

In this issue:

- NAIF Stakeholder workshops positively embraced
- NAIF Steering Committee meets in Canberra
- NAIF Project Team members invited to contribute to HELP Southern Symposium 2007 in Johannesburg
- CRC for Irrigation Futures hold Annual Research Forum in Townsville, north Queensland
- NAIF meets with the Land & Water Australia Board and the Kimberley Water Forum in Broome
- Irrigation Infrastructure Hotspots Assessment workshops
- 2nd International Salinity Forum
- The Daly River Catchment Bibliographies

Visit our website at: <http://www.clw.csiro.au/naif/>

Welcome

Welcome to NAIFNEWS number 7.

A lot has happened since our last newsletter in August 2007; how time flies!!!

Australia has a new Federal Government which recently announced their first budget. We've seen large summer rainfalls and flooding in some areas while large parts of Australia are still suffering extreme drought

conditions. Australian cities continue to face unprecedented

water restrictions and there are more and more plans for desalination plants across the country. The Memorandum of Understanding addressing the Murray Darling Basin (MDB) Reform has been agreed in principle by the Australian Government, NSW, VIC, SA, QLD and the ACT, who have agreed to sign the inter-governmental agreement at the COAG meeting in July 2008. The Murray Darling Basin itself continues to dry at alarming rates and 'climate change' is now a regular topic of discussion within the broader community. We have lost one of Australia's preeminent thinkers and leading water experts, Peter Cullen, who passed away in Canberra on the 13th March (<http://www.wentworthgroup.org/news/>). We have seen the announcement of the "Caring for our Country" program, the Government's new natural resource management program (<http://www.nrm.gov.au/funding/future.html>). We've continued to see increasing interest in northern Australia's land and water resources, and the role and



Waterfalls in the Northern Territory

composition of the Northern Australia Task Force is currently being reviewed (<http://www.environment.gov.au/water/action/development/index.html>) by the new Government. 2008 is well on the way to being another full and eventful year.

The NAIF project also made great strides through this period, with another round of meetings and workshops in Brisbane, Ayr, Darwin, Kununurra, Broome, Perth, and Canberra during September to November 2007. The aim was to engage with as many clients and stakeholders as possible, including those who took part in the initial workshops in 2004 to share the NAIF project learnings and experiences over the last 4 years and to seek feedback on progress to date and views on future directions and priorities. The main messages and outcomes from these workshops are available on the NAIF website at <http://www.clw.csiro.au/naif/>. A series of major technical reports documenting the research carried out by NAIF, and four research bulletins which provide a summary of the key NAIF work areas, have been completed and are available on the NAIF website.

The Land and Water Australia (LWA) National Program for Sustainable Irrigation (NPSI) CDS23 Final Report and Final Technical Report submitted to LWA, have subsequently been approved and are also available at the NAIF website. In approving the final report clear recognition was given to the importance of both the knowledge and partnerships developed through NAIF, particularly those involving the four national and state/territory government jurisdictions with responsibility for the north. Particular mention was made of the timely delivery of project findings, the role the NAIF project has had in informing policy and influencing the thinking about irrigation in northern Australia, and the relevance of the issues identified through NAIF which are now being addressed by governments.



Furrow Irrigation in WA

While complex and challenging at times, the NAIF project is recognised to have played a major role in leading debate regarding irrigation in northern Australia. It has highlighted the need for a radical shift in thinking about irrigation by taking a catchment-scale systems approach. Further, it has highlighted that if there is to be more irrigation in northern Australia, there is a need for careful thinking regarding what irrigation should look like, where it should be located, and how it should be managed so that it is in harmony with the unique northern ecosystems. The long term strategic approach NAIF brought to the debate has been particularly well received and acknowledged by a wide range of stakeholders.

At the risk of omitting someone I want to again take this opportunity to thank all those who have contributed through their involvement with NAIF, sometimes through vigorous questioning and debate about the very existence of NAIF, and sometimes through providing additional resources to allow the NAIF project to go that extra mile. I would like to thank in particular the NAIF Steering Committee and Project Team, whose membership has changed over the years as needs changed, but whose commitment and support strengthened as time progressed. I also want to thank CSIRO, CRC for Irrigation Futures, LWA and NPSI for believing in us and supporting

such a complex, challenging and risky project. Feedback suggests it was well worth the risk and that the knowledge, tools and processes being developed through NAIF are highly valued by a wide range of clients and stakeholders. Our hope is that these will help ensure ecologically sustainable development (ESD) in northern Australia by supporting more rigorous debate and cautious, informed decision making about the role irrigation may or may not play in northern Australia's future.

The NAIF Steering Committee, CRC IF and CSIRO are now discussing future directions for NAIF. If you have views on research needs and priorities regarding irrigation and its relationship with the ecological, social, cultural, and economic systems of northern Australia, please discuss these with NAIF Steering Committee members, with myself (Keith.Bristow@csiro.au) or Jeff Camkin (Jeff.Camkin@csiro.au) or forward them to the NAIF Steering Committee Chairman Ian Lancaster (Ian.Lancaster@nt.gov.au).



Burdekin region, north Queensland

Keith L. Bristow – Project Leader

NAIF Stakeholder workshops positively embraced

Engaging stakeholders in a project which spans northern Australia has been challenging but an extremely beneficial and vital feature of NAIF.

Initial stakeholder workshops were held across northern Australia during 2004. The engagement and conversation has continued formally and informally since then, through various mechanisms ranging from email, to phone calls, newsletters and face to face meetings and workshops.

As part of the NAIF LWA/NPSI CDS23 contract, the NAIF project team ran a series of workshops during September-November 2007 which reported to and sought feedback from key stakeholders on the NAIF research activities, findings and future directions.



The Queensland Department of Natural Resources and Water hosted the first workshop in Brisbane on 7 September 2007 which attracted 22 active participants.

Comments included:

Tom Crothers (NAIF SC) opening Brisbane Workshop

“A really, really powerful system potentially.” Lyall Hinrichson, QLD Department of Natural Resources and Water in relation to the NAIF knowledge platform prototype.

“Pleased to see how NAIF has matured over time. Only concern is short term funding and to ensure it is used well in the future.” Lindsay Delzoppo, Director Planning Services, QLD EPA.

The second workshop held was in Ayr on 14 September 2007, hosted by the Queensland Department of Natural Resources and Water and Burdekin Shire Council. There were 24 participants and the workshop created considerable interaction and discussion.

“This (NAIF sustainability framework) is a very, very useful path that will deliver best practice environmental management.” Michael Hoey, Chairman, North Burdekin Water Board.

“NAIF Knowledge Platform is a fascinating way to go. A mechanism to get awareness of available knowledge.” Gary Jensen, Manager Water Services, QLD NRW.



Stakeholders at the Ayr Workshop

The Northern Territory Department of Natural Resources, Environment and The Arts hosted the Darwin workshop on 24 September 2007. This workshop generated good discussion and feedback from the 21 participants.

“From an industry perspective this provides insight into the future. Definite future for the sustainability framework – it is a viable option.” Tim West, NT Horticultural Association.

“Improving communication and engagement will help decrease any animosity. The knowledge platforms are an absolutely positive step forward.” Geraldine Lee, DAFF/DEWR (now DEWHR).

“Forum was useful to me to generate thoughts. Knowledge management is a huge issue, including capturing existing knowledge. Fantastic direction being taken and good ideas.” Anne Withell, Northern Australia Land and Water Futures Group, DEWR (now DEWHR).

Kununurra was the venue for the next stakeholder workshop, which was held on 25 September 2007. Hosted by the Western Australian Government Department of Water the workshop attracted 20 participants.

“Like the whole of systems approach. Learnt a lot. A good approach.” Suzi Silvester, WA Department of Water Resources.



Kununurra Workshop

Appreciate NAIF acknowledge there are questions but also a need to move forward and make decisions.” Matt Brann, ABC Rural Reporter.

“Interested in the LBKP and knowledge management has been on the catchment reference group agenda for the last 12 months. Agree with the opportunity to replicate the system across northern Australia.” Liz Brown, Executive Officer, Ord Catchment Reference Group.

“Now much more comfortable with where NAIF is at. Fantastic. Actually understand where Keith is coming from on groundwater/water issues, understand the knowledge platform and could now explain these things to others.” Dave Munday, Kimberley Regional Manager, WA Department of Water.

The Western Australian Government Department of Water also hosted a workshop in Perth on 28 September 2007, which 19 stakeholders attended.

“While each of the take home messages are important, it is important not to lose the connectivity between them. Probably the biggest take home message is the complexity of the system and the need to manage that complexity.” ...“The visual tools are incredibly powerful. Knowledge management is still embryonic and we should be prepared to make some mistakes. At the moment it is superficial – the first step is education about the complexity. The knowledge platform has extraordinary potential to aid decision making.” Doug Hall, WA Industry Development Officer, Irrigation Australia.

“Opportunity now to make the transition from research and development to decision making support by rolling out the sustainability framework across trial catchments, which will be important. Setting groundwater targets as a benchmark is a key message that applies everywhere.” Tom Busher, NPSI Board Member and Deputy Chairman Harvey Water, in relation to the NAIF knowledge platform.

“Interaction between the states through NAIF has been extremely useful and a real benefit. Workshops in the north over the past week have been really useful and overall NAIF has been very successful, especially in building partnerships.”

John Ruprecht, Director
Water Resource
Management, WA
Department of Water.



Keith Bristow presenting at the Perth Workshop

Individual stakeholder meetings were also held in Broome on 26 and 27 September 2007.

The final of this series of workshops was held on 28 November 2007 in Canberra and was attended by 35 stakeholders. The Department of the Environment, Water Heritage and the Arts hosted the event, which was chaired by Anwen Lovett from Land and Water Australia.



Ian Lancaster (NAIF SC Chair) speaking at the Canberra Workshop

NAIF has highlighted the importance of having a long term view when considering irrigation across northern Australia. The long term research focus is extremely important and balances short term research being done through other projects. Ian Lancaster, Director Water Management Branch, Northern Territory Department of Natural Resources, Environment and the Arts.

NAIF researchers have been committed to engaging in and maintaining conversations with a wide range of stakeholders on often sensitive and complex issues involving water, the environment and the future of irrigation in northern Australia. This has built a high-level of trust between the NAIF project team and various individuals and stakeholders across northern Australia, and a strong and committed cross-jurisdictional approach to improving understanding and management of northern Australia water resources. The success of this approach has provided a strong platform for further work into the future.



Kevin Devlin (NAIF SC) & Richard Cresswell (CSIRO)

NAIF Steering Committee meets in Canberra

The NAIF Steering Committee met face to face in Canberra on Wednesday 28 November 2007 to consider the NAIF LWA/NPSI CDS23 final report and discuss future directions for the research, activities and opportunities which have emerged through NAIF.

The Steering Committee met at the CSIRO Land and Water Black Mountain Laboratories in Canberra. While there, the Steering Committee took the opportunity to network with senior CSIRO management and other key decision makers to share their views on the contributions NAIF has made across northern Australia and how NAIF work can be continued into the future.

The NAIF Steering Committee members also participated in the stakeholder workshop held the same day.

NAIF Project Team members invited to contribute to HELP Southern Symposium 2007 in Johannesburg

Dr Keith Bristow and Mr Jeff Camkin from the NAIF Project team were among 180 invited participants attending the UNESCO HELP Southern Symposium *Local solutions to global water problems: lessons from the South* held in Johannesburg, South Africa from 4 to 9 November 2007.

The Symposium objectives aimed to bridge the gap between science and policy to assist in solving “water related issues” at the local, national and international levels.

Keith and Jeff took the opportunity to discuss research outcomes from the NAIF project and to network and interact with other international projects facing similar challenges. One outcome of this meeting was the organisation and successful visit by Dr Mark Dent from the University of KwaZulu-Natal to Australia during late February early March 2008. Details of Dr Dent's visit will be included in the next NAIFNEWS.

The symposium was jointly organized by the South African Department of Water Affairs and Forestry and UNESCO in partnership with the International Water Management Institute, the Water Institute of Southern Africa, the Water Research Commission and the University of KwaZulu-Natal.



Further details on Hydrology for the Environment, Life and Policy (HELP) can be found at their website at http://portal.unesco.org/science/en/ev.php-URL_ID=1205&URL_DO=DO_TOPIC&URL_SECTION=201.html

CRC for Irrigation Futures hold Annual Research Forum in Townsville, north Queensland

Dr Keith Bristow, Tropical Zone Leader for the Cooperative Research Centre for Irrigation Futures (CRC IF), hosted the CRC IF Annual Research Forum from the 10 to 13 September 2007 in Townsville. Members of the NAIF Project team actively participated throughout the forum.

The first day was dedicated to the CRC IF funded students and involved sessions on leadership development, writing and publishing scientific journal papers (led by Keith Bristow) and discussions about current research work. Students also participated in a role play led by Keith Bristow and Jeff Camkin on researcher-stakeholder integration. CRC IF funded NAIF students Peta Dzidic, Lucy Reading and Steve Marchant embraced the opportunity to present their work and interact with other students and senior researchers from across the country about water and irrigation related



research.

CRC IF Annual Research Forum Student Day Activity

Lucy Reading and Steve Marchant presented posters on their research work. Lucy's poster was entitled: *What Controls Groundwater Recharge below Irrigated Fields in the Lower Burdekin?* Steve's poster was entitled: *The Mighty Burdekin: Development Objectives Limit Future Opportunities?* Steve's poster compared the main development objectives and the driving forces behind these objectives from the 1951 Burdekin Authority Report, the 1978 Burdekin Project Assessment Committee Report and the 2006 Burdekin Basin Draft Water Plan. The analysis questions

whether future social-ecological opportunities are being limited by a focus on economic objectives.

Peta Dzidic gave two presentations during the forum, the first entitled: *Networks in the North: SNA as a Tool for Decision Making*. Peta's presentation outlined the use of Social Network Analysis as a tool for deconstructing the information sourcing networks in Kununurra. The intent was to examine patterns in information sourcing behaviour and gauge the level of influence and trust these sources have on the decisions irrigators make on their property. Peta also gave a short presentation on: *What's the Future for the Food Bowl?* (a critical examination of the social issues that underpin Kununurra's future and how these issues impact on the communities capacity to cope with the somewhat allusive Ord 2).

Delegate numbers then increased to over 100 for the remainder of the forum as researchers from partner organizations joined to present and discuss research outcomes, workshop research ideas and future opportunities, and generally bring together the research learnings from across the country. The CRC IF Board also held their Board meeting during the Forum and took the opportunity to interact with CRC IF students and researchers during forum sessions and dinners.



Jeff Camkin

Jeff Camkin spoke on *Linking Research Outputs to Policy: Reflections on NAIF and other experiences*. This presentation described the similarities between the CRC IF Systems Harmonisation Program, NAIF and the UNESCO-IHP Hydrology, Environment, Life and Policy (HELP) program and outlined:

- the need for long term relationships to integrate research, stakeholders and policymakers
- the need for researchers to understand the world of the policy maker in the same way they need to understand the irrigators world
- the need to cultivate relationships with bureaucrats and political advisors
- that developing pathways to adoption requires tenacity but it is a responsibility of researchers.

This presentation has resulted in the CRC IF Annual Research Forum for 2009 focussing on the linkages between irrigation research outputs and policy and Jeff will lend his expertise to the organising committee for that conference.

A major highlight of the forum was the field trip led by Keith Bristow and Steve Attard on the 12 September which took approximately 90 delegates to the lower Burdekin coastal floodplain, situated in the wet-dry tropics approximately 90 kilometres southeast of Townsville. The field trip included visits to:

- Mulgowie Farm - <http://www.mulgowie.com.au/>
- McDowell's River Pump Station - Sand dam inspection
- Recharge Pit at Home Hill
- Clare Weir
- Burdekin Agricultural College
- Ramsar listed Cromarty Wetlands

Clare Weir



Delegates were provided the opportunity to see and hear first hand about the natural resource management issues in the lower Burdekin which involve water quality (sediments, nutrients, salts, agrochemicals), salinity (dryland, irrigated, saltwater intrusion), land degradation (erosion, soil acidity, salinisation), weeds, loss of riparian vegetation and change to river flows, aquatic weeds, loss of biodiversity (native vegetation, animal species), loss of wetlands, and feral animals. The field trip booklet can be obtained by contacting Di.Popham@csiro.au.



Andrew Kelly (NAIF SC) and Steve Attard (CRC IF) discussing sand dams



The closing plenary of the forum incorporated a discussion around end users' observations of CRC IF research and the forum in general, and this discussion was led by NAIF Steering Committee member Andrew Kelly.

Centre Pivot irrigation at Mulgowie Farm

NAIF meets with the Land & Water Australia Board and the Kimberley Water Forum in Broome

NAIF Project Leader, Dr Keith Bristow, was invited to present to the LWA Board and TRaCK Program Management Committee in Broome, Western Australia on Tuesday 11 March 2008 to discuss the research and outcomes achieved through the initial LWA NPSI funded phase of NAIF.



Crops in Kununurra, WA

Dr Bristow was also invited to participate in the Kimberley Water Forum which was held on the 13 and 14 March 2008 in Broome to discuss water policy and management from the national through to the local level with regional stakeholders. This was a well organised and run forum attended by some 100 delegates, which generated considerable discussion in helping set the scene for future water planning and management in the Kimberley. The NAIF project was able to contribute

much from its experiences in integrating science, policy and management, stakeholder engagement, visioning, knowledge platforms etc.

Irrigation Infrastructure Hotspots Assessment workshops

CSIRO has recently been commissioned by the Australian Government Department of Environment, Water, Heritage and The Arts to undertake an Irrigation Infrastructure Hotspot Assessment project. The project, which is funded under the Australian Government's improving delivery system efficiency element of the National

Plan for Water Security, is being delivered through CSIRO and the International Centre for Water and Food Security, Charles Sturt University.

The Hotspots project aims to develop a comprehensive knowledge database of irrigation water information across Australia and to develop a standardized methodology for assessing water loss hotspots. The methodology will draw on the best practical technology and consider both cost effectiveness and ease of implementation. It is expected that the project outputs will be used by irrigation water distributors and the Australian Government to determine priorities for improving irrigation delivery infrastructure.

The proposed methodologies were tested in workshops involving Australian irrigation water providers, policy makers and researchers in Sydney and Adelaide. A group of international experts who attended a third and final workshop in Melbourne provided important peer review of the proposals. Jeff Camkin, NAIF Sustainability Specialist, was invited to participate in the workshops during March 2008 to bring northern Australia perspectives developed through the NAIF project.

2nd International Salinity Forum

The 2nd International Salinity Forum - Salinity, Water and Society – Global issues, local action - was held at the Adelaide Convention Centre, Adelaide, South Australia from 31 March to 3 April 2008. The theme for this year was: *New approaches for tackling the salinisation of water resources. (including irrigation, dryland and urban salinity, and salt water intrusion).*

The objectives of the 2008 Forum were to provide the opportunity for the international and Australian delegates to:

- Exchange cutting edge knowledge about the science, policies and management practices relating to salinity, and particularly its associated water and human dimensions;
- Cement and enhance the international network of scientific, engineering, policy and community interests associated with salinity;
- Translate scientific knowledge about salinity into sound policy, management and on-ground actions to secure long-term food production, protect land, water and vegetation resources and enhance quality of life globally

Dr Keith Bristow attended the forum, as a NAIF and CRC IF representative, attending the plenary sessions on global salinity challenges by national and international leading scientists, and participating in the many and varied sessions across the four day program. More information can be obtained from the forum website at <http://www.internationalsalinityforum.org/>

The Daly River Catchment Bibliographies

The Daly River Catchment Bibliographies, published works and current projects, have been updated. They are available at <http://www.nt.gov.au/nreta/water/drmac/endnote.html>



The Daly River

NAIF CONTACTS

Project Team	Project Partners
Project Leader: Keith Bristow	Land & Water Australia
Sustainability Specialist: Jeff Camkin	National Program for Sustainable Irrigation
Hydrologist: Cuan Petheram	CRC for Irrigation Futures
Mathematician/Physicist: Freeman Cook	CSIRO Land and Water
Hydrogeochemist: Matt Lenahan	Department of Water, Government of Western Australia
Research Assistant: Justin Story	Northern Territory Department of Natural Resources, Environment and the Arts
PhD Student: Peta Dzidic	Queensland Department of Natural Resources & Water
PhD Student: Lucy Reading	Department of Agriculture Fisheries & Forestry
PhD Student: Steve Marchant	
Project Officer: Di Popham	

