



UniSA

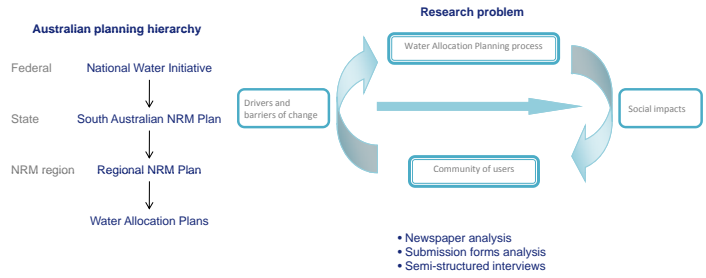
# Social sustainability of a groundwater allocation plan: Toward the resolution of an allocation dispute between agricultural and forest water users

Virginie GILLET

Toward sustainable groundwater in agriculture Conference, San Francisco  
15 June 2010



## Social sustainability of water allocation plan



UniSA

## Lower Limestone Coast, South Australia



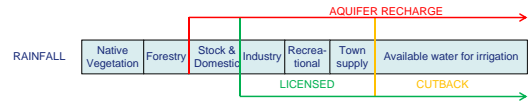
- SE NRM region: 28,000 km<sup>2</sup>
- Dunes above interdunal plains (wetlands)
- 64,000 inhabitants
- Mediterranean climate
- Rainfall: 850 mm/yr
- ET: 1200 mm/yr
- 2 aquifers:
  - Unconfined limestone aquifer: irrigation
  - Confined sand aquifer: town and industry
- Agriculture & forestry : 20% employ. (5% SA)
- Dryland agriculture and 80,000 ha irrigation
- Irrigated crops: pasture, vines, lucerne, potatoes
- 140,000ha: Pines and bluegums



UniSA

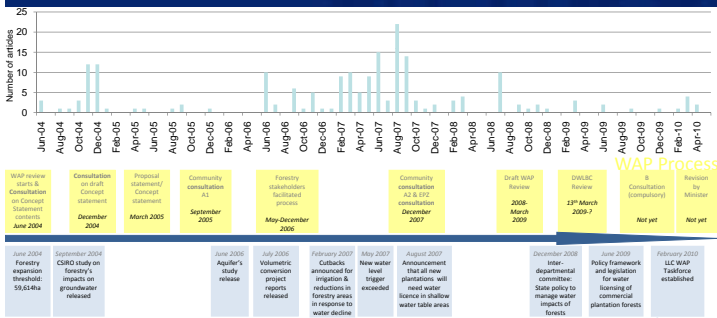
## Lower Limestone Coast Water Allocation Plan

- Adopted in 2001, review (every 5 years) started in June 2004, but still on-going
- Review to include more accurately forestry for its 2 impacts on the unconfined aquifer:
  - Aquifer recharge interception
  - Direct extraction in shallow water table areas



UniSA

## Articles in local newspaper on water allocation plan



UniSA

## Aquifer recharge interception

- June 2004 – February 2007: FORESTRY EXPANSION THRESHOLD
  - 59,614ha reserved for forestry expansion with no need of water licence
  - Only account for the aquifer recharge interception of forestry
  - Coalition: Agriculture & Pine vs Bluegum
  - Forestry sector divided: pine vs bluegum (future certainty vs dryland crop)
  - Opposition mostly voiced by politicians, forestry mostly silent
  - Farmers still have a problem regarding the direct extraction of forestry in shallow water tables

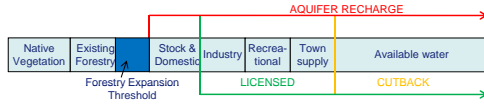




## Social sustainability perspective on the way the aquifer recharge interception is accounted



- Equity - Farmers claim inequity because:
  - direct extraction not accounted for in the water budget
  - only their water allocations are reduced when drought



- Future focus/Quality of life: Bluegum jobs threatened
- Community engagement: Bluegum industry not involved



## Direct extraction of forestry in shallow water table areas

- February 2007 – still on-going: FORESTRY WATER LICENSING & RETROSPECTIVITY ISSUES
  - State legislation requires amendment for introduction of forestry water licensing
  - Coalition evolved in August 2007: farming vs forestry
  - Opposition voiced by forestry (& politicians in lesser degree): 'tree not a centre-pivot'
  - Parallel arguments for both parties: federal interpretations, contested science, etc.
  - Farming with offensive discourse & forestry with 'victim' discourse
  - Local until March 2009 and then State negotiations: less local articles & blurred process
  - Delay with no time constraint for resolution



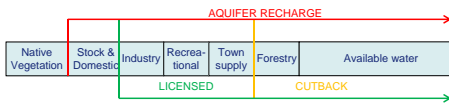
- Future: If forestry licensing occurs - COMPENSATION ISSUES?
  - But forestry given AUD\$ 81 million



## Social sustainability perspective on the way direct extraction is accounted



- Framing of equity:
  - Procedural & interactive justice for forestry
  - Distributive issue for farming (cutbacks)



- Future focus: Water budget accuracy and security
- Community engagement: Despite differences, both parties acknowledge their mutual inclusion and significance in the regional vitality
- Social values: carbon sequestration of forestry not integrated



## Discussion

- Sustainability is often used instead of 'environmental sustainability' in newspaper: lack of consideration of social sustainability
- However, greater consideration to fairness add stability to the debate (Syme and Nancarrow, 2008). This is extended here to the social sustainability concept to remove some of the contested elements of the dispute.
- Disagreements between forestry and farming on values associated with water regarding fairness/equity but occur at different levels (procedural & interactive vs. distributive justice) leaving room for consensus.
- Newspaper analysis is only one technique of the research that need to be validate (with submission forms and interviews)

### References

Syme, G., and B. Nancarrow. 2008. The social and cultural aspects of sustainable water use , p.230-247, in L. Crase, ed. *Water policy in Australia: the impacts of change and uncertainty*. RFF Press Book, Washington.



## Conclusion

Key consequences for decision makers

- Give as much attention to social sustainability as to its economic and environmental dimensions. Despite commons beliefs, it is not taken care only through the other two dimensions, nor through community engagement.
- Not only through social impacts mitigation but need to identify social objectives, mirroring the shift in environmental perspective (from mitigation of environmental impacts to determining environmental objectives).
- Social use and benefits including local societal objectives should be acknowledged and identified in water allocation plans by the community: food security, social redistribution, social cohesion, aboriginal cultural access to water, etc.