



Land and Water

NORTHERN AUSTRALIA IRRIGATION FUTURES: Building a basis for developing sustainable irrigation across tropical Australia

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CSIRO Land and Water Client Report
NPSI Project CDS23
Milestone 2 Report
June 2004



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NORTHERN AUSTRALIA IRRIGATION FUTURES: Building a basis for developing sustainable irrigation across tropical Australia

1.0 SUMMARY

This project will deliver a framework for use by policy makers, regulators, managers, and investors to ensure irrigation is developed in a sustainable manner across northern Australia. Stage I of the project will involve development of the full project team, key client/stakeholder/collaborative network, and detailed work plan and budget. Stage II will involve carrying out the work plan agreed to in Stage I. The project will use past experience and new knowledge to build an understanding of key landscape attributes (including soil and water resources, climate, vegetation, rivers, near shore marine environments) relevant to sustainable irrigation in tropical systems. This knowledge will be used to deliver a framework based on sustainability indicators and management criteria at a range of scales (field, farm, district, scheme, and catchment) to support planning, development, implementation and management of new schemes, and if necessary, modification of existing schemes across northern Australia

2.0 PROJECT DETAILS

Project Reference Number: CDS23

Title: Northern Australia Irrigation Futures: Building a basis for developing sustainable irrigation across tropical Australia

Contracted Research Organisation: CSIRO Land and Water

Principal Contact:

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Duration: 01/07/03 – 30/06/07

Milestone number: 2

Due date: 31 May 2004

Project Objectives:

1. Delineate key landscape attributes (including soil and water resources, climate, vegetation, rivers, near shore marine environments, and where appropriate links to

people, industries, markets) relevant to sustainable irrigation development across northern Australia

2. Use key landscape attributes to develop sustainability indicators and associated management criteria covering a range of scales (field, farm, district, irrigation scheme, catchment) for northern Australia
3. Develop an overall framework that, through their involvement, is embraced by policy makers, regulators, investors and managers, to ensure irrigation is developed and managed in a consistent and sustainable manner across northern Australia
4. Use a number of linked case studies to support and inform development and enable testing of the framework
5. Through provision of a robust framework, contribute tools and knowledge to support considered debate and long term strategic planning for northern Australia and Australia as a whole

Alteration to original objectives: Nil

2.0 MILESTONE DESCRIPTION AND ACHIEVEMENT

1. Generic deliverables

(Generic deliverables achieved)

Report formats:

All documents are available in hardcopy and / or electronic format as requested by LWA.

Photographs:

The project is accumulating photographs to help document various aspects of the project and for use in various reports and presentations relating to project activities.

Media:

Media interest has remained high following Minister Truss's announcement of the project in late October 2003, with various print, radio and TV stories being broadcast across the north. These have included interviews with ABC North West WA Radio News and ABD6 State Television News in Darwin. Representatives of organisations that have attended various project seminars / meetings across northern Australia have also indicated they would publicise the project in their industry magazines so information about the project should appear in magazines for WA Pastoralists and Graziers, the WA Farmers Federation, the Irrigation Association of Australia WA regional newsletter and in some of the conservation magazines.

Knowledge assets:

A widening cross-section of the Australian community which has been engaged by the project continues to build its knowledge and understanding of the uniqueness of the northern Australia environment and of the various issues that need to be addressed in assessing the likely costs of benefits of investing in irrigation within tropical Australia

2. Attendance including presentation and poster display by Principal Investigator at annual Sustainable Irrigation Program Forum (October 2003)
(Presentation and poster display at annual forum)

Achieved. Details and copy of poster provided in Milestone 1 report

3. Arrangements with Risk Management Project finalised

Achieved. Bristow, Charlesworth and Bartlett have continued discussions with Barry Hart and his student, Collette Thomas. A meeting was held with Collette in February 2004 in Townsville to discuss ongoing linkages between the two projects. We were informed that Collette's thesis work will focus on the Herbert and elsewhere and not include the lower Burdekin as a case study site as originally planned.

A second meeting took place with Barry Hart and Collette Thomas in Townsville on the 9 June, in which further linkages between the two projects were addressed in greater detail. The aim now is to proceed with an "ERA Training Workshop" for a small group, including the NAIF project team, to skill them in key issues and methodologies of ERA. This links particularly well with the indicator work currently being progressed within the NAIF team. The plan is to follow this with a broader 'community workshop' in the lower Burdekin to field test concepts on issues of importance to the NAIF project.

It has been agreed that we keep an ongoing conversation between the two projects to ensure that activities are linked wherever possible.

4. Stage I report detailing specifications for the framework and agreed project team, work plan and budget for Stage II

Milestone modified to align with changed project needs. The Stage 1 work plan was modified following the widespread interest generated in the project by Minister Truss's media announcement in late October 2003. This was to allow for greater stakeholder consultation across northern Australia to capture the range of views about the project and level of support for the project before leading into the main workshop to be held in Darwin involving the Commonwealth and 3 northern Governments (WA, NT, QLD) and key project stakeholders, including the LWA National Program for Sustainable Irrigation and CRC IF.

The revised project tasks were to finalise makeup of the Steering Committee, initiate establishment of a broad stakeholder network across northern Australia through conduct of a series of regional workshops, seminars and meetings, and to run a workshop involving the 4 key Governments involved in northern Australia to arrive at an agreed way forward for the project.

Steering Committee and Stakeholder Reference Group

There was extended discussion and debate amongst various stakeholders over the last several months about the need for a skills based rather than representational Steering Committee, the terms of reference (TOR) of the committee, and the composition of the committee. This has now been resolved with the following members making up the Steering Committee:

1. Ian Prosser (Chair)
2. Kevin Devlin
3. Ian Smith (with Wayne Mollah as back-up)
4. Ross Dalton (with Lois Hunt as back-up)
5. Jos Mensink
6. Allan Dale
7. Andrew Kelly
8. Mathew Durack
9. Murray Chapman
10. Chair of the Stakeholder Reference Group

Further details relating to the Steering Committee including terms of reference are included in **Appendix 1**.

It also became clear early in the project that there was a need for a broad stakeholder network and a smaller Stakeholder Reference Group (SRG) that could represent the stakeholder network and that could interact more regularly with the project team in providing ongoing guidance to the project. This has resulted in a draft terms of reference and composition for the SRG as outlined in **Appendix 2**. Key sectors potentially needing representation on the SRG include:

1. Government
2. Indigenous Communities
3. Community
4. Environment
5. NRM Regional Bodies
6. Agricultural Industries / Agribusiness
7. Other Industries
8. Science / Research
9. Media

The SRG will need to be formed over the next few months to ensure their input is captured in drafting the Stage 2 work plan.

Stakeholder Engagement

Jeremy Cape of Capeability Pty Ltd was engaged to assist with the initial set of engagements across northern Australia in early May 2004.

The main aims of this engagement were to:

- identify a broad range of project stakeholders
- identify data sources and data required by the project including
 - an inventory of current irrigation activity across northern Australia
 - availability of information on resources that affect irrigation
 - identification of current planning and approval processes and the strengths and weaknesses of each process
 - identify other current natural resource management projects with which the NAF project should interact
- determine the willingness of stakeholders to participate in NAIF by engaging in the framework development process by providing information and data to NAIF and commenting on draft frameworks

The workshops, seminars and meetings were conducted in Perth, Karratha, Broome and Kununurra between the 3 and 7 May. A full report of this stakeholder engagement is included as **Attachment 1**.

The Executive Summary of the report including key outcomes is included here:

- A series of meetings were held in various centres in West Australia from Perth to Kununurra in the week beginning Monday 3 May seeking comment from stakeholders in WA on the Northern Australia Irrigation Futures (NAIF) project. Five meetings and two face to face meetings were held during the week.
- Generally there was widespread support for the NAIF project and the tone of each meeting was positive and encouraging for the future.
- The key issues that emerged were the need for a systematic and transparent way of making decisions on irrigation development proposals in the north. It was suggested that proposals for irrigation developments are currently dealt with in an *ad hoc* way and often different government departments have specific criteria for evaluating proposals. These criteria are unique to the department which developed them.
- The view that the current process for planning and getting approval for irrigation development is flawed was shared by the industry, government and conservation groups.
- The various conservation groups consulted were more supportive of the project once they had heard the presentation from the project team. Before the meetings several groups appeared to have formed the view that the project was a thinly veiled attempt to promote irrigation development generally and some individual projects in particular. The project team was successful in changing this perception. All of the representatives from the different conservation groups indicated a willingness to be engaged in the future.
- The two major challenges for the future of NAIF are:
 1. developing a consultation process that will achieve outcomes in a suitable time frame
 2. developing a framework that while focussed on biophysical aspects of sustainability demonstrates clear linkages with the socioeconomic aspects of sustainability
- Previous experience in northern WA has shown that it is easy for consultation processes to become bogged down. There are particular issues that the project must consider because of the nature of the community across northern WA, including the remoteness of the region and the previous history of similar consultations.
- On a technical level it became clear that any sustainability framework developed would need to demonstrate clear linkages to socio economic issues. This does not mean that the NAIF project has to address all socio economic issues in depth but that the framework developed must show that socio economic issues are integral to overall sustainability.
- As long as these two issues are carefully considered and a transparent and open process can be developed for the project it is likely that cooperation and support for the project will be forthcoming from WA.

Darwin Workshop

Peter Chudleigh of Agtrans Research Pty Ltd was engaged to help facilitate the Darwin workshop which was held on the 26-27th May 2004. It involved participants from the Commonwealth, WA, NT and QLD Governments, and other key project stakeholders.

The objectives of the Darwin Workshop were to:

1. introduce the Northern Australia Irrigation Futures project and the potential benefits of the intended sustainability framework
2. exchange information concerning current government initiatives regarding irrigation development in northern Australia
3. identify needs of different jurisdictions and the benefits that can accrue from developing a sustainability framework and which can evolve with time
4. identify key issues that need to be included in / addressed by the framework and preferred features of the framework
5. discuss staffing, funding and cost sharing arrangements for the development of the framework
6. identify and agree on a way forward from the workshop

The full report of the Darwin workshop is included as **Attachment 2**. The executive summary of the report is included here:

1. The purpose of the workshop was for the Northern Australia Irrigation Futures (NAIF) project to engage with Australian governments associated with northern Australia irrigation (WA, NT, Qld and Commonwealth) in the presence of some of the key project stakeholders (the Land and Water Australia National Program for Sustainable Irrigation and CRC for Irrigation Futures)
2. The key outcome was that the four governments were positively engaged in the NAIF project and would be involved in further development of the project.
3. This successful engagement was in part due to benefits being identified by the respective governments that would be derived from the successful development of a sustainability framework for assessing the potential of irrigation in northern Australia. These benefits included transparency, data and information sharing, management of feedback and informing and assisting with future debates and decision making processes, including refining existing irrigation schemes.
4. A number of issues in relation to the development of the framework were identified that needed addressing. Some of these could be addressed by NAIF, it being recognised that NAIF was only one project and would be somewhat limited in its scope by its resourcing. Some of the key issues identified that NAIF would need to address were:
 - both independent groundwater systems and those interacting with rivers
 - specifying products that would emerge from the sustainability framework and the delivery systems that would be used
 - the different nature of engagement processes with indigenous communities
 - the differing needs of indigenous communities, investors, landholders, governments and regional and community groups

- the interface between the biophysical aspects of a sustainability framework and the social, economic and institutional aspects
 - the importance of developing and / or maintaining communication and engagement processes with a range of stakeholders, including the management of expectations
 - not all State agencies were present at the workshop and further engagement with a wider range of agencies is needed
5. The needs of NAIF for its future development were identified in terms of a work plan that included the specific activities planned, skills required and resourcing. It was made clear that cash resources from the States and Territory were currently limited but that there were some prospects for cash availability if circumstances changed. However, opportunities for in-kind support from all four governments were identified and the potential for linking the NAIF project to associated programs and initiatives, either current or planned, are significant. This linking to other initiatives appeared a key part of future resourcing and would provide a channel for injection of skills required by the NAIF project.
6. The most important implications for the NAIF project are:
- the need to address independent groundwater systems as a key component in the biophysical component of the sustainability framework
 - the linking of NAIF to other initiatives to both extend the skills available to the project and to enhance its resourcing for meeting its objectives
 - to develop simple and definable products that will emerge from the sustainability framework so that the different stakeholders can appreciate the benefits that they may expect
 - the need to develop a communication strategy as part of the work plan and to ensure that the strategy addresses the management of expectations and the plan employs a common language with terms clearly defined
 - to design specific engagement processes for indigenous communities and to inject into the project skills some appreciation of indigenous views of landscape and the associated design of irrigation developments
7. Conclusions and recommendations are:
- i) There was a high level of support and strong indications of prospective involvement evident from all governments participating in the workshop. Given this strong support for developing the sustainability framework, it is appropriate for a work plan or business plan to be developed for Stage 2 of the NAIF project.

Recommendation: A work plan be developed for Stage 2 of the project that recognises the importance of linkages to existing and prospective State and Commonwealth initiatives.

Recommendation: NAIF needs to further engage with several specific agencies not represented at the workshop (eg. EPA and DPIF Queensland, Tropical Savannas CRC etc).

- ii) The work plan needs to address issues raised at the workshop and identified in this report.

Recommendation: NAIF needs to specifically address in its Stage 2 work plan: a communications strategy, the linkages to other initiatives, and specific products and

delivery systems.

- iii) It is evident that the Steering Committee for the NAIF project engages a wide range of key stakeholders.

Recommendation: In discussions with key contacts in each State/Territory that the Project Leader and Steering Committee ensure as far as possible that all agencies are well connected to the project through the key contacts in each State/Territory.

Summary Statement

The main outcome of project activities to date is the widespread support for the project and the recommendation from the Darwin Workshop for the project to proceed in establishing the Stage 2 work plan, project team and budget for review and sign off by the key stakeholders, including the Steering Committee, the National Program for Sustainable Irrigation, and the CRC for Irrigation Futures.

It also became clear at the Darwin Workshop that there is strong support for the NAIF project to be linked to key 'case study sites'. The WA, NT and QLD Government in particular indicated preference for the NAIF project to deliver ongoing tangible outputs of relevance to their on ground work.

Because of limited time and resources, the NAIF project will need to be clear about what it can address and what others need to address. A key part of managing this issue will be awareness of and development of linkages with other activities and initiatives.

In developing the work plan for Stage 2 of NAIF, activities will need to be detailed and allowance made for changing these activities through time as the project evolves. This is deemed necessary in such a complex project and to ensure that the project is continually building on new knowledge and learning's.

The NAIF project will also need to be fully integrated into the CRC IF suite of projects to ensure it contributes to core CRC IF activities and captures relevant CRC IF input, particularly in addressing some of the social, economic and institutional issues associated with sustainable irrigation in northern Australia.

5. Third party cost share achieved

Milestone modified to align with changed project needs. Resourcing for the project was addressed at the Darwin Workshop whose aim was to achieve agreement between the Commonwealth and three northern Governments (WA, NT, QLD) on an agreed way forward for the project. All four Governments were highly supportive of the project with various offers of in-kind support as the project developed. Various linked activities and funding sources that could contribute to the NAIF activities and goals were also identified as spelt out in the Darwin Workshop report (see **Attachment 2**).

6. Independent review of the framework specification

Milestone modified to align with changed project needs. The framework specifications will now be drafted as part of the Stage 2 work plans as recommended at the Darwin Workshop. This will be made available for review / feedback through the Steering Committee once the project has been given approval to proceed and the plans are in an advanced form.

The rationale and benefits of a sustainability framework were addressed at the Darwin Workshop with Dr Jim McColl providing independent input and comment on this issue. A summary of the paper he talked to is included in the Darwin Workshop report (see Appendix 9 in **Attachment 2**)

7. Communication and Evaluation process specified

Milestone modified to align with changed project needs. The communication and evaluation process will be specified as part of the Stage 2 work plan.

8. Steering Committee provide advice to the Sustainable Irrigation Management Committee as to whether the framework specifications are sufficiently robust to proceed to Stage 2

Milestone modified to align with changed project needs. Results of the recent Stakeholder consultation and Darwin Workshop will be provided to the Steering Committee via this milestone report for their review / feedback and use in making recommendations to the National Program for Sustainable Irrigation Management Committee and CRC IF on the preferred way forward for the NAIF project.

3.0 VARIATIONS REQUIRED TO FUTURE MILESTONES

Future milestones will be set as part of the Stage 2 work plan.

4.0 FINANCIAL ISSUES

Additional financial support was obtained from the CSIRO Water for a Healthy Country Flagship Program to help facilitate the northern engagement process and Darwin Workshop and this support is gratefully acknowledged.

5.0 HUMAN RESOURCE ISSUES

Bart Kellett joined the project team on the 23 February as a PhD student on a CRC IF scholarship. Bart is a registered student with the University of Melbourne. He has already made significant progress through his literature search in addressing various issues to do with indicators, frameworks and sustainability of relevance to the project.

Additional skills needs and project team members will be addressed through development of the Stage 2 work plan. Input about this is also included in the Darwin Workshop report.

6.0 COMMUNICATION ACHIEVEMENTS

Media:

See details in media section under generic deliverables

Publications:

Kellett, B., Bristow, K.L. & P.B. Charlesworth. 2004. Indicators, frameworks and sustainability. CSIRO Land and Water Technical Report No. xx/04 (A work in progress)

Bristow, K.L. 2003. Northern Australia Irrigation Futures: Building a basis for developing sustainable irrigation across northern Australia. ANCID Conference, 19-22 October, Shepparton, Victoria, Australia

Bristow, K.L. 2003. Northern Australia Irrigation Futures: Building a basis for developing sustainable irrigation across northern Australia. LWA Sustainable Irrigation Program Investors Forum, 19 October, Shepparton, Victoria, Australia

APPENDICES:

Appendix 1: NAIF Steering Committee

Terms of reference:

Objective:

The Steering Committee will provide strategic advice and guidance to the project to ensure that it secures adequate resourcing to develop, test, and deliver an acceptable framework to stakeholders to ensure sustainable development, management and improvement of irrigation systems in tropical Australia.

It will do this by:

1. Maintaining a close working relationship with the Project Leader and broader project team
2. Ongoing review and approval of project goals and objectives, timelines and implementation / delivery strategies
3. Identifying strategic project risks and approving actions to address these risks
4. Identifying, influencing and securing appropriate funding for the project to meet its goals
5. Identifying key data sources and activities (competing & synergistic) important to the success of the project
6. Assisting with communication between the project and key stakeholders in line with advice received from the Stakeholder Reference Group
7. Identifying comparable work being undertaken by other agencies/organisations
8. Collaborating closely with the Stakeholder Reference Group

Composition:

A small (8-10) skills based committee to provide strategic advice and guidance to ensure the NAIF project meets its goals. To be headed by an 'independent' Chair

Key skills required: *(need to match potential members to these skills and through this process pick up some broad 'representation')*

- Knowledge of and skills in project management and delivery (governance)
- Knowledge of and ability to influence / secure resource opportunities (resources)
- Knowledge of and skills in stakeholder engagement and communication strategies (engagement/communication)
- Knowledge and understanding of north Australian landscapes, environment and irrigation systems (technical aspects)

Steering committee membership:

1. Ian Prosser (Chair)
2. Kevin Devlin
3. Ian Smith (with Wayne Mollah as back-up)
4. Ross Dalton (with Lois Hunt as back-up)

5. Jos Mensink
6. Allan Dale
7. Andrew Kelly
8. Mathew Durack
9. Murray Chapman
10. Chair of the Stakeholder Reference Group

Appendix 2 NAIF Stakeholder Reference Group

Terms of reference:

Objective:

The Stakeholder Reference Group will advise and assist the project to ensure the project has a robust Stakeholder engagement strategy which meets the requirements of a broad network of stakeholders.

The Stakeholder Reference Group will act as a conduit in:

1. Working with stakeholders to identify key environmental, economic, social and cultural sustainability issues of relevance in meeting project objectives
2. Collaborating closely with the Steering Committee
3. Maintaining regular communication with the Project Leader and Steering Committee on key issues affecting stakeholder engagement and stakeholder issues
4. Identifying stakeholders and their requirements to assist the project in developing and delivering a robust stakeholder engagement strategy
5. Identifying opportunities for effective partnerships between the project and other stakeholders
6. Helping facilitate interagency and inter organisational collaboration and cooperation

Composition:

- The structure and composition will be determined to ensure that representation of and communication with a broad range of stakeholders is effectively achieved
- The reference group will ideally consist of a relatively small number of members (8-12) capable of representing a broad range of stakeholders
- The Chair of the reference group will also serve on the NAIF Steering Committee
- Members will possess knowledge of and skills in stakeholder engagement and communication strategies

Reference group membership:

Membership to be confirmed in consultation with key stakeholder groups

Attachment 1 Report on Stakeholder consultations in Western Australia

See attached report titled “Report of stakeholder consultations in Western Australia”

Attachment 2 Report on the Darwin Workshop

See attached report titled “Report of Darwin Workshop”