

PRESENTATION BY PRINCIPAL INVESTIGATOR AT NPSI INVESTORS FORUM, 23 OCTOBER 2005, MILDURA

Northern Australia Irrigation Futures

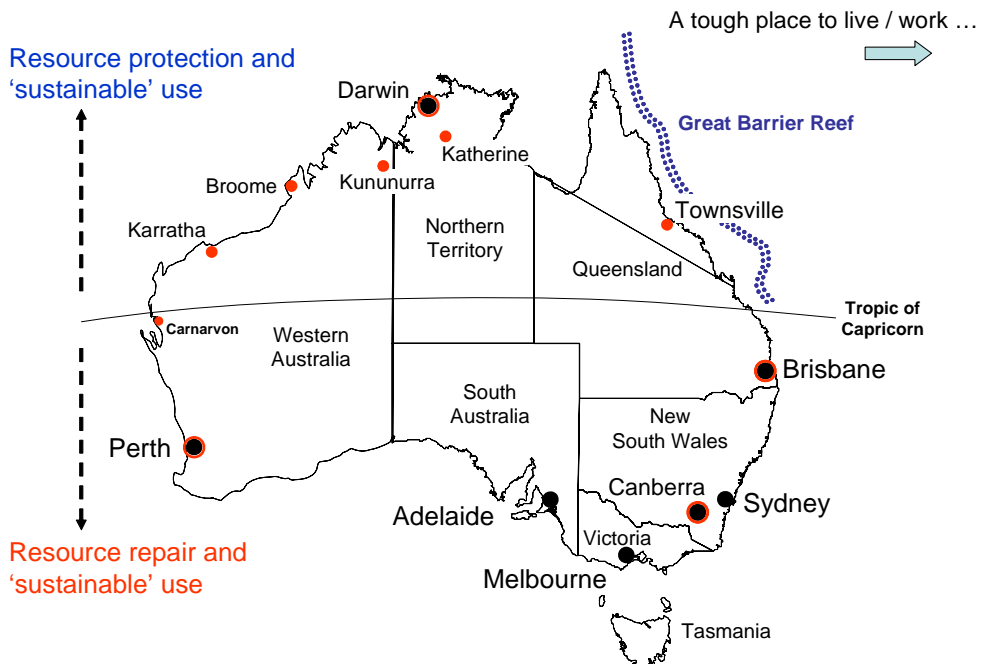
NAIF - Providing new knowledge, tools, and processes to support debate and decision making regarding irrigation in northern Australia



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CSIRO Land and Water / CRC IF



Northern Australia - unique features, opportunities, challenges



Water reform – COAG, NWI, ...

WA

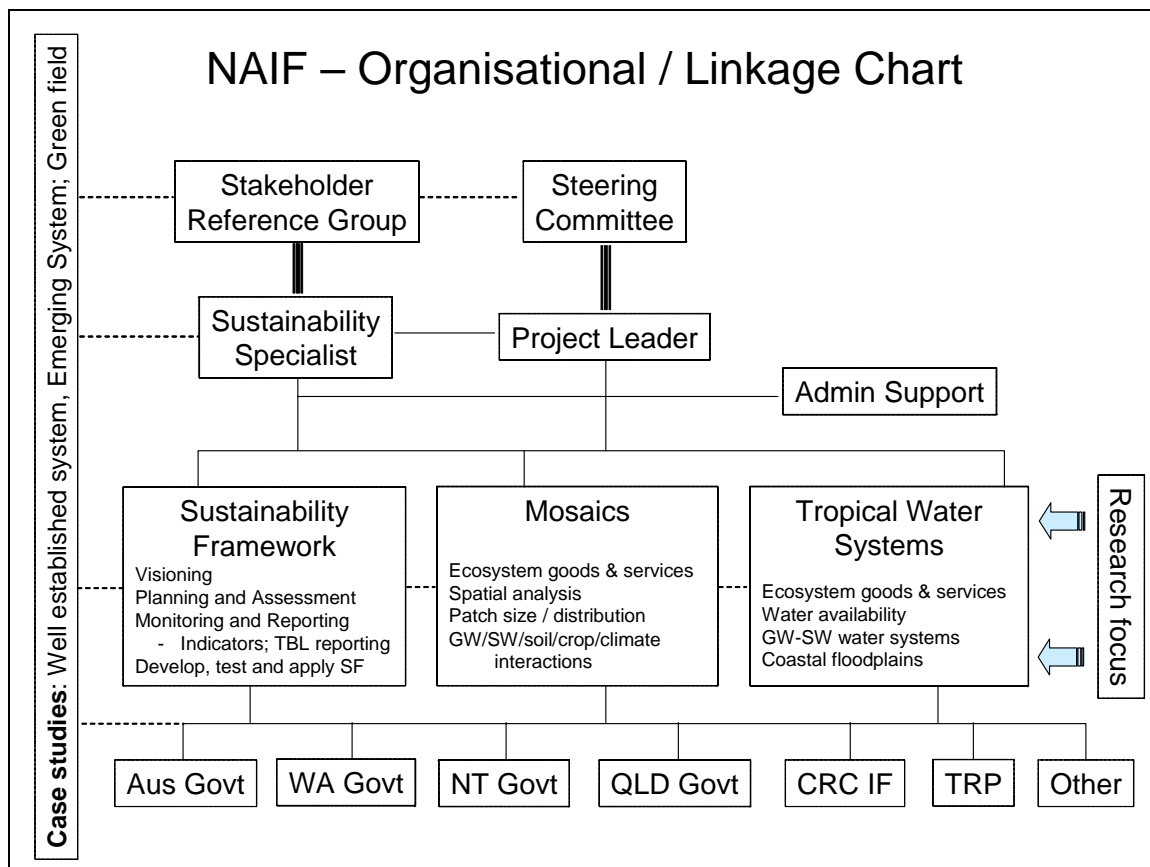
- WA Irrigation Review and Governance Review implementation
- New Department of Water
- Ord River Scheme – WA Gov and Traditional Owner agreement

NT

- Irrigation development in the Douglas-Daly-Katherine system
- Water allocation – environmental flows, water security
- Indigenous, environmental, fisheries issues

QLD

- QLD Water Plan
 - economic growth; sustainable water resource management
- Wild rivers policy
- Review / change water pricing
 - water resource management charge

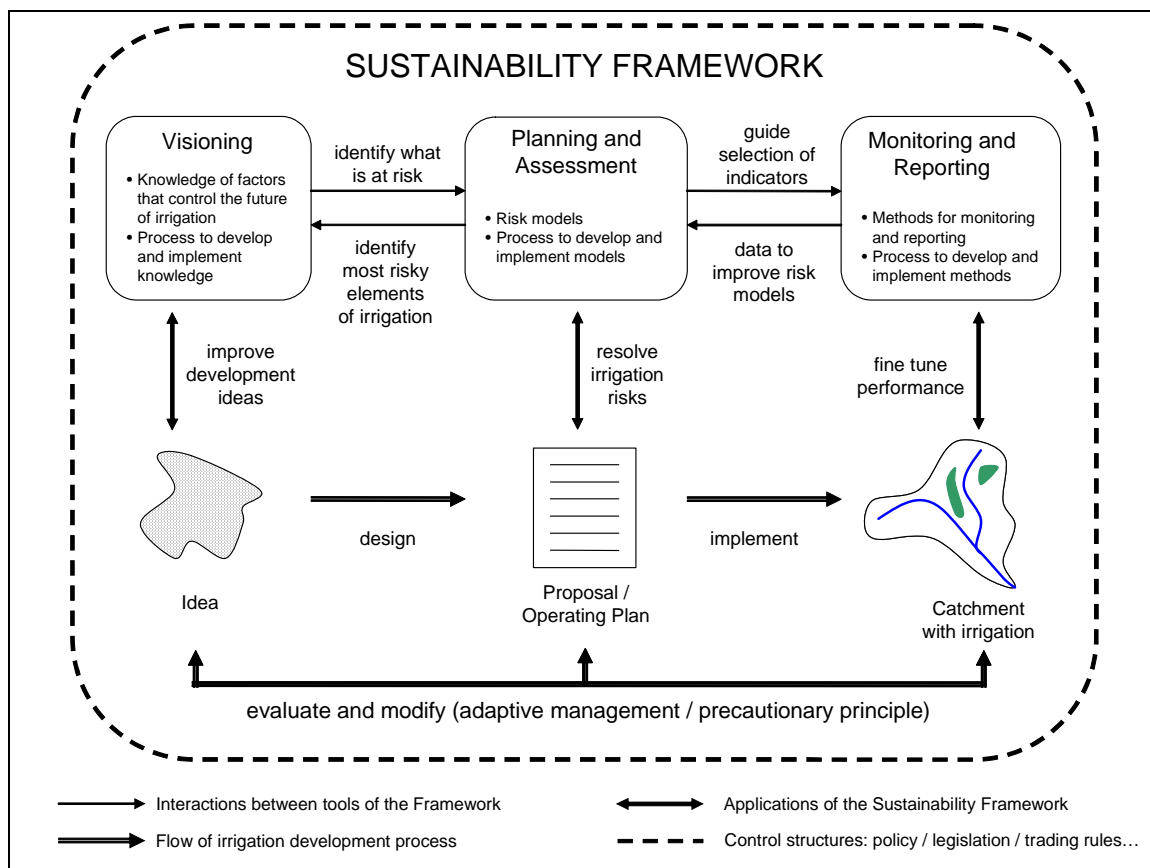


Learning's / Outcomes

- Working within very dynamic water reform environment
- Collaboration within and between Australian, WA, NT, QLD governments is increasing
- High ownership of the issues and the NAIF project
- High level of cash support – Sustainability Specialist
- Acknowledge its challenging and risky
- Commitment to the longer journey

Stakeholder Engagement

- Stakeholder Reference Group
 - Being established through call for EOI's and invitation
- Indigenous groups – no central body
 - Growing interest in economic development
 - Specific engagement strategies being developed
- Environment sector see NAIF as pro-development
 - Individual engagement required to develop confidence in process
- Broader community
 - irrigation needs to demonstrate it can deliver improved environmental performance (in existing and new areas)
- Further development of engagement strategies by SS

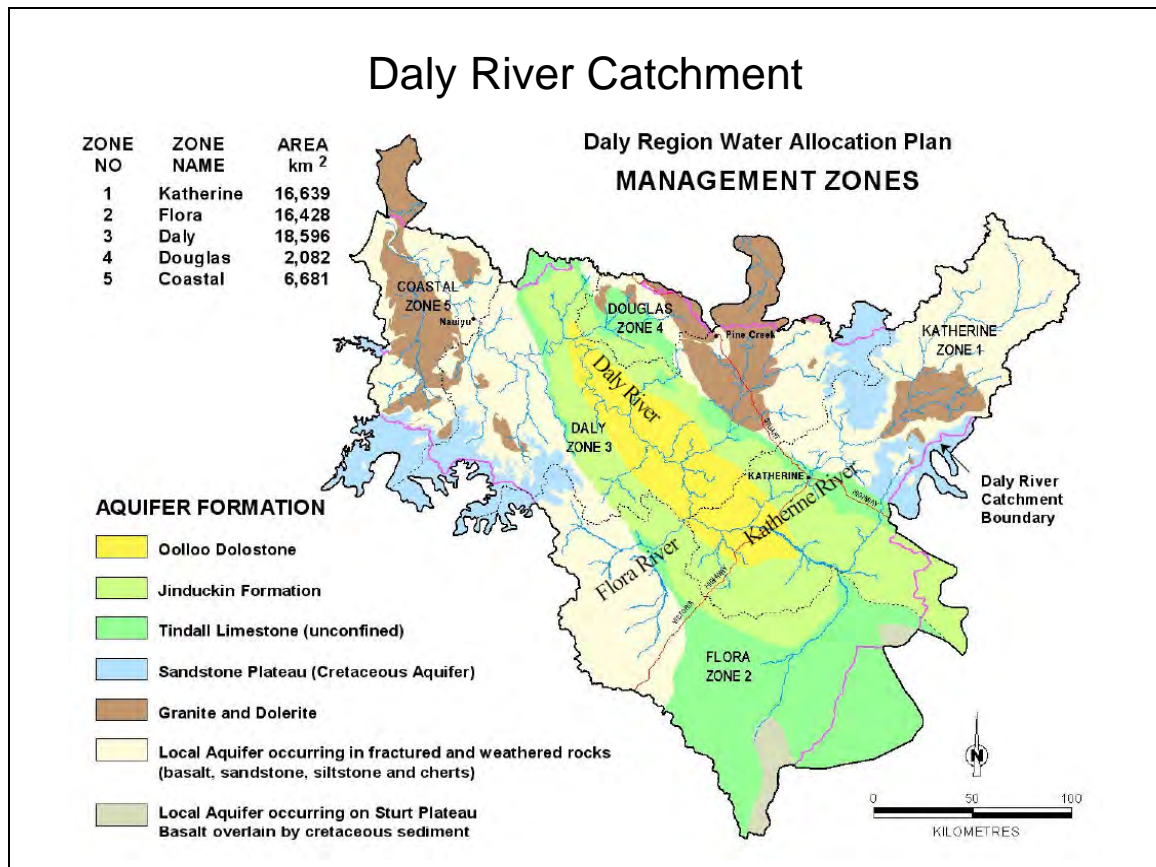


Learning's / Outcomes

- NAIF is making the connections between disparate / disjointed approaches to improve debate / decisions re sustainability
- Sustainability framework tools and processes applicable at range of scales – farm to catchment
- Can improve ERA process through development of conceptual models as part of the risk analysis
- Avoid bias in ERA process through improved stakeholder engagement plans
- Resilience assessment adds value to ERA through better understanding of thresholds, spatial and temporal effects, interdependencies

Tropical Water Systems

- Water resources / water availability
 - storage issues – dams, on-farm storages, aquifer storage
- Hydrogeological settings – variations across the north
- Coastal floodplains
 - Differences in salinity, water storage and supply capability
- River-floodplain interactions
 - maintaining connectivity, wetlands ...
- Land-ocean interactions
 - salt water intrusion, fisheries



Learning's / Outcomes

- Groundwater mostly viewed as 'underground storages'
 - Need to understand / manage ecological functions
 - Important for maintenance of base flows
- Connectivity of the water systems is critical
 - 1 ML GW = 1 ML SW
- Must set and meet water table targets – quantity and quality
- Biogeochemistry of groundwater systems important
 - Impacts on fate of solutes and quality of water downstream
- Need to address 'salt flushing'
 - groundwater discharge poorly understood / quantified
- Must understand end of catchment needs/targets
 - Account for needs at end of catchment (including marine) and work backwards up the system

Learning's / Outcomes

- WA, NT, QLD hydrogeologists working together
 - Review of hydrogeological systems of northern Australia
 - Analysis of the Ord, Katherine-Douglas-Daly and lower Burdekin irrigation systems: Implications to future design and management of tropical systems
 - Groundwater flow system characterisation / classification; with links to tropical rivers classification
- Debate as to need for and value of classification system and the pathway to developing the most useful system – WA, NT, QLD considering joint proposal with NAIF

Mosaics

- How can irrigation fit within the environment and what are the 'costs' to the environment (impact on ecosystem goods and services)
- Traditional large scale systems ('concentrate')
 - 'sacrifice' designated areas
- Smaller distributed patches of irrigation ('spread out')
 - patch size and distribution
 - farm / sub-region / scheme scale
 - same fate as traditional large scale systems - just take longer ?
- 'Mosaic' structure emerging in the NT Daly River Catchment

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NAIF – looking ahead

- Increasing capacity with full time Sustainability Specialist
- Indigenous interests in economic development and cultural values of water
- Emerging initiatives (Tropical SKI proposal, Tropical Rivers Program, CERF's, NWC interests in the north ...)
- NAIF to have major role in ANCID 2006
 - Darwin 15-18 October 2006; includes 'field trip' to Kununurra
- An adaptive approach is essential to
 - Deliver short term benefits
 - Long term change, which is the primary focus of the project

NAIF - Summary

Project knowledge, tools and processes will help

- improve transparency and objectivity in debates and decisions regarding irrigation and water resources
- increase confidence of investors, environmentalists, and broader community
- decrease pressure on managers and politicians
- deliver better water and environmental outcomes across northern Australia



Northern Australia – a tough place to live / work !



“...it is no coincidence that the northern part of Australia was not settled either by the farming Papuans nor by the fairly domesticated Indonesian Island inhabitants...”

(Henry Nix, Canberra 2005)

