ALLIANCE FOR WATER STEWARDSHIP

Australian Field Trial Program



Water Stewardship: “using fresh water in ways that are both socially beneficial and environmentally sustainable”

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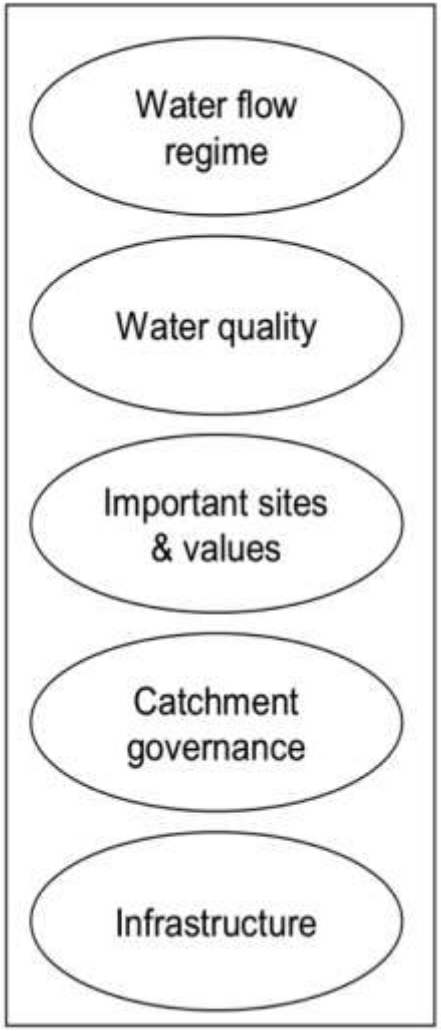
Water Environment Federation the water quality people
water witness ...because we're all downstream
EWP The Voice of Water
Water Stewardship Initiative
WWF
The Nature Conservancy Protecting nature. Preserving life.
CARBON DISCLOSURE PROJECT
PACIFIC INSTITUTE
The CEO Water Mandate
UNEP
IWMI International Water Management Institute

Principles of water stewardship (AWSS v2)



Principle 1: Water flow regime
The enterprise is committed to maintaining or restoring a socially, environmentally and economically beneficial water flow regime in the catchments affected by its management.

Principle 2: Water quality
The enterprise is committed to maintaining or restoring publicly recognized water quality standards in the catchments affected by its management.

Principle 3: Protection or restoration of important water-related sites and values
The enterprise identifies, protects and/or restores important water-related sites and values that may be affected by its management.

Principle 4: Responsible participation in catchment governance
The enterprise participates actively and responsibly to achieve equitable and effective catchment governance

Principle 5: Infrastructure maintenance
The enterprise participates actively and responsibly to maintain water infrastructure on its own sites and within catchments affected by its management

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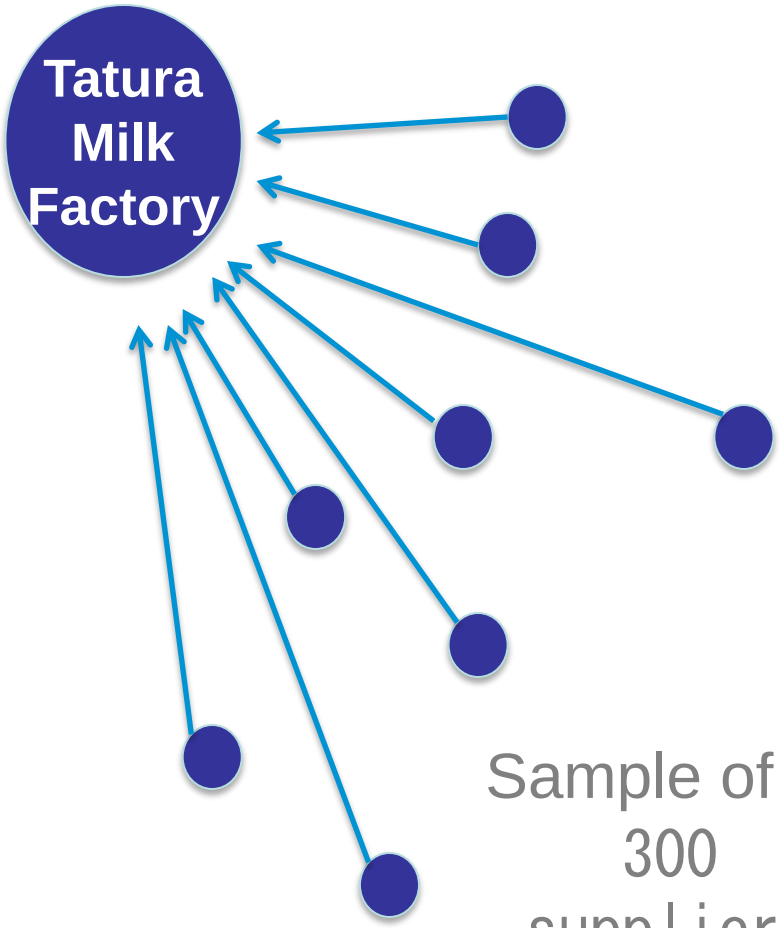
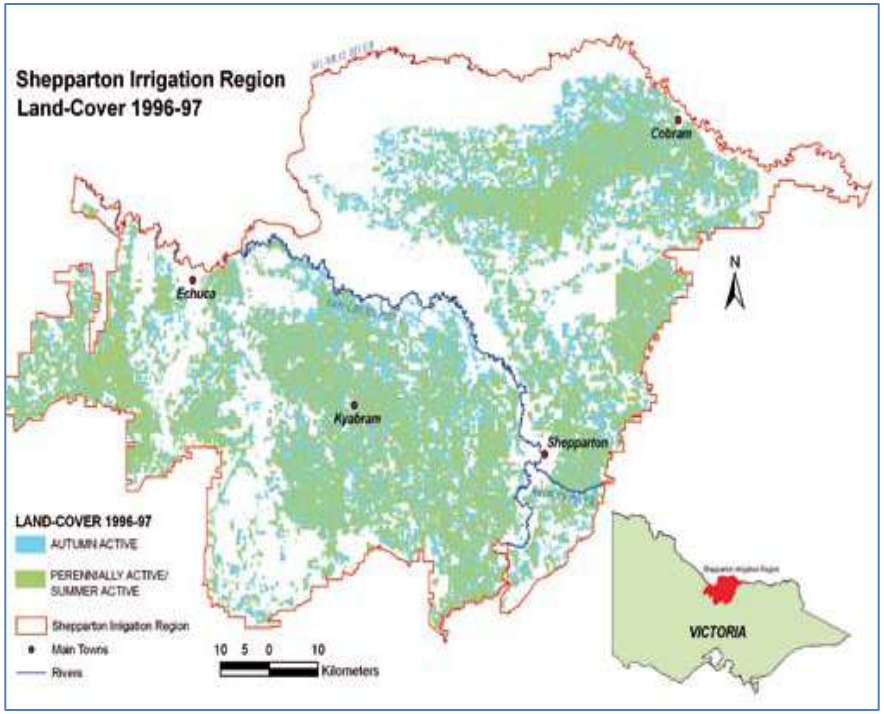
Goulburn Broken Catchment

- Area: 2.4m ha (6m acres)
- Only 2% of Basin land area
- But 11% of Basin water
- Supply links to adjoining watersheds
- Major water storages

Scope Field Trial





Sample of ± 300 suppliers

Abbreviated Methodology

1. Review Catchment Goals against AWSS Principles
2. Review Sub-Catchment Goals
3. Evaluate Enterprise
4. Evaluate Indirect (growers)
5. Engage growers
6. Audit Review
7. Reference Group Review


(Source: MDBA)

Catchment targets: Flow

- Goulburn/Broken Regional River Health Strategy
  - Management Unit L1 and U1
  - Environmental Flows (in future)
- SIR Program
  - Farm Program
  - Farm Water Program
- Northern Sustainable Water Strategy
  - Allocations/entitlements
  - On farm efficiency
  - Trading
- MDB Cap
  - Diversion limits
  - MDB Plan (draft)


(Source: MDBA)

Catchment targets – flow regime

Table 11: Scenario summary descriptions for Goulburn Weir to Murray River reach

GOULBURN RIVER – DOWNSTREAM REACH	SCENARIO 1 WORST DROUGHT 06/07 inflows	SCENARIO 2 VERY DRY 90% POE	SCENARIO 3 DRY 70% POE	SCENARIO 4 AVERAGE 50% POE	SCENARIO 5 WET 30% POE	SCENARIO 6 VERY WET 10% POE
Water Supply	**40% HRWS allocation** Perhaps 80% available as private carryover	**64% HRWS allocation** Perhaps 80% available as private carryover	**100% HRWS allocation** Perhaps 80% available as private carryover	**100% HRWS allocation** Perhaps 40% available as private carryover Dam spilling	**100% HRWS allocation** Perhaps 20% available as private carryover Dam spilling	**100% HRWS allocation** **100% LRWS Allocation** No carryover available Dam spilling
Expected River Flow and Water Management	Effectively no unregulated flows in winter/spring	One or two freshes (2,000-14,000 ML/day) in winter/spring of short duration	One to three freshes (3,000-20,000 ML/day) in winter/spring of short duration	Strong base flows (2,000-10,000) and one or two high flows (20,000-50,000) in winter/spring	Strong base flows (2,000-20,000) and one to three high flows (30,000-80,000) in winter/spring	Strong base flows (2,000-20,000) and several high flows (>20,000) and at least one major flood in winter/spring
	Normal 400 ML/day minimum flow at McCoys Bridge from July to October	Normal 400 ML/day minimum flow at McCoys Bridge from July to October	Normal 400 ML/day minimum flow at McCoys Bridge from July to October	Normal 400 ML/day minimum flow at McCoys Bridge from July to October	Normal 400 ML/day minimum flow at McCoys Bridge from July to October	Normal 400 ML/day minimum flow at McCoys Bridge from July to October
	Normal minimum summer flow at McCoys Bridge of 350 ML/day	Normal minimum summer flow of at McCoys Bridge 350 ML/day	Normal minimum summer flow at McCoys Bridge of 350 ML/day	Normal minimum summer flow at McCoys Bridge of 350 ML/day	Normal minimum summer flow at McCoys Bridge of 350 ML/day One or two summer freshes could occur naturally.	Normal minimum summer flow at McCoys Bridge of 350 ML/day One or two summer freshes could occur naturally.
	220 GL of IVT available to deploy	252 GL of IVT available to deploy	300 GL of IVT available to deploy	167 GL of IVT available to deploy	100 GL of IVT available to deploy	No IVT deployed
	30 GL Water Quality Reserve available	30 GL Water Quality Reserve available	30 GL Water Quality Reserve available	30 GL Water Quality Reserve available	30 GL Water Quality Reserve available	30 GL Water Quality Reserve available
Environmental Entitlement Volumes Available	Commonwealth – 88 GL State – 9 GL TLM - 16 GL	Commonwealth – 117GL State – 9 GL TLM - 25 GL	Commonwealth – 160GL State – 10 GL TLM - 40 GL	Commonwealth – 150GL State – 10 GL TLM - 40 GL	Commonwealth – 130GL State – 10 GL TLM - 40 GL	Commonwealth – 130GL State – 17 GL TLM - 197 GL

Catchment targets - groundwater

- Key agency:
- Goulburn Murray Water
- Target:
- Keep groundwater below 2m

(Source: MDBA)

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Catchment targets - Quality

- CMA Water Quality Strategy (River Health Strategy)
- SIR Program
  - Salinity
- EPA SEPP
- Basin Salinity Management Strategy (MDBA)
- Irrigation Drainage MOU
- GV EPA license requirements for waste water


(Source: MDBA)

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Catchment targets - quality

Table A1: Environmental quality objectives for rivers and streams - water quality... continued

SEGMENT	INDICATOR							
	Total phosphorus (µg/L)	Total nitrogen (µg/L)	Dissolved oxygen % saturation		Turbidity (NTU)	Electrical conductivity (µS/cm)	pH (pH units)	
	75th percentile	75th percentile	25th percentile	maximum	75th percentile	75th percentile	25th percentile	75th percentile
• mid-reaches of Ovens, Goulburn and Broken catchments	≤25	≤600	≥85	110	≤10	≤500	≥6.4	≤7.7
Murray and Western Plains								
• lowlands of Kiewa, Ovens, Goulburn & Broken catchments	≤45	≤900	≥85	110	≤30	≤500	≥6.4	≤7.7
• lowlands of Campaspe, Loddon & Avoca catchments	≤45	≤900	≥80	110	≤30	≤1500	≥6.5	≤8.3
• lowlands of Wimmera catchment & Mallee Basin	≤40	≤900	≥80	110	≤10	≤1500	≥6.5	≤8.3
• lowlands of Glenelg & Hopkins catchments, & Portland, Corangamite and Millicent Coast Basins	≤40	≤900	≥85	110	≤10	≤1500	≥6.5	≤8.3

SEPP 2003

Catchment governance

- CMA Board
- SIR Program
- CMA Regional Catchment Strategy
- CMA Community Engagement Advisory Groups
- GV Water Board and Customer Reference Group (web-site)
- GM Water Service Committees (for irrigation areas)
- GM Regional Water Service Committees (groundwater)
  - Code of Conduce
  - Charter

Catchment infrastructure

- NVIRP
  - Rationalise supply points and infrastructure
  - NVIRP – Phase 1 and 2 efficiency gain of 429GL/year
- GV Water
  - Town water infrastructure (potable water/wastewater)
- GM Water
  - Bulk supply (irrigation)


(Source: MDBA)


(Source: MDBA)

Water related sites & values

- River Health Strategy (wetlands)
- CMA Indigenous program

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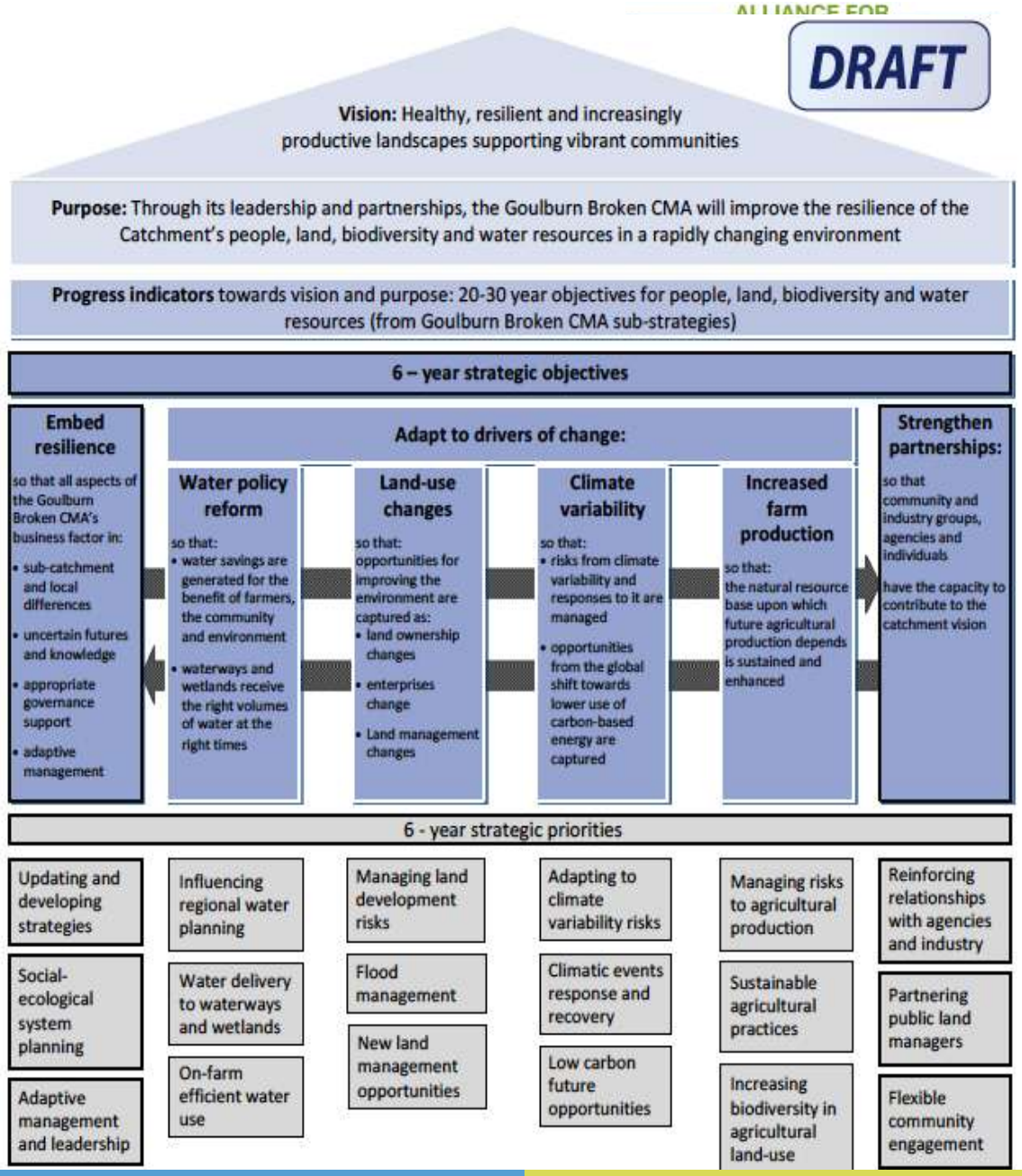
Catchment targets – important sites & values

Program	Program Objective
Program A: Protection and Enhancement of High Priority Waterways	Protect and enhance identified high value environmental, social and economic assets over 1,060 km of river
Program B: Protection of Ecologically Healthy Rivers	Ecologically Healthy River status maintained over 112 km or river
Program C: Creating More Ecologically Healthy Rivers	286 km of river improved to Ecologically Healthy River status
Program D: Improvement to other rivers	Rehabilitation of the streamside zone over 20% of non-priority reaches by 2014
Program E: Preventing damage from inappropriate development	No decline in river health condition due to inappropriate development
Program F: Engagement and Capacity Building	Ensure that the Goulburn Broken community has the capacity to implement all priority actions that contribute to the objectives of the Regional River Health Strategy
Program G: Monitoring, Evaluating and Reporting	An effective monitoring, evaluation and reporting program developed and implemented.

Goulburn-Broken River Health Strategy

Catchment Strategy – whole catchment



Building linkage to farm level

- What' in it for me?
- Already have industry tool DairySAT
- Too many standards and requirements
- Compliance burden and costs

- Not a clear link between catchment plan and individual farmers
- Competition for growers among factories
- Factory has own EMS

Low industry uptake


The Checklist...

DairySAT

Step One

This is the first step in the DairySAT process, it is not a test! It is to help you think about the environmental issues on your farm.

Fill out this Checklist and if you answer YES or if you are unsure of your answer use the DairySAT – Guide. Page number references are at the end of each section.

This information is for your own purposes and will not be used by anyone else.

EFFLUENT MANAGEMENT — YES NO

1. Would you like to know if your effluent system meets acceptable industry practice?
2. Does your Effluent storage system ever overflow or leak?
3. Any feed or calving pads, become wet and boggy during wet months?
4. Would you like to reduce time and water used washing down the yards?
5. Could tracks and laneways experience effluent run off?

If you would like more information on any of these areas use the DairySAT Guide pages 6-11

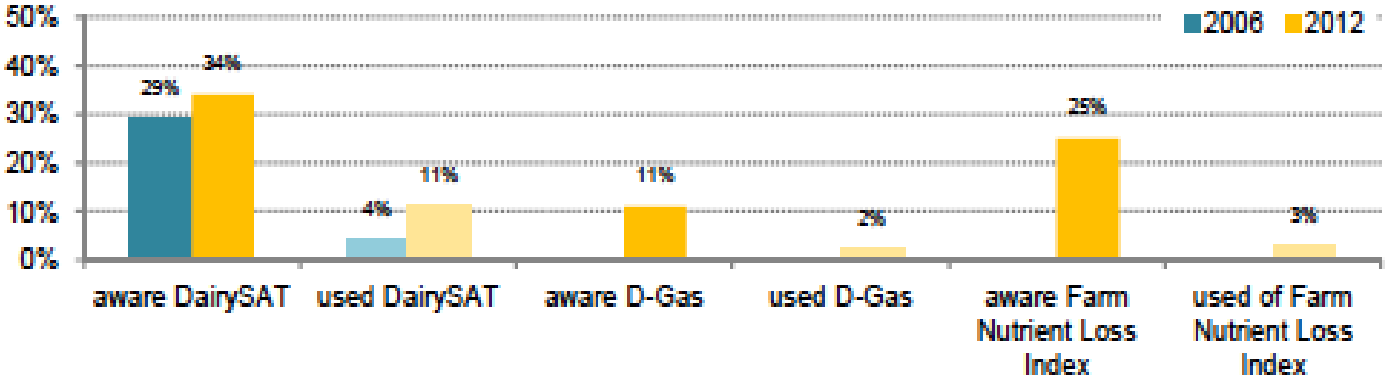
IRRIGATION — Irrigation not used — YES NO

1. Would you like to match irrigation water applied to plant water requirements?
2. Would you like to use monitoring tools which assist in irrigation application scheduling?
3. Would you like to improve efficiency of water used (and paid for) by minimising and managing run-off?
4. Is equipment maintained only when it breaks down?

If you would like more information on any of these areas use the DairySAT Guide pages 13-15

Environmental farm assessment tools

assessment tool awareness and use
(base: all respondents)



Source: Dairying for Tomorrow (Dairy Australia) 2012

Emerging customer pressure

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Continuous improvement

Agrochemicals and fuels

Soils

Water

Biodiversity

Waste

Energy and Greenhouse gases

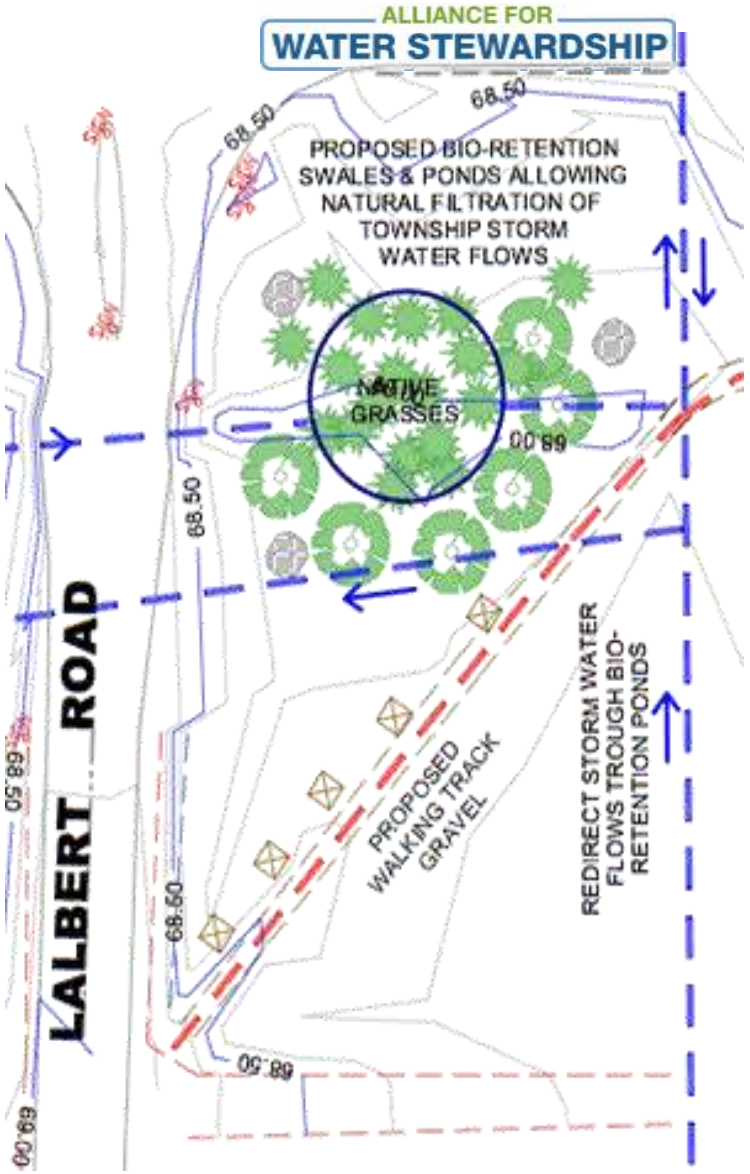
Social and human capital

Value chain and local economy

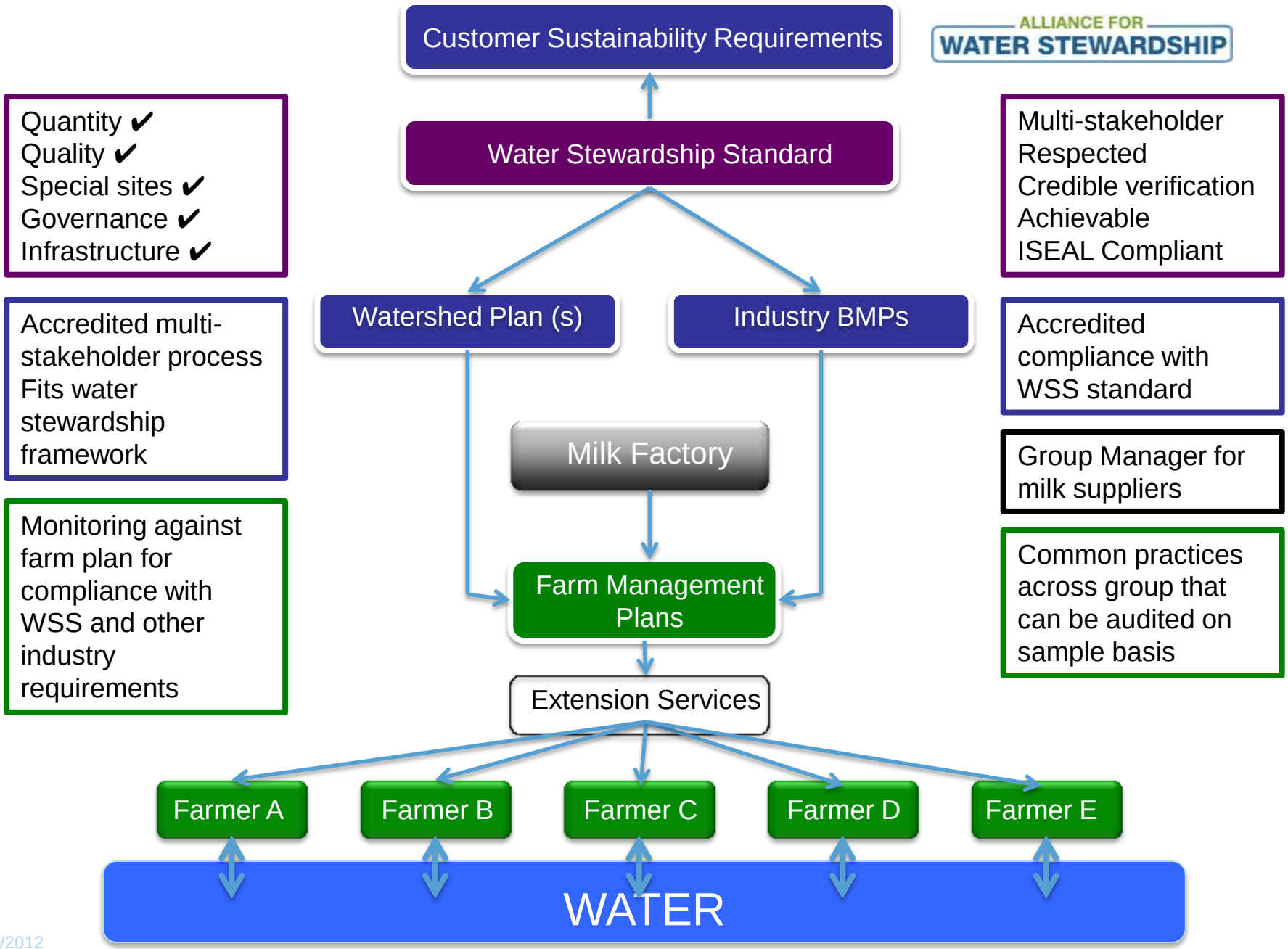
Animal welfare

Training

Whole Farm Plan



- Good tool for on farm compliance
- Needs to cover ongoing management
- Needs clear link to catchment goals


Customer Sustainability Requirements
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Water Stewardship Standard
Quantity ✔
Quality ✔
Special sites ✔
Governance ✔
Infrastructure ✔
Multi-stakeholder
Respected
Credible verification
Achievable
ISEAL Compliant
Watershed Plan (s)
Industry BMPs
Accredited multi-stakeholder process
Fits water stewardship framework
Accredited compliance with WSS standard
Milk Factory
Group Manager for milk suppliers
Monitoring against farm plan for compliance with WSS and other industry requirements
Farm Management Plans
Common practices across group that can be audited on sample basis
Extension Services
Farmer A
Farmer B
Farmer C
Farmer D
Farmer E
WATER

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Issues

- Regulated v Unregulated watershed (Governance)
- Original condition? ± 20%?
- Sustainability v Resilience
- Process v Performance
- AWS Draft 2