ground water efficiencies funded through *Water for the Future* programs.

Water Savings Measures

- Water savings are available across environmental water needs, water storage management, and over 27% water savings are available in urban landscapes in the Basin, approximately 30% water savings from improving water delivery systems, and up to 50% water savings from improvements to on-farm irrigation infrastructure and practice. Water savings should be further explored across all these areas of water management.

- IAL, and its members, can help deliver these irrigation related water savings through improved irrigation systems and practices to meet specified performance outcomes, co-ordinating and/or delivering training and Certification of irrigation system designers, installers, auditors and operators, and new technology applications.

ATTACHMENT B CONT'D

Roles in Developing and Delivering Water Efficiency in the Basin

- Government has a clear role in setting policy frameworks to deliver sustainable water resource management, and to assist adjustment through properly directed for the research and development of new water efficiency measures and encouraging the adoption of these measures through well structured and targeted funding programs. IAL believes the Government's funding arrangements for on-farm irrigation efficiency need to be briefly reviewed in light of the Basin Plan, and that Government needs to urgently determine and fund an irrigation research and development co-ordination body, and improved extension services to assist the adoption of good research outcomes.

- the agricultural sector, particularly representative organisations, have a leadership role to provide accurate information about the Basin Plan and government funding assistance to support adjustment, but also to promote the irrigation industry as a progressive and professional sector.

- research and development has a role to play, where extension services are properly funded to promote adoption of new technologies and contemporary best practices.

ATTACHMENT B CONT'D

Submission to
House Standing Committee on Regional Australia
Inquiry into the
Impact of the Murray-Darling Basin Plan in Regional Australia

1. About IAL

Irrigation Australia Ltd (IAL) is a national, not-for-profit, member based organisation representing the whole of Australia's irrigation industry services chain, including both rural and urban irrigation.

IAL has over 700 members, covering all aspects of the irrigation industry from major water providers, corporations that manufacture and supply irrigation equipment, organisations, consultancies and individuals who design, install, maintain and use irrigation systems, and educational and research institutions. We therefore genuinely represent the whole irrigation services chain, including off-farm irrigation services that are likely to be significantly affected by the proposed Basin Plan, but which are so vital to achieving significant water savings.

IAL seeks to lead the development of a professional irrigation industry embracing best practice to underpin healthy, sustainable urban and rural communities and lifestyles through the provision of technical training, certification and information services.

A summary of IAL services is listed at Attachment A1.

2. IAL Position on the Murray Darling Basin Authority's Guide to the Basin Plan

IAL acknowledges the need for a Basin Plan to return the Basin to sustainable levels of extraction, and also to provide greater long term certainty for the irrigation industry. IAL also supports (in-principle) the proposed phase-in of sustainable diversion limits (SDLs) and the risk allocation approach proposed by the Murray Darling Basin Authority ie 3% climate change borne by surface water entitlement holders and the residual borne by the Commonwealth. However, IAL also considers that the proposed Basin Plan contained in the Authority's Basin Plan Guide to the proposed Basin Plan does not at this stage:

- properly justify the quantum of water being proposed for environmental water needs;
- demonstrate that environmental water can be used to achieve the defined environmental objectives; and
- is not in a form that is readily understandable to the whole community.

IAL has formed this view because the Authority's Guide:

- is based on significant scientific uncertainty about the environmental water needs, and therefore warrants precaution in how it may be used or implemented to transfer water away from the current productive irrigation base;
- lacks clarity about the accounting of existing and proposed water savings on the final sustainable diversion limits, and therefore the impact on the irrigation sector and individual water entitlement holders;

- includes inadequate emphasis and investigation of water savings from other sectors such as environmental works and measures, water storage management and critical human needs (urban water use); and
- needs more thorough analysis of likely socio-economic impacts.

Further, IAL is of the view that the final statutory water plan – the Basin Plan - needs to be developed and released in conjunction with a complementary, co-ordinated whole-of-government **Plan for Basin Communities** that clearly outlines a pathway for socio-economic adjustment for affected Basin communities, including:

- the Commonwealth's *Water for the Future* funding programs for irrigators, but with some refinements outlined in section 3.3 of this submission;
- new investment in regional development projects to offset economic impacts of the Basin Plan in particularly affected locations and communities, and to diversify the Basin economies; and
- social dimensions that includes education and training opportunities to support the productive base of the Basin, and social support services.

Given this, we are very pleased that the Government has initiated this Inquiry by the Standing Committee on Regional Australia, and that there is now some opportunity to consider the wider implications of the Basin Plan.

Recommendation 1

IAL's first recommendation is that the Committee endorse the need for, and the concept of, a **Plan for Basin Communities** - to complement the statutory Basin Plan - to give effect to a clear mechanism for developing and co-ordinating socio-economic adjustment policy and actions across Ministerial port folios and government agencies.

The remainder of this submission addresses the Terms of Reference of this Inquiry, and makes recommendations largely about irrigation related matters that should be addressed in a Plan for Basin Communities.

IAL would be pleased to expand on any points made in this submission for the Committee. Further the IAL believes it is well placed and experienced to be an independent sounding board to Government on issues impacting on the irrigation sector and the communities that support it and are supported by it.

3. IAL Responses to Inquiry Terms of Reference

3.1 Impact of the Proposed Basin Plan on regional communities, including agricultural industries, local business activity and community wellbeing

The irrigation sector is far more than the irrigator on the land. Indeed, Horticulture Australia Limited estimates that for every 100ML used for irrigated horticulture that four jobs are created at the farm gate. Many of these jobs will be within the irrigator services industries included in IAL's membership.

Modern, on-farm irrigation must be supported by an extensive, professional irrigation services sector that includes:

- research and development seeking new and improved technologies and practices to increase productivity and irrigation water use efficiencies;
- irrigation agronomy services that can analyse and advise on the dynamics of soil, water and plant interactions to optimise productivity through best practice fertiliser and water use, and soil and crop management on a site by site basis;
- irrigation system designers that engineer irrigation systems capable of delivering precise water volumes to meet crop water needs, and apply that water in the most efficient, uniform manner;
- irrigation equipment retailers that provide suitable and high quality irrigation system components;
- irrigation system installers that are capable of installing systems in accordance with engineering designs, and commissioning those systems to meet design performance expectations; and
- irrigation system managers and operators that understand the irrigation system and operation and maintenance requirements, and irrigation scheduling, to maintain water efficiencies over time.

This whole irrigation services sector chain is necessary for a modern irrigation farm to deliver high crop productivity and water and energy efficiencies.

Recommendation 2

The whole irrigation services chain from irrigation agronomy and system design, to irrigation operation needs to be considered by the Committee, and in government program design, as one sector.

This whole chain will deliver efficiencies that will be fundamental to achievement of reduced sustainable diversion limits (SDLs) in a Basin Plan whilst maintaining as much of the productive economic base as possible.

Indeed this recommendation is consistent with the recent report of the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) Expert Working Group titled *Challenges at Energy-Water-Carbon Intersections* (October 2010) which stated under "outcomes in the irrigation domain":

> *Various pieces of a smart water supply chain have been implemented, but the full potential cannot be realised until the complete smart water supply chain is implemented from the source to the crop.*

<u>IAL's Certified Irrigation Professionals Scheme</u>

IAL operates a Certified Irrigation Professionals scheme, to recognise competency in the irrigation service vocations listed above, which provides some insight into the current magnitude of the irrigation services sector, although ideally there would be growth in some vocations to properly and competently service Government's immediate policy and funding initiatives. There are 507 Certified Irrigation Professionals located in the Basin states. The number of each type of Certified Irrigation Professional in each Basin jurisdiction is presented in Table 1 for the Committee's reference.

IAL's Certification scheme is a robust scheme, with appropriate checks and balances to ensure competency. To gain Certification, Certified Irrigation Professionals need to have two years industry experience, hold statements of attainment for specified competencies from a registered training organisation, and comply with a continuous professional development program in order to renew Certification. The Certification scheme is administered by IAL, and is over-sighted by an independent Certification Board that reports directly to the IAL Board.

The Certification scheme has been used by several state irrigation efficiency funding programs eg NSW Water Smart Farms in western Sydney as part of the Hawkesbury Nepean River Restoration program, and by Queensland in its on-farm component of its Healthy Headwaters program. However, IAL believes this Certification scheme could be better utilised by all government irrigation funding programs to ensure professionalism involved in funded projects, but also importantly, to provide the incentive for further training in irrigation vocations that would leave a longer term legacy of a larger and more professional irrigation services sector that could continue to serve the irrigator community beyond the term of the funding.

Table 1: Numbers of Certified Irrigation Professionals in Basin States

Irrigation Sector Service	**Basin States and Territories**				**Total Across Basin States**
	Qld	NSW	Vic	SA	
Certified Irrigation Designer	17	20	29	15	81
Certified Irrigation Agronomist	5	14	2	4	25
Certified Irrigation Installer	5	12	6	1	24
Certified Irrigation Contractor	1	3	2	2	8
Certified Irrigation Manager	1	2	18	-	21
Certified Irrigation Operator	7	16	2	30	55
Certified Irrigation Retailer	24	10	4	3	41
Certified Irrigation Meter Installer	90	47	114	1	252
TOTALS	150	124	177	56	507

Despite the fundamental need for these services as part of the significant reform process of the Basin Plan, the irrigation services sector is currently facing very insecure times.
This is due to a combination of the following factors:

- uncertainty about the final Basin Plan and the likely extent of reduction in sustainable diversion limits (SDLs), and therefore the remaining productive base that will rely on these services in the long term. While there are funding opportunities available for irrigators for on-farm efficiency that provide them with a range of choices, the broader irrigation services sector within the Basin communities has no control over the response of individual irrigators to the Basin Plan, who may invest in efficiency, but also may participate in state and Commonwealth entitlement buy back schemes, revert to dryland farming or exit the farming sector entirely;
- while obviously welcome, the funding under the Commonwealth's *Water for the Future* programs is perversely affecting normal investment decisions of irrigators, in some cases deferring normal asset renewal investment until funding opportunities become available, which is causing further uncertainty in the irrigation services chain; and
- concurrently there is strong competition for the same or similar skill sets:
  - from potential expansions of the irrigation sector in WA – planned Ord stage 2, expected expansion of the Carnarvon irrigation area, and as noted in the WA State Water Strategy 2003, smaller developments possible at Gascoyne and Greenough based on groundwater resource development; and
  - in the mining and energy sector, where there are more certain and often higher incomes to be made.

It is ironic then that the irrigation services sector in the Basin should be subject to uncertainty at the very time that government and irrigators will most need the irrigation efficiency expertise available from these services, and require far more recognised practitioners to successfully deliver reform and funding initiatives.

Recommendation 3

IAL recommends that the Committee support a **Plan for the Basin Communities** that includes, inter alia, measures to provide greater certainty for the irrigation services sector, and to attract new people to the industry, including:

- more defined and targeted funding programs that formally recognise the need for competency in these services for funded projects – see section 3.3; and
- investment in irrigation training programs to ensure there are adequate numbers of competent irrigation professionals to enable practical responses to the Basin Plan, including ensuring training is accessible to regional communities, and that it provides a clear, and long term career pathway for professionals involved in the irrigation sector. This will require:
  - finalisation of irrigation training packages, including new units of competency under the national training framework;
  - development of delivery tools that overcome the relatively high training costs for the irrigation sector caused by the geographic spread and remoteness of the industry – through things like on-line training programs; and
  - subsidises for training places to make it an attractive proposition for both Registered Training Organisations to offer irrigation training, and for participants to select irrigation vocations; and
  - less formal training/mentoring programs for irrigators to assist them to successfully adapt to new technologies and practices – see section 3.3.2.

3.2 Options for water-saving measures

There are significant water savings to be made in five distinct areas of management across the Basin, namely:

1. environmental works and measures, and environmental water management plans;
2. water storages;
3. public open spaces across the Basin – accounted for under critical human needs;
4. water delivery systems; and
5. on-farm irrigation.

IAL's expertise lies particularly in the last three of these areas. Our focus is on irrigation management, which we have briefly expanded upon in subsequent sections.

Notwithstanding this, IAL believes there has been inadequate investigation and inclusion of potential water savings from environmental works and measures and water storage management in the determination of SDL's proposed in the Authority's Guide to the Basin Plan. For example, there are potential water savings like:

- improved efficiencies in environmental watering, as was achieved by the Mallee CMA in environmental watering near Lake Hattah in or about 2007, through minor diversions and pumping to selected River Red gum stands – rather than inundation events over larger areas. IAL expects there are many similar engineering solutions that could be developed locally to undertake environmental watering events that meet ecosystem function needs at environmental assets in the Basin with less water; and
- significant savings from improved management of Menindee Lakes – estimated at up to 200GL/yr (www.environment.gov.au/water/policy-programs/srwui) and through innovative proposals that have been made such as the Twin Lakes proposal for Lake Alexandrina that could save significant evaporative losses.

The irrigation sector will be expected to make significant changes in practice or technology, or to sell entitlements in order to meet SDLs in a Basin Plan. It is only reasonable that all sectors find efficiencies too, to preserve as much of the economic base as possible whilst still achieving the environmental objectives.

Recommendation 4

IAL recommends that the Committee support a call for all reasonable water savings from environmental works and measures, environmental watering plans and improved water storage management, to be determined and accounted for in environmental water needs prior to setting SDLs in a Basin Plan.

3.2.1 Urban Landscapes in the Basin

While we recognise that urban landscapes use a fraction of the water volumes being considered for environment and agriculture in the Basin, we consider it is important in terms of symbolic support to highly affected industries, that practical efficiencies be made in all sectors, including in public open space management in urban areas throughout the Basin. In this regard, IAL is aware that the average distribution uniformity (a key measure of urban irrigation system performance) across Australia is approximately 55%, compared to an industry standard of 75% as published in the Water Services Association of Australia and IAL's *Urban Irrigation: Best Management Practices* in May 2006.

The distribution uniformity of most urban irrigation systems can be readily and cost effectively improved by undertaking performance audits, maintaining the system according to original design (maintaining sprinklers, checking pressures etc), and watering according to an irrigation schedule designed to meet a fit-for-purpose outcome for the open space area. The equivalent water saving that can be achieved from improving DU from 55% to 75% at public open space is 26.7%.

Recommendation 5

IAL recommends that a **Plan for Basin Communities** include a co-ordinated program to achieve minimum urban landscape water use efficiencies across the Basin urban centres. Such a program could be modelled on the SA Irrigated Open Space Program (IPOS).

IAL would be willing to co-ordinate such a program for Government.

3.2.2 Water Delivery System Savings

There are much water savings that have been made from improving the efficiency of water delivery systems across the Basin over a number of years, especially in the lower connected Basin as evidenced by examples such as:

- upgrades by the Renmark Irrigation Trust to pipe open channels in the 1970s;
- through to more modern examples such as the Wimmera–Mallee pipeline replacing open channels across south western Victoria; and
- two stages of the Northern Victoria Irrigation Renewal Project (NVIRP) which involves a combination of piping or lining open channels, channel automation to more precisely manage volumes and timing of water delivery to properties, and replacing inaccurate dethridge wheels with meters that meet national metering standards.

The water savings from this type of work are substantial with savings from both stages of the NVIRP estimated to be over 400GL/year alone, and the Wimmera Mallee pipeline in the order of 100GL/year. This quantum of water savings will obviously be important contributions to:

- achieving the quantum of SDL reductions reflected in the Guide to the proposed Basin Plan;
- to position the industry in the longer term to meet climate challenges; and
- importantly to demonstrate to the wider Australian community that the irrigation industry is operating at highest efficiency possible.

IAL refers the Committee to water service providers for more detailed costings, and cost benefit analyses of these types of water savings projects.

3.2.3 On-Farm Irrigation Efficiency

On-farm irrigation efficiency gains will obviously be a key component for responding to the Basin Plan, no matter what quantum of SDL reduction is ultimately required by the final Plan. As indicated in Section 3.1, there is an irrigation industry services sector ready and willing to assist governments to implement on-farm efficiency funding programs, and to tailor efficiency solutions for individual irrigators.

There is a raft of examples of on on-farm water use efficiency gains, many involving work that has not been written up, is not published or that has not been publicly available. These case studies also have a varying range of rigour in the measurement of water savings and cost information. Nonetheless, we have included a summary of a few documented examples of on-farm irrigation efficiency projects in Table 2 to illustrate the range of water savings, and economic information where available for investments in on-farm irrigation efficiency. These examples demonstrate that there is consistently in excess of 30% water savings to be made, and commonly up to 50%, through investments in improving irrigation systems and practices across a diversity of irrigated commodities. This quantum of savings is consistent with more anecdotal case studies.

Unfortunately the depth of data relating to economics and cost-effectiveness is patchy, probably for commercial reasons and the fact that capital costs will vary significantly pending irrigation system type, crop type(s), soil type, topography, water quality etc. However, the examples do show that investments for water efficiency are also often coupled with significant increases in crop yield such as a 30% increase for the Gwydir River pecan nut example, up to 100% increase in pasture production for the WA dairy example, and 40% increase in citrus production.

Clearly, there remains incredible scope for irrigators to adopt on-farm efficiency measures to respond to reduced SDLs in the Basin Plan, through reducing water needs and increased production efficiency. IAL therefore welcomes Government's funding commitment to on-farm irrigation efficiency infrastructure, but subject to a brief review of the funding as outlined in Section 3.3 of this submission.

The challenge will be to encourage irrigators to participate in these funding programs. IAL believes this can be assisted by making irrigators more comfortable about the evidence base for achieving higher water use efficiencies and water savings whilst maintaining productivity. To do this there needs to be:

- far more rigorously measured case studies available across a whole range of geographic areas and crop and irrigation system scenarios, and that evidence being more readily publicly available; and
- demonstration projects across different commodities and regions so that irrigators can witness the practical implementation of new infrastructure and practices, and have the opportunity to discuss the challenges and solutions of change directly with irrigation managers that have made these changes.

Indeed, the the PMSEIC Expert Working Group report titled *Challenges at Energy-Water-Carbon Intersections* (October 2010) stated:

> *A demonstration project in a selected set of irrigation systems would be a sound investment. Given that on-farm systems are an important link in the supply chain, funds could be sourced from the $5 billion committed to on-farm water efficiency in the Water for the Future initiative.*

Recommendation 6

IAL recommends that Government fund work to ensure there is an adequate evidence base to make irrigators comfortable about participating in on-farm efficiency funding programs. This work would include:

- a series of irrigation efficiency and water savings demonstration projects across a range of irrigated commodities and Basin Regions; and
- compilation of case studies with rigorous technical measurements of irrigation efficiency, water savings, capital and operating costs, and productivity changes, involving both desk top compilation and measurement at demonstration projects.

IAL, as a technically based, not-for-profit, irrigation organisation is well placed to lead this work for Government.

Table 2 – Examples of Water Savings from Investment in On-Farm Irrigation Efficiency

Where	Description	Water Savings/ Irrigation Efficiency	Economics	Source
NSW. Border Rivers/Gwy dir.	Converted 200 ha surface irrigation to centre pivot irrigation on mixed Crops – barley, wheat, sorghum and cotton.	34% water saving	$3,000 per hectare, with estimated 5 to 7 yr return	NSW I&I. http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/360940/Case-Study_Converting-a-furrow-irrigation-system-to-a-centre-pivot_I-and-I_Final.pdf
NSW. Border Rivers/Gwy dir.	Compared 75ha plot of Pecan nuts converted from surface to drip irrigation	50% water saving	Approx $9500/ha (calculated from information in source). 30% increase in yield	NSW I&I. http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/360940/Case-Study_Converting-a-furrow-irrigation-system-to-a-centre-pivot_I-and-I_Final.pdf
WA - Harvey Water Irrigation Area	Two year study of changing from surface irrigation to centre pivot irrigation on dairy pasture	About 30% water saving	No costings provided. 54% increased pasture yield in Year 1 and 100% pasture yield in Year 2	Land & Water Australia. 2006. *Improving Productivity and Sustainability in irrigation. Case Studies of Success.*
NSW. Leeton	Independent trial by Dean Morris on change from surface to drip irrigation on citrus	About 50% water saving	No costings. 40% increase in fruit production	Land & Water Australia. 2006. *Improving Productivity and Sustainability in irrigation. Case Studies of Success.*
NSW. Murrumbidgee Irrigation Area	McGowan International study of irrigation efficiencies of contour systems for rice, pastures and other crops through improved surface irrigation practice - laser graded, landformed, parallel, drainage recycling	Application efficiency increased from approximately 55% to between 82 and 88%. Similar findings were observed in US studies, showing about 40% water savings.	No costings provided.	North.S. 2008. *A review of Basin (Contour) Irrigation Systems I: Current design and management practices in the Southern Murray-Darling Basin, Australia*. CRCIF.

In addition to straight water use efficiencies, there are also many on-farm practices that can be made to increase production efficiencies (ie yield/ML) that should be more widely adopted to offset the economic impacts of reduced SDLs, and maintain the productive irrigation base of the Basin economy. Many of these on-farm practices relate more to innovative changes in agronomic and irrigation practices, rather than infrastructure investments alone. While there are many good examples, perhaps one of the most stark case studies is provided by a field trial on almond nutrition and irrigation requirements in the early 2000's in the Riverlands in South Australia. This study demonstrated that with the use of pulse irrigation techniques and soil moisture monitoring, combined with close nutrient management and crop management (such as dormancy breaks) that they were able to increase yields from an average grower benchmark of about 2500 kg/ha to 5000 kg/ha (Assaf, Watters, Kennedy, and Bennett. 2005. *Developing Optimal Nutritional and Irrigation Requirements for Almonds*).

The point of this is that, while we welcome Government's investment in on-farm water use efficiency infrastructure, we also consider there is much more than can be done to contribute to maintaining the productive base generated by the irrigation sector in the Basin. This can be achieved through:

- continued investment in research and development of higher productivity practices;
- providing funding assistance to encourage growers to take risks to adopt best, most contemporary agronomic and irrigation practices ie not necessarily infrastructure; and
- funding extension services to transfer irrigation water use and production efficiency information between regions and between irrigation commodity groups. In particular, the extension needs to:
    - provide the practical link between research and development outcomes and on-farm practice to enable a contemporary knowledge base amongst irrigators;
    - build the bank of good, quantitative case studies on on-farm irrigation efficiency projects to give confidence to growers about the evidence base, including undertaking more rigorous measurements of improvements in irrigation efficiency, water savings, productivity increases and life cycle cost-effectiveness of efficiency investments as set out in Recommendation 6; and
    - promote efficiency funding opportunities, training, and the use of competent irrigation services to support adoption of on-farm irrigation efficiency measures.

Recommendation 7

IAL recommends that the Committee support additional funding programs to:

- encourage adoption of most contemporary agronomic and irrigation practices; and
- extension services to support the uptake and adoption of most contemporary agronomic and irrigation practices.

In addition, there is much scope for developing new high-end horticulture businesses that are highly productive and extremely water efficiency. For example, there is a trial industrialised Controlled Environment Horticulture Glasshouse facility that has been built by Chisholm Institute in Cranbourne, near Melbourne, as a training and demonstration facility for students and for higher level management and training purposes. The glasshouse itself covers 1500m^2 and is run with a climate control computer which manages temperature, humidity, shading and nutrient enriched irrigation.

The water management system is a demonstration in itself, essentially being a closed system. Water is collected in to tanks before being treated with UV radiation and then treated to correct salinity and pH levels for the crop types. Irrigation is precisely applied using a combination of factors such as slab moisture content, slab drain rates, and measured transpiration rates of the crop and radiation levels. This gives precision application to all irrigation operations.

Tomato and capsicum crops are currently being grown in the Chisholm glasshouse. Based on this initial trial, the crops exhibit faster growth rates with significantly higher yields with improved quality due to a well maintained growing environment. Importantly, crops can be grown out of traditional seasons and native areas giving the grower a higher premium for their product at times of high demand.

According to the Chisholm Institute, the Australian Hydroponic and Greenhouse Association (AHGA) report *Overview of the Hydroponics Industry* advises that this type of glasshouse horticulture:

- is capital intensive, with capital costs varying between $100 and over $300 per square metre, depending on the sophistication of the greenhouse design and technology used, but with viable production units at a minimum of 1,500m^2; and
- with estimated returns of up to 20–25 per cent return on investment, as opposed to three to five per cent on investment with traditional production methods.

This type of "new" high technology industry could be developed to complement existing irrigated agriculture in the Basin, or to replace the productive base in Basin communities that may be highly vulnerable to reduced SDLs. This type of facility is not only highly productive, but is water efficient, would require professional skills development to operate and maintain the facility, remains in the same market environment as existing irrigated field horticulture, and importantly would be less susceptible to climatic fluctuations than the traditional agricultural base. Further, because it is not climate, topographically or soil dependent, it can be constructed at any location which also means it can be established on cheaper, non-fertile land and importantly could be strategically located to maintain the productive base of Basin communities that may otherwise be particularly vulnerable to reduced SDLs

Recommendation 8

IAL recommends that the Committee seriously investigate the potential of this sort of industrialised horticulture further, as a potential priority for regional investment by government in technology and industries that would diversify, and sustain or grow regional economies.

3.3 Role of governments, the agricultural industry and the research sector in supporting water efficiency within the Murray-Darling Basin

3.3.1 Government Role in Supporting Water Efficiency

IAL believes the Government has three primary roles in supporting the development and delivery of water efficiency within the Murray-Darling Basin, namely:

1. setting policy frameworks that drive technical and economic efficient water use. This is largely being done already through the Basin Plan process and the establishment of water markets under the National Water Initiative;
2. providing funding support to research and development of improved irrigation practice to ensure we are continuously improving our potential to be more efficient. Indeed, investment in irrigation research and development in the current context is a public good, as it directly contributes to both enabling the restoration of key environmental assets throughout the Basin, and to maintaining the productive irrigation base of Basin economies; and
3. funding of water efficiency measures to encourage adoption of best, most contemporary practice and technology.

IAL's primary concerns with Government's ability in supporting water efficiency are:

- there is no co-ordinating body for irrigation research and development (see section 3.3.3 for more detail);
- there is a climate of uncertainty for the irrigation services sector (as outlined in Section 2) and governments need to actively preserve this sector as it provides the technical capacity for delivering on-ground water use efficiency that is needed for government's own reform processes; and
- the Commonwealth's funding program for on-farm water efficiency measures may be risking taxpayer dollars because of the lack of proper checks and balances.

Concern over Funding Direction

While we support the Commonwealth's on-farm efficiency funding, and we have worked closely with the now Department of Sustainability, Environment, Water, Population and Communities in relation to this funding, we have some residual concerns over the accountability of how this important taxpayer resource is spent.

We have raised our concerns with successive Ministers, but without satisfactory resolution at this stage.

These concerns are summarised below:

- the program is a competitive process, which therefore encourages proposals to minimise costs. While we recognise the benefits of this approach for accountability in maximising "value-for-money" of public expenditure through the funding, this has a few potentially perverse outcomes including:
    - a bias toward low capital projects, and therefore:
        - entrenching older technologies and approaches, rather than encouraging innovation and uptake of high technology irrigation systems;
        - not necessarily considering the recurring operating costs which are often higher with low capital projects because of higher energy costs for pump systems and labour requirements, and lost opportunities for long term viability through higher productivity and business efficiency;

  - proposals that minimise costs through inadequate emphasis on training that is so critical to successful adoption of new technologies, or inclusion of recognised, competent service providers which may compromise the design, installation and operation of irrigation systems and adversely affect irrigation farms in the longer term*; and
  - a focus on value for money in returning water for the environment, without an equal focus on the public good that can be achieved from increasing the overall productivity that then helps sustain Basin communities;

- the program operates on a Delivery Partner model, where the Delivery Partner is essentially the manager of a sub-set of individual on-farm projects. This approach means that access to funding is only available to those irrigators that are "attached" to a successful Delivery Partner. So, while there may be significant water efficiency opportunities and irrigator willingness to seek irrigation efficiency, their participation is dependent on the capability of the prospective Delivery Partner to prepare a diligent proposal; and

- extending from the point above, and to respond to the Basin Plan, on-farm efficiency funding should be better targeted toward:
  - irrigators in valleys particularly affected by reduced SDLs; and
  - locations identified by a more thorough socio-economic analysis as vulnerable.

*we recognise that the Commonwealth's funding Guidelines state that proposals utilising competent irrigation professionals will be more highly regarded, but this alone does not adequately prevent "fly-by-nighters" attracted by the funding, nor does it drive the longer term legacy of a professional irrigation sector.

Recommendation 9

While we understand round 2 of the Commonwealth's on-farm efficiency funding program has recently been announced, IAL recommends that the on-farm efficiency funding programs be briefly reviewed and recast prior to further funding rounds to ensure the program is better targeted to respond to the challenges of the Basin Plan, and to ensure the funding leaves a legacy of a professional, highly productive and efficient irrigation industry.

The review should seek:

- to establish efficiency benchmarks/standards to be achieved by funding;
- develop clear QA processes to ensure funding proposals can technically meet efficiency benchmarks, and are implemented to achieve these benchmarks – this requires demonstrable competency in design, installation and operation;
- amend guidelines to require proposals to include training of operators to use new systems and implement best practice operation and maintenance;
- options to encourage innovation and uptake of high technology irrigation systems to ensure long term viability through higher productivity and business efficiency, perhaps through either greater weighting in the assessment of innovative proposals, or running a separate funding pathway for innovative on-farm irrigation efficiency proposals;
- to ensure funding accessibility to all irrigators, perhaps through funding the concept of a roaming Delivery Partner that can assess and oversight individual efficiency upgrades across a broad geographic range.

IAL is willing to assist Government develop and embed standards and benchmarks in funding programs to help return productivity and water efficiency outcomes from this public investment.

3.3.2 Agricultural Industry Role in Supporting Water Efficiency

The agricultural sector will obviously be the centre piece for supporting water efficiency. Essentially, if water efficiency is not adopted by the agricultural sector, then the Basin Plan will not be successfully implemented.

IAL believes that, whilst there has been much emotive rhetoric about the Basin Plan, and that there are matters that need to be addressed in finalising the Basin Plan as set out in Section 2 of this submission, that it is now time for agricultural representative organisations to take a leadership role in responding to the challenge that will be presented by the Basin irrespective of the final quantum in SDL reductions.

In this regard IAL would like to see agricultural representative organisations assume some responsibility for assisting their members to practically respond to the Basin Plan through:

- providing accurate information about the Basin Plan and its implications;
- providing accurate information about government adjustment programs and opportunities to participate, including *Water for the Future* funding programs;
- committing to minimum irrigation performance expectations that will assist them to make water savings whilst maintaining productivity, but will also demonstrate to the wider community that it is keen to contribute to a Basin solution, and that it is a progressive sector willing to meet community expectations for efficient use of water;
- being aware of, and promoting new water efficiency technologies and best practices;
- promoting a professional agricultural sector that ensures competency in all aspects of planning, design, installation and operation of irrigation activities.

IAL is keen to initiate and lead a Peak Industry Irrigation group that provides a forum for promulgating this type of technically based information on best practice, funding opportunities and practical implementation. IAL would seek Government participation on this type of forum, to ensure the messages are accurate, that there is a co-ordination between the activities of the peak industry irrigation organisations and government policy and funding initiatives related to irrigation, and that there is a continuing mechanism for dialogue between government and industry during the implementation of this reform.

Recommendation 10

IAL seeks the Committee's in-principle support for the need for this Peak Industry Irrigation forum, and the need for government representation and participation in this forum.

3.3.3 Role of Research Sector in Supporting Water Efficiency

Research and development is obviously a critical to support water efficiency through the development of new irrigation technologies and better irrigation practices. However, future innovation in the irrigation sector is seriously compromised at present by the recent cessation of the CRC Irrigation Futures in September 2010, and the scheduled finish of the National Program for Sustainable Irrigation (NPSI) in June 2011. At this stage there is no clear commitment from government or the industry for a co-ordination or funding model to replace the CRC or NPSI.

Recognising this as a serious strategic void for the industry, IAL and NPSI have recently jointly prepared and published a document setting out a vision statement for irrigation research and development, identifying a list of agreed industry research and development needs with key stakeholders, exploring options for co-ordination and funding models for this research, and recommending a preferred model for this work.

Essentially NPSI and IAL prefer the establishment of a new co-ordinating organisation, with its own constitution and board to represent stakeholders, and where funding for research and development is sourced from start up subscriptions from stakeholders, then developing a funding base from further subscriptions, grants and industry funding. The NPSI/IAL publication is available at:
http://npsi.gov.au/files/products/national-program-sustainable-irrigation/npsi410/npsi410-future-vision-and-options-irrigation_1.pdf.

However, we note that there are several current investigations of appropriate future research and development models in the broader rural sector, including the Productivity Commission's Inquiry into Rural Research and Development Corporations which is due to be finalised in February 2011, and a Primary Industry Steering Committee that reports to the Minister for Agriculture which also is apparently developing a proposed research and development model. While these reviews of rural research and development are welcome, the relevant point for this Committee is that there is a high urgency to decide on and implement a research and development model for the irrigation sector, to ensure continuity of the research capability and to commence the next series of research and development priorities required to support government's reform agenda.

Recommendation 11

IAL recommends that the Committee examine the NPSI/IAL publication, with a view to supporting and recommending to government a preferred irrigation research and development model and the research priorities to be immediately funded as an element of a Plan for Basin Communities.

Research and development also needs to be coupled with better funded extension services to assist with on-ground adoption of the research and development outcomes. IAL, being a national organisation with a breadth of membership across the whole industry sector chain, is uniquely placed to co-ordinate prioritisation of research needs from a wide range of stakeholders, and with appropriate funding, to provide cost effective extension services because of our capacity to transfer information and learning's across regions, jurisdictions and commodity groups.

Conclusion

This paper highlights some of the more immediate to medium term challenges facing this Committee and the policy makers who will be asked to consider its findings. But we also consider IAL, as a broader, representative and technically based organisation, can assist Government to develop and implement a more holistic and long term approach than the narrow cast one recommended by the Guide to the proposed Basin Plan.

The Murray Darling Basin is more than just about irrigators. It is more than just a problem for environmentalist. It is the heart and soul of this nation, providing for and sustaining our cities as well as the Basin communities themselves.

IAL is well placed to work with this Committee and all governments in the Basin to ensure the right balance is struck and that there are practical programs that will deliver not just water savings required to meet environmental objectives, but also maintain a highly productive, sustainable and professional irrigation industry.

We believe if our recommendations are adopted then water savings of up to 50% can be realised, more jobs can be created through improved productivity measures, smart technologies can be introduced and communities can thrive along with a healthy river system now and for generations to come.

We welcome the opportunity to present our submission in person to the committee and to further investigate areas of interest.

We commend the committee for its consideration of our submission.

ATTACHMENT A1
IAL Services

Information
- Publishes quarterly Irrigation Australia journal
- Keeps the industry connected through monthly e-newsletter
- Prepares technical publications on an as needs basis
- Co-ordinates information transfer, and builds information networks through irrigation Special Interest Groups
- Holds IAL Regional meetings

Conference and Exhibition
- Runs an annual irrigation conference – one city based and one regionally based on alternate years
- Runs a bi-annual irrigation exhibition – largest in the southern hemisphere

Training
- Is a Registered Training organisation under the national training framework
- Offers irrigation retail training
- Offers an Irrigation Efficiency Course for open space managers
- Offers Meter Installer course
- Co-ordinates other training on an as needs basis
- Co-ordinates assessors to undertake Recognition of Prior Learning services under the national training framework
- Works with AgriFoods Skills Council to determine irrigation qualifications and training requirements for Certificate II to Diploma level to match industry needs

Certification
- Administers a Certified Irrigation Professionals scheme, with oversight from an independent Certification Board, to recognise competencies across a range of irrigation vocations, including Certified Meter Installer which supports the implementation of metering reforms required by the National Water Initiative.

Project Management
- Manages project contracts with SA Water, WA Water Corporation, WA Department of Water, Qld, Department of Environment and Resource Management and Horticulture Australia Limited, and National program for Sustainable Irrigation for a range of irrigation services such as training programs, train-the-trainer, running seminars, and drafting best practice guidelines.

Advocacy
- Representing the interests of the whole irrigation services chain in an apolitical and technically rigorous manner.