ALLIANCE FOR WATER STEWARDSHIP

ENGAGING INDUSTRY IN RIVER HEALTH

Water Stewardship in a Global Context

Inspiring big water users to be the best water users




Michael Spencer

Secretary Water Stewardship Australia

Chair Alliance for Water Stewardship

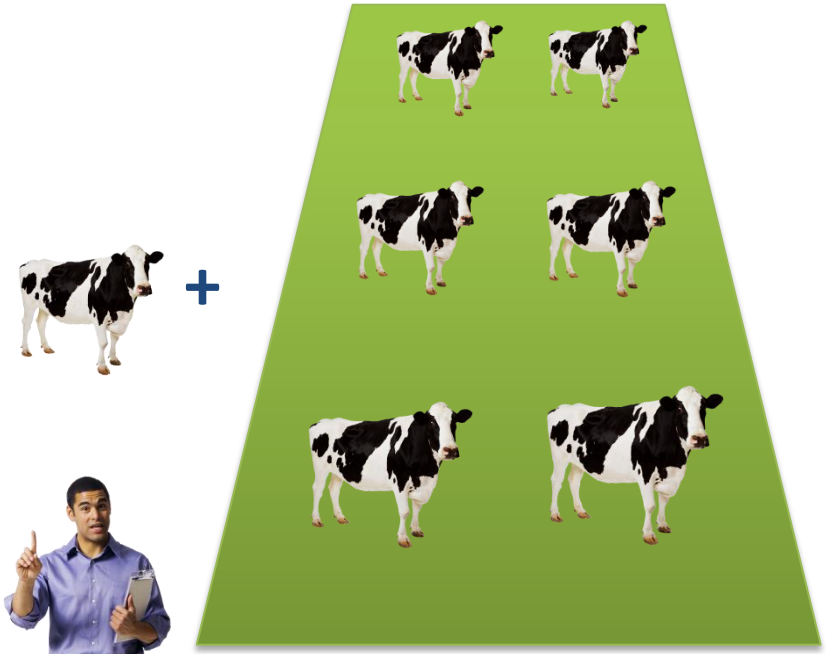
Portland 30 April 2015

AGENDA FOR TODAY

ALLIANCE FOR WATER STEWARDSHIP

- Common Pool Resources
- Addressing Water Challenges
- Bare Bones of Water Stewardship
- Business Drivers
- Case Studies
- Learning

MANAGING THE COMMONS



"Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons"

Garret Hardin *Tragedy of the Commons*, 1968

Rules for Common Pool Resources

- Clear boundaries & membership
- Congruent rules
- Collective choice arenas
- Monitoring
- Graduated sanctions
- Conflict resolution mechanism
- Recognised rights to organise

Elinor Ostrom *Governing the Commons*, 1990

A STEWARDSHIP SYSTEM

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Multi-stakeholder governance

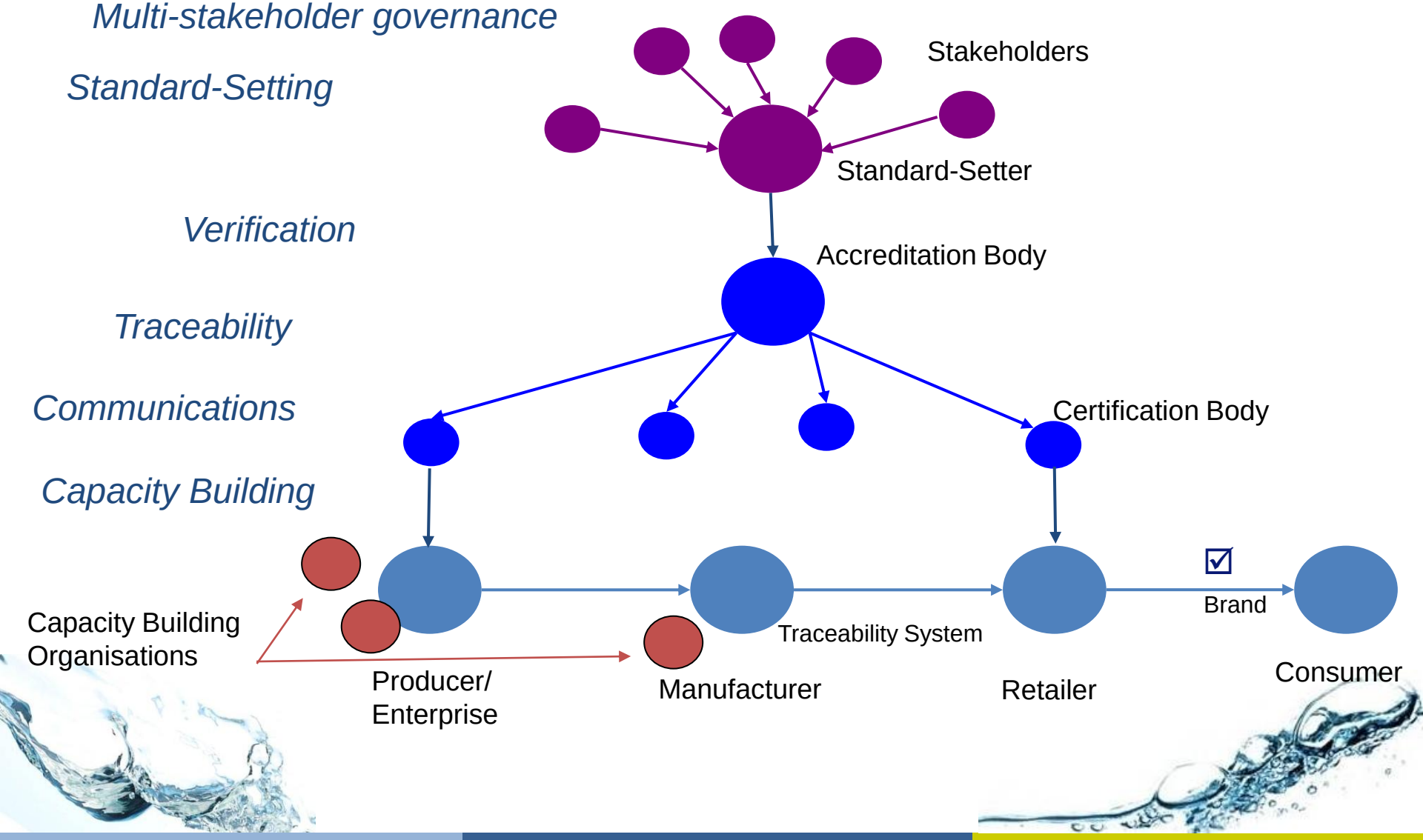
Standard-Setting

Verification

Traceability

Communications

Capacity Building



GROWING WATER CHALLENGES

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By 2030, 47% of the world's population will be living in areas of high water stress.

Without changes in business practices, the demand for fresh water could be 40% higher than supply by 2030

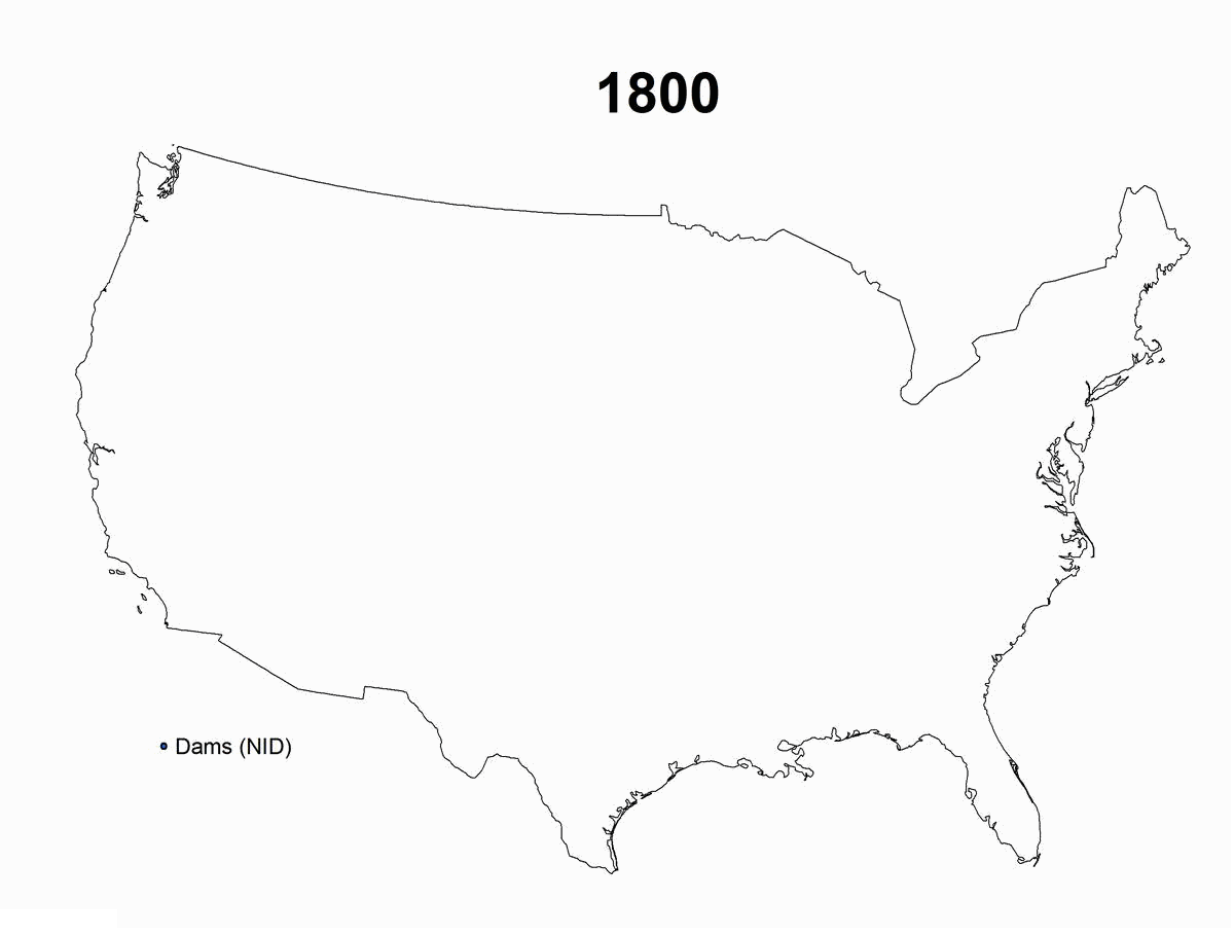
WEF Global Risk Survey rates risk of a global water crisis #1 on impact and #8 on likelihood

Supply chains water risks (regulatory , drought and precipitation extremes) due for elevation.

The most significant environmental environmental concern and in the top 10 of all concerns

93% of power generation in China relies on water. No water = no power

SEARCING FOR SOLUTIONS



TOOLS AND OPTIONS

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ENGINEERING & TECHNOLOGY

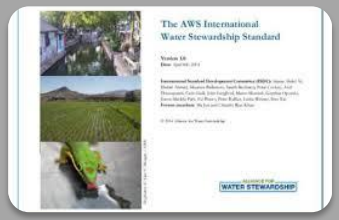
- Cost
- Physical Capacity

LEGAL AND REGULATORY

- Complexity
- Compliance costs & capability

ECONOMIC AND FINANCIAL

- Social Equity
- Political pressure



VOLUNTARY & BEHAVIOUR CHANGE

- Incentives
- Barriers to entry

MATCHING ACTION TO CHALLENGES

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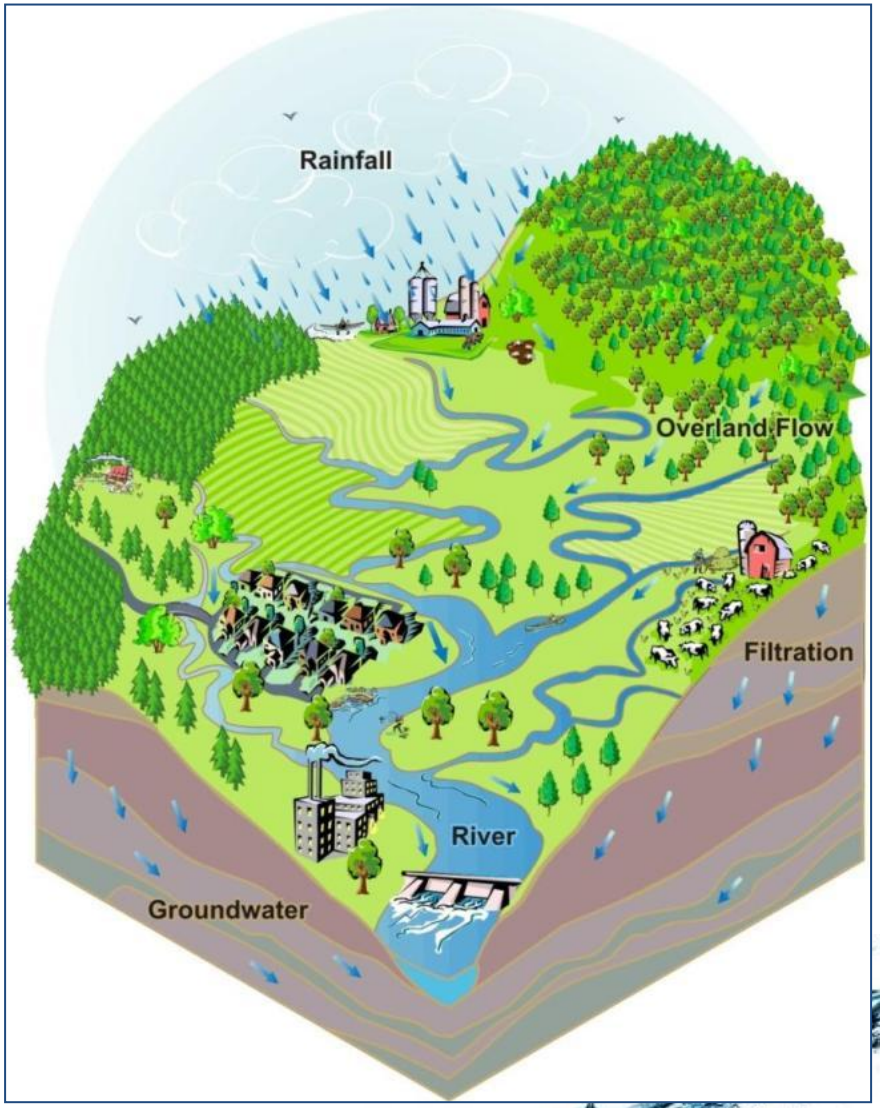
Water Challenges	Influences & Actions
 Scarcity	 Water Balance
 Quality	 Water Quality
 Environment	 Important Water Related Areas
 Social Equity	 Water Governance

SITE ACTION FOR CATCHMENT IMPACT

Addressing water challenges

- Every catchment is different
- Multiple perspectives on challenges and solutions
- Action a water using site can take to address catchment challenges?
- A process that can adapt to different catchments



RULES DEVELOPMENT GROUP (ISDC)

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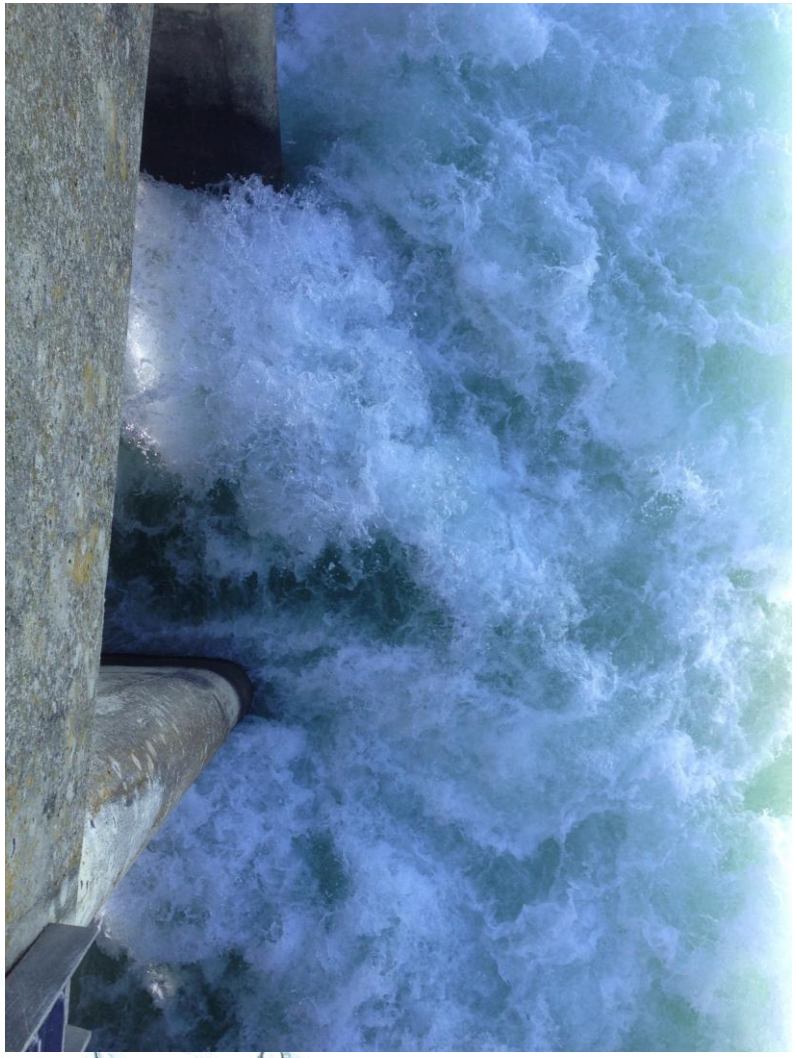
DEFINITION OF WATER STEWARDSHIP

ALLIANCE FOR WATER STEWARDSHIP

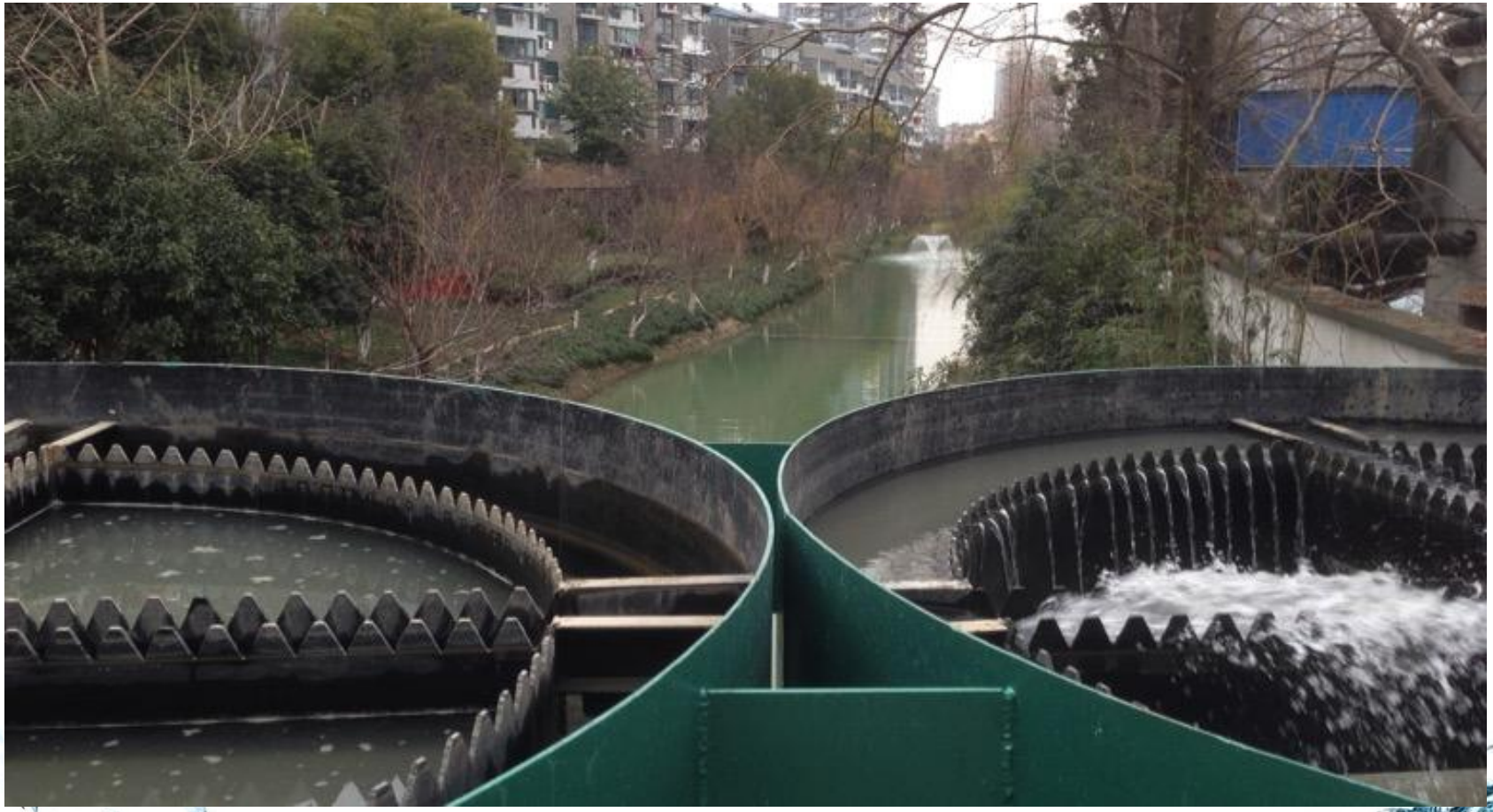


The use of water that is

- *socially equitable, environmentally sustainable and economically beneficial,*
- *achieved through a stakeholder-inclusive process,*
- *and that involves site and catchment-based actions.*

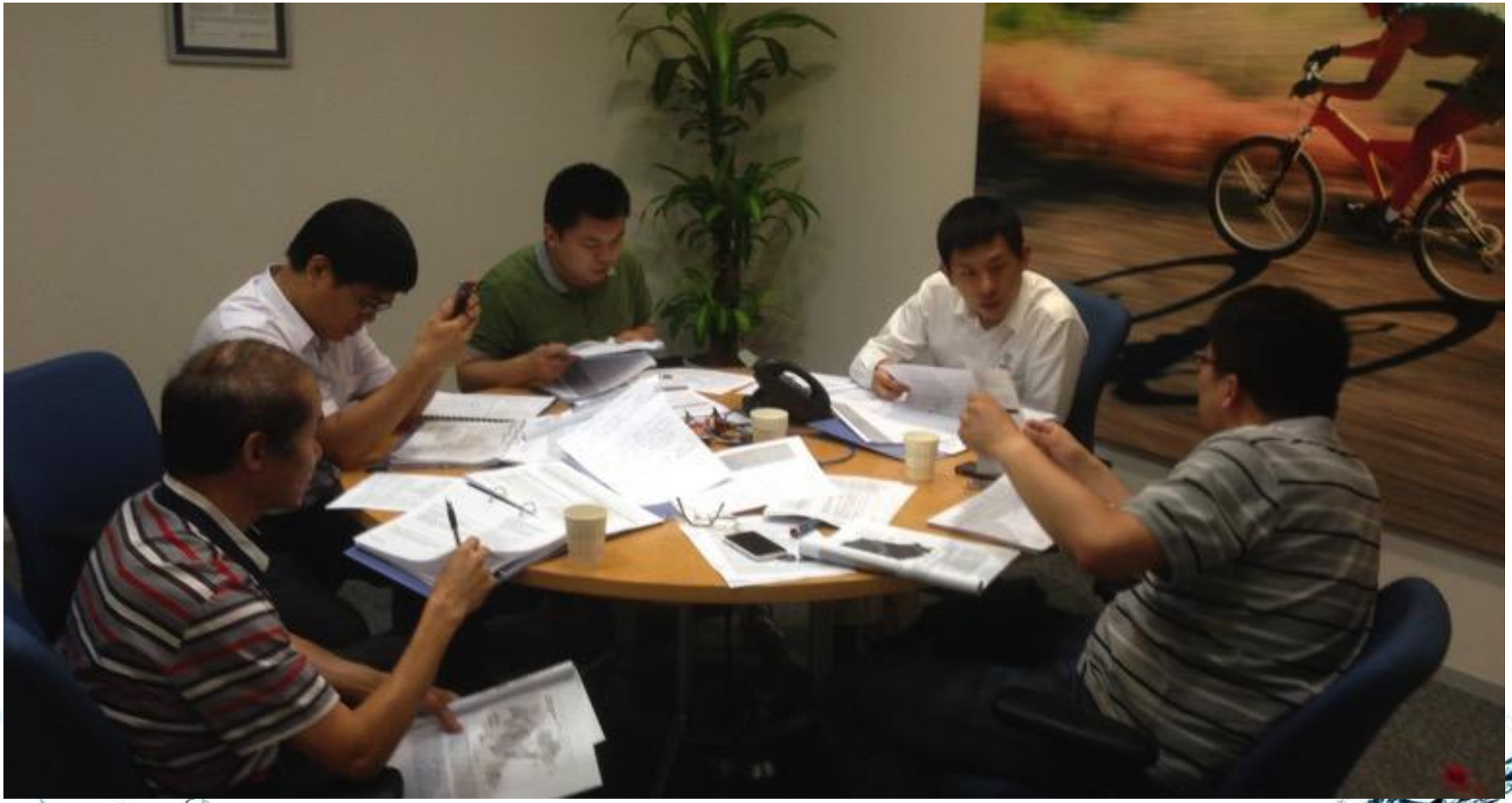
Sustainable Water Balance

Good Water Quality



Healthy Important Water Related Areas

Good Water Governance



PROCESS: WATER STEWADSHIP STANDARD

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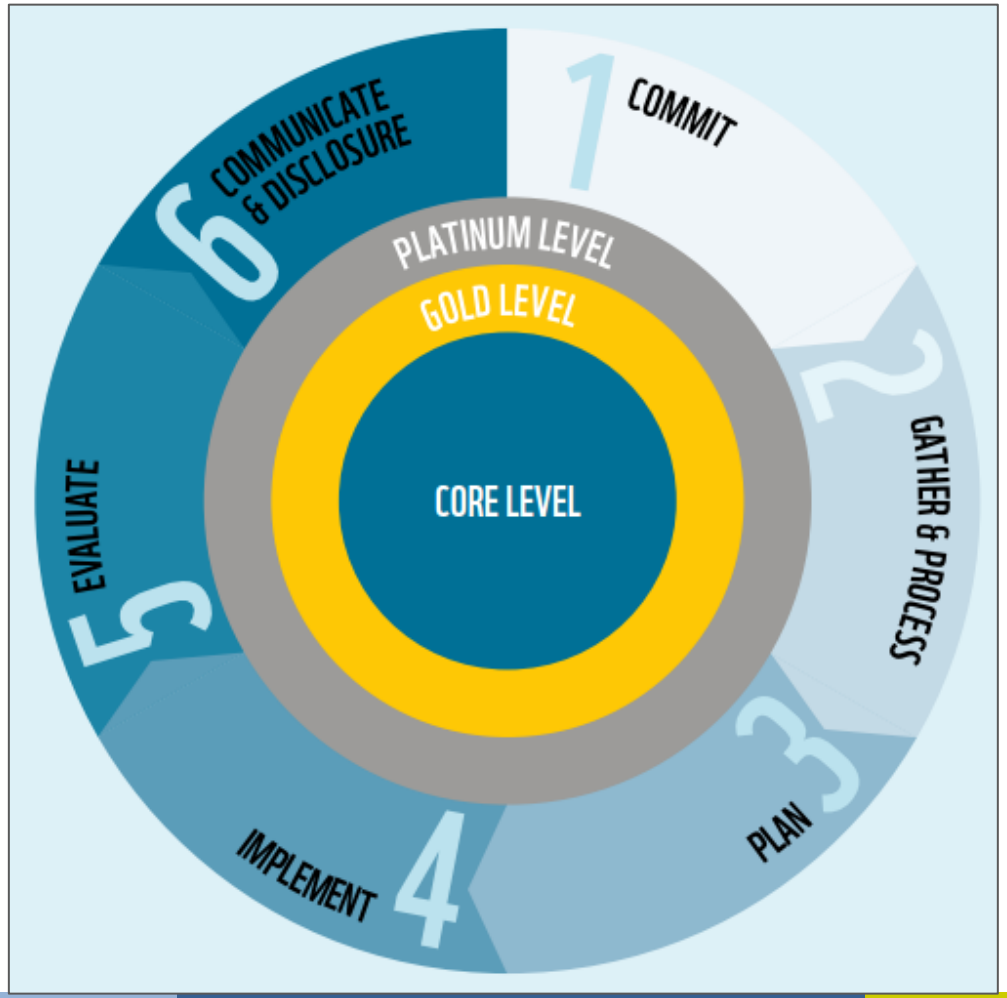
1. GOVERNANCE	2. BALANCE
3. QUALITY	4. IWRAs



CDP DRIVING SUSTAINABLE ECONOMIES

The CEO Water Mandate

Global Reporting Initiative

AQUEDUCT Measuring and Mapping Water Risk

UNEP

Water Footprint NETWORK

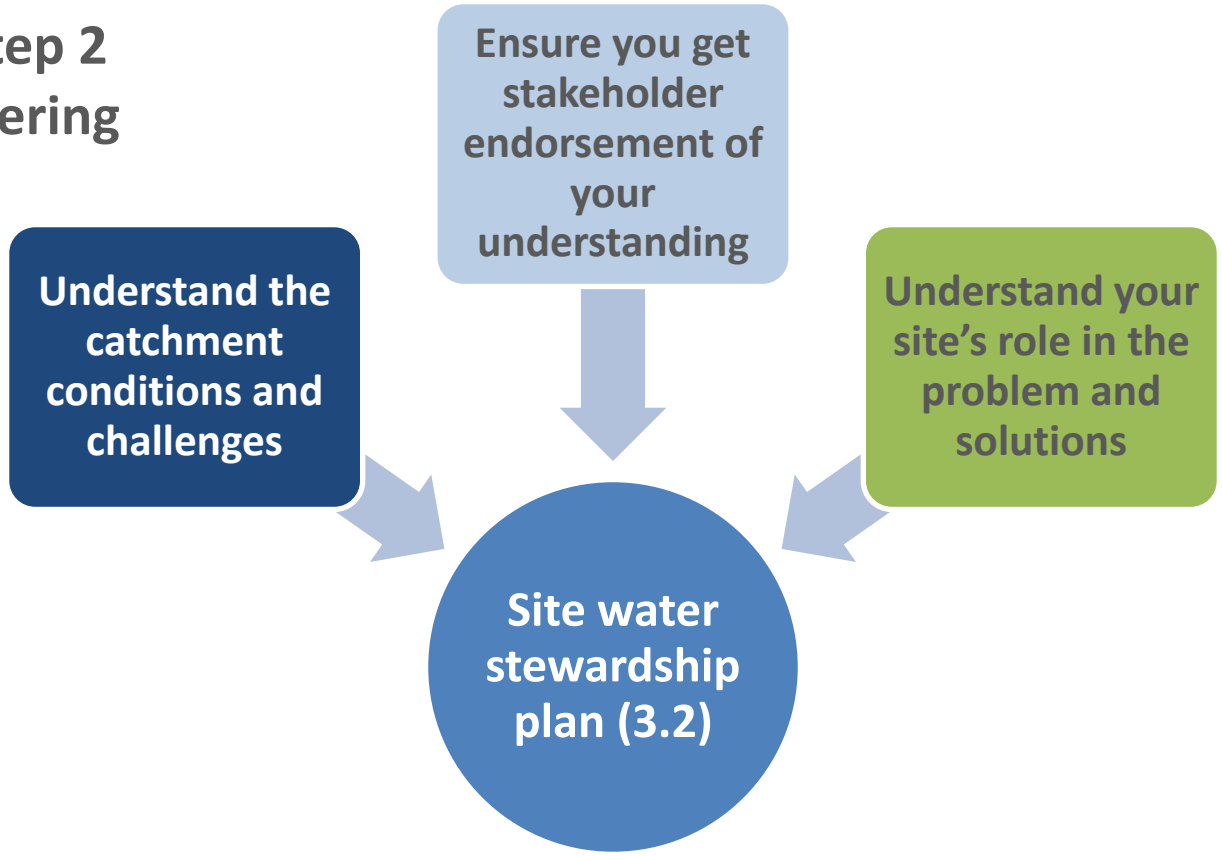
ISO International Organization for Standardization

GEMI

Global Water tool

STEP 2: GATHER & UNDERSTAND

Keys to Step 2 data gathering



SITE WATER STEWARDSHIP PLAN (example)

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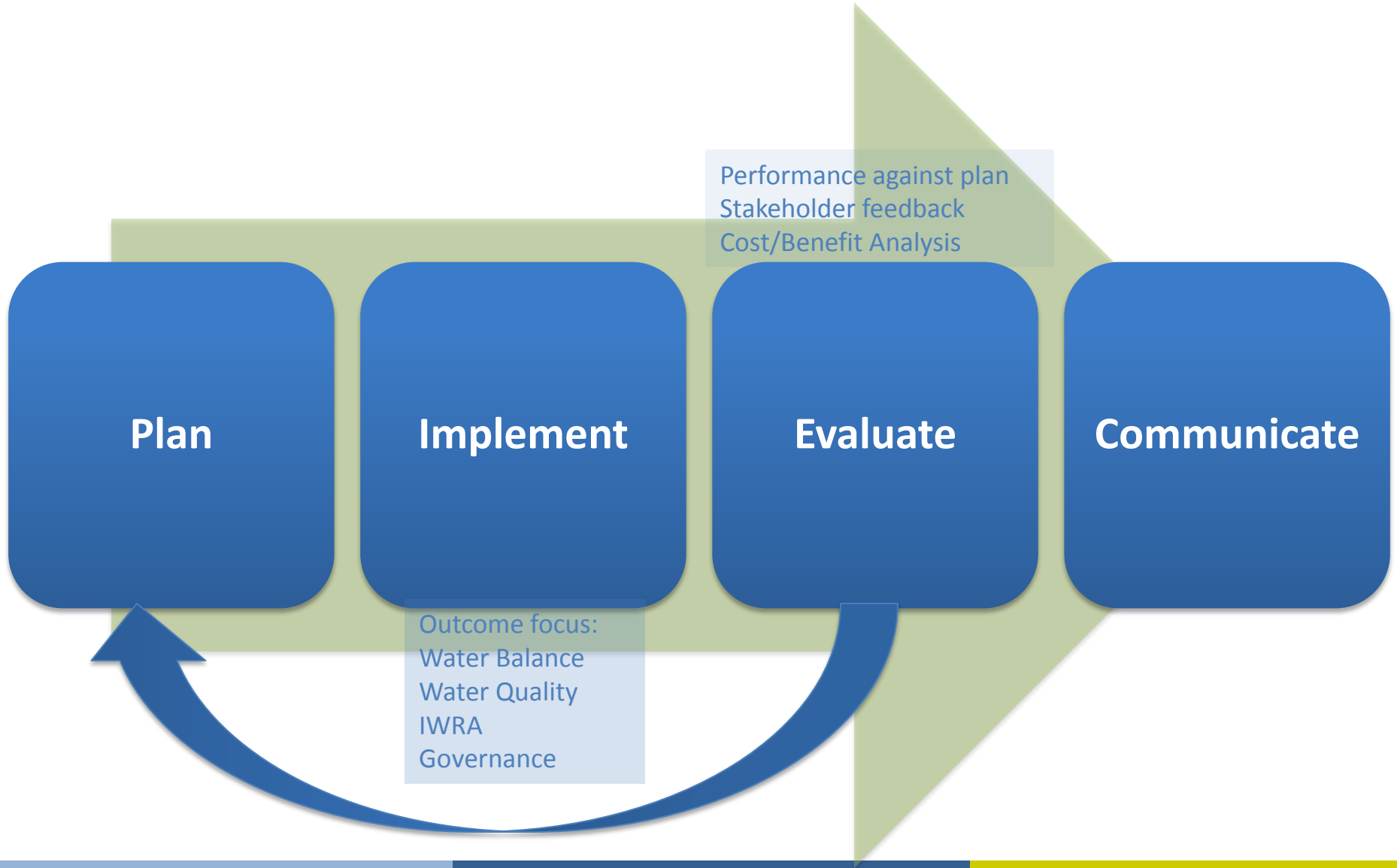
OBJECTIVES	TARGETS	METRICS	ACTION	COST-BENEFIT	LINKS TO OUTCOMES	LINKS TO CRITERIA	RESPONS-IBILITY	ACCOUNT-ABILITY	START	END
Maintain a healthy wetland at site	By November 2014 map and describe the status of IWRAs on site	Presence of map Species abundance	Identify IWRAs on site	Cost: $2k/yr +staff time Benefit: Natural Infrastructure asset $50k	Outcome: Good status of IWRAs Shared challenge: Contribute to restoration of lost biodiversity	2.4, 4.4	J. Smith	H. Brown	01-08-2015	01-09-2016
Improve water intensity by 50% by 2020 from 2010 levels	Decrease cooling water use by 10% by Q1, 2016	M3 of cooling water/yr or $ or kg product $Energy consumed /$ or kg product	Improve water efficiency on site	NPV $500k @8% discount rate	Outcome: Sustainable water balance Shared Challenge: Over-allocation in catchment	4.4,4.2	X. Lin	E. Petrov	01/09/2015	30/09/2016
Contribute to improved water quality	ETC …	ETC …	ETC …	ETC …	ETC …	ETC …	ETC …	ETC …	ETC …	ETC …

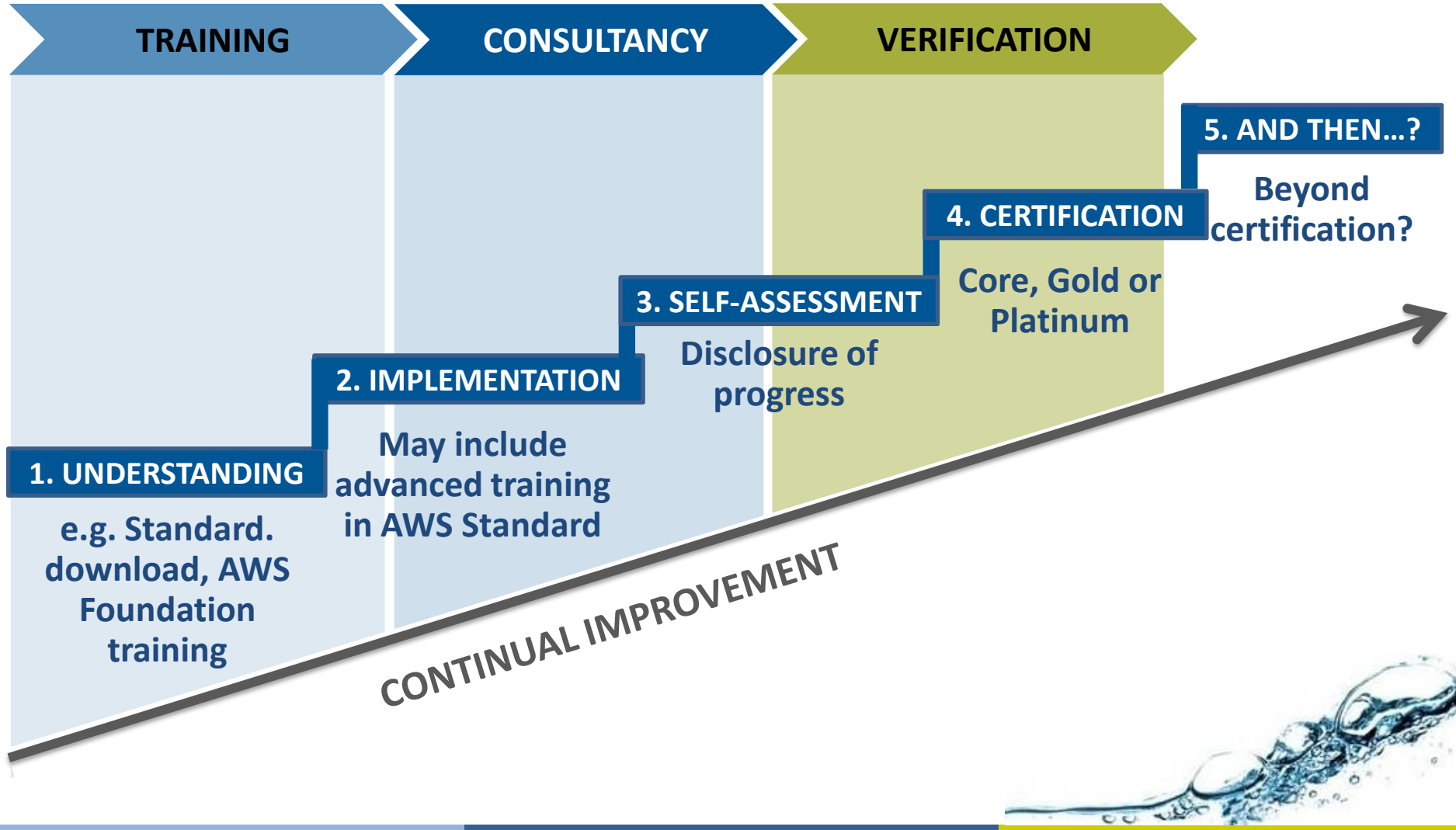
IMPLEMENT, EVALUATE, COMMUNICATE

ALLIANCE FOR WATER STEWARDSHIP



FOUNDATION MODULE SUMMARY

AWS services (delivered directly or via accredited providers)



NEED FOR WATER STEWARDSHIP: PROMOTERS

Natural Resource Managers

- Catchment Managers
- State & Federal NRM Agencies

Retailers

- Supply chain managers
- Brand & reputation mangers

Supply chain leaders

- Global multi-nationals (aggregators)
- Trusted brands (domestic & international)

Aid and Development Agencies

- Water management/WASH
- Sustainable development / SCP / RECP

Drivers

- Supply chain risks
- Consumer/community pressure
- Policy objectives

Opportunities

- Engaging multiple water users
- Supply chain resilience
- Differentiation/leadership
- Brand protection
- Connecting policy with local actions

NEED FOR WATER STEWARDSHIPS: IMPLEMENTERS

Primary production
- Agribusiness
- Miners

Industrial
- Processors
- Manufacturers
- Energy

Commercial
- Retail
- Office
- Hospitality, recreation

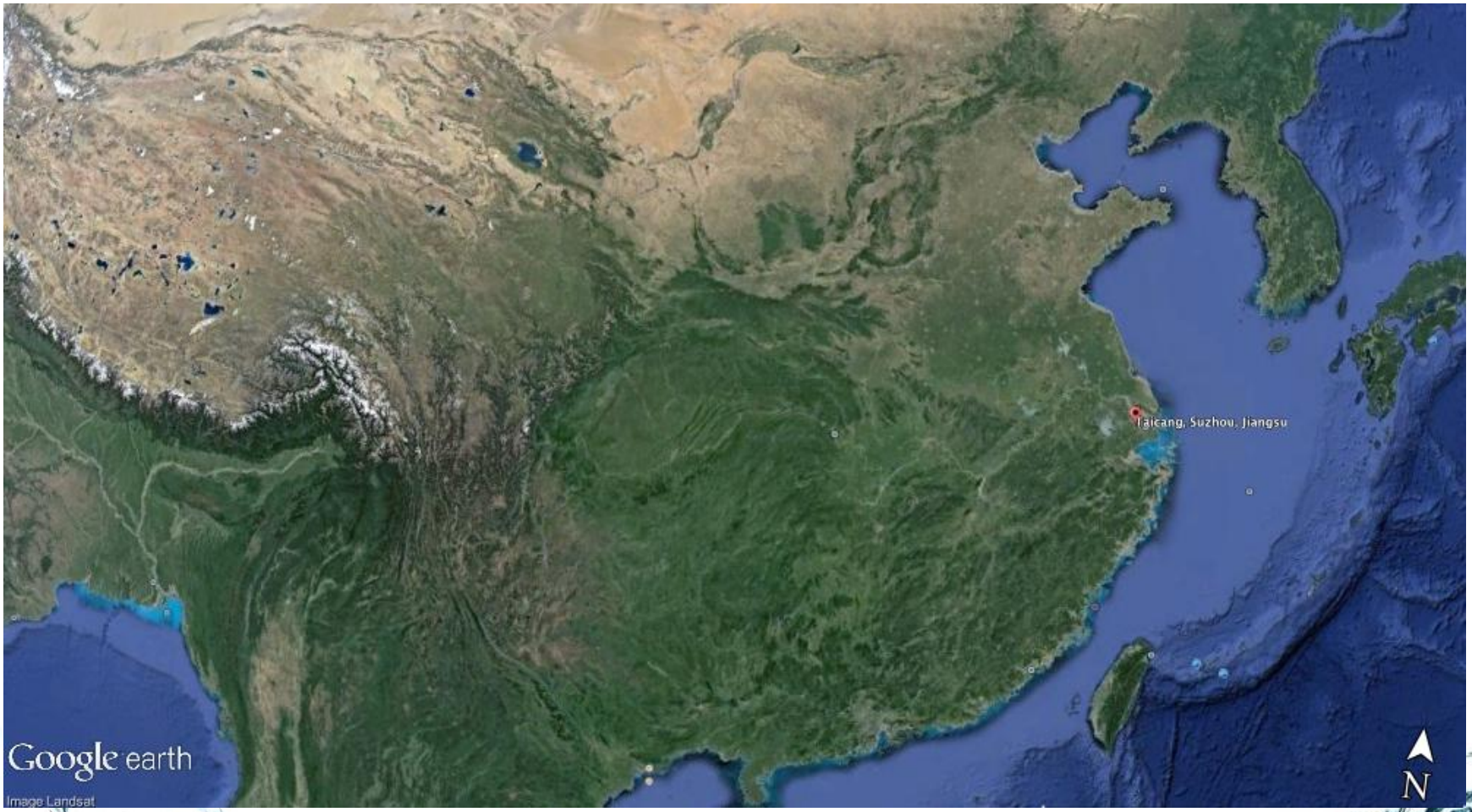
Institutional
- Education, Hospitals
- Public facilities
- Water, sewerage services

Risk Push
- Physical risks
- Regulatory risks
- Financial risks
- Reputational risks

Reward Pull
- Differentiation/leadership
- Connecting multiple initiatives
- Enhanced license to operate
- Market access
- Brand strength

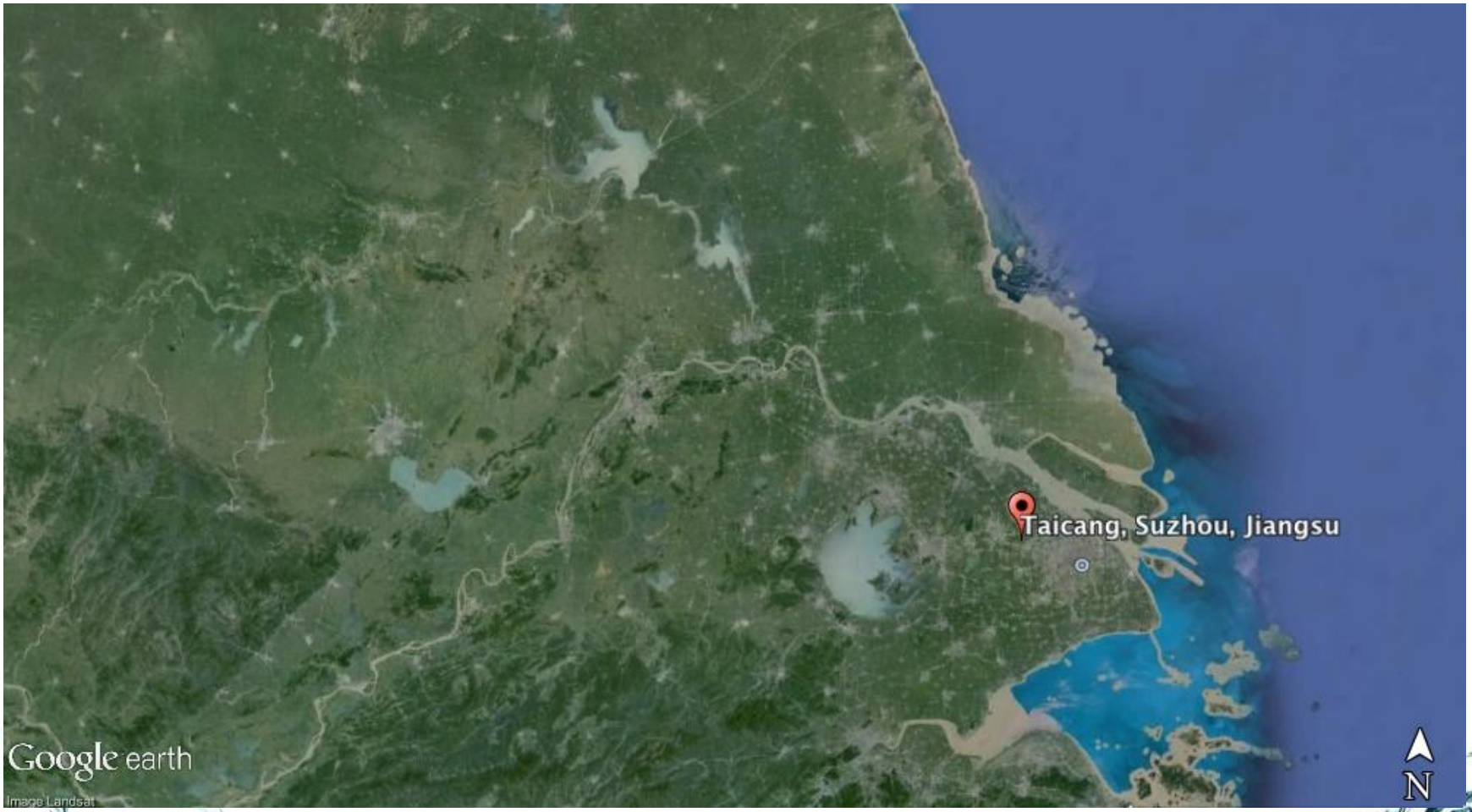
YANTZE BASIN – ECOLOB TAITANG

ALLIANCE FOR WATER STEWARDSHIP



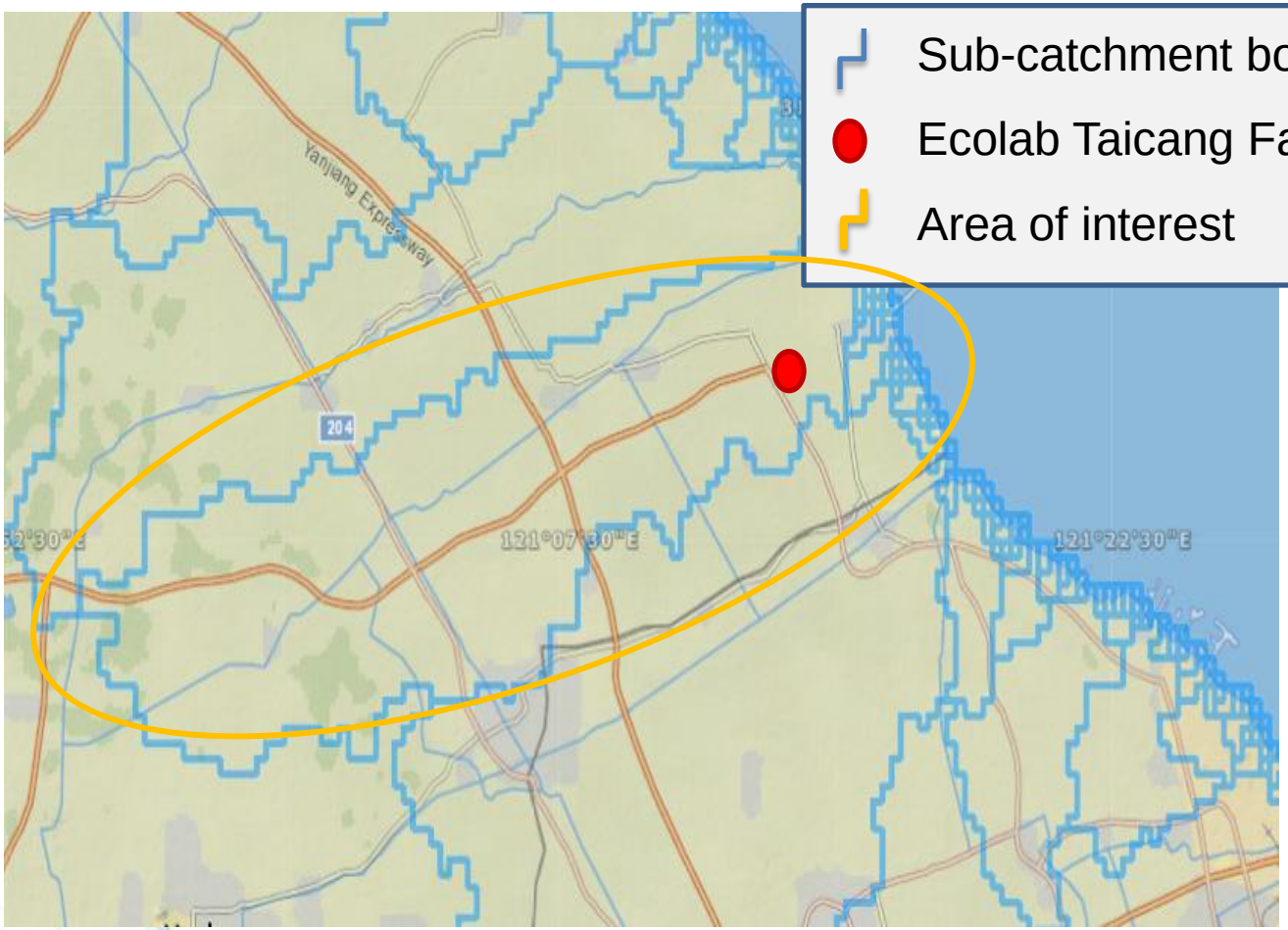
EXAMPLE STEP 2 GATHER & UNDERSTAND

ALLIANCE FOR WATER STEWARDSHIP



EXAMPLE STEP 2 SPHERE OF influence

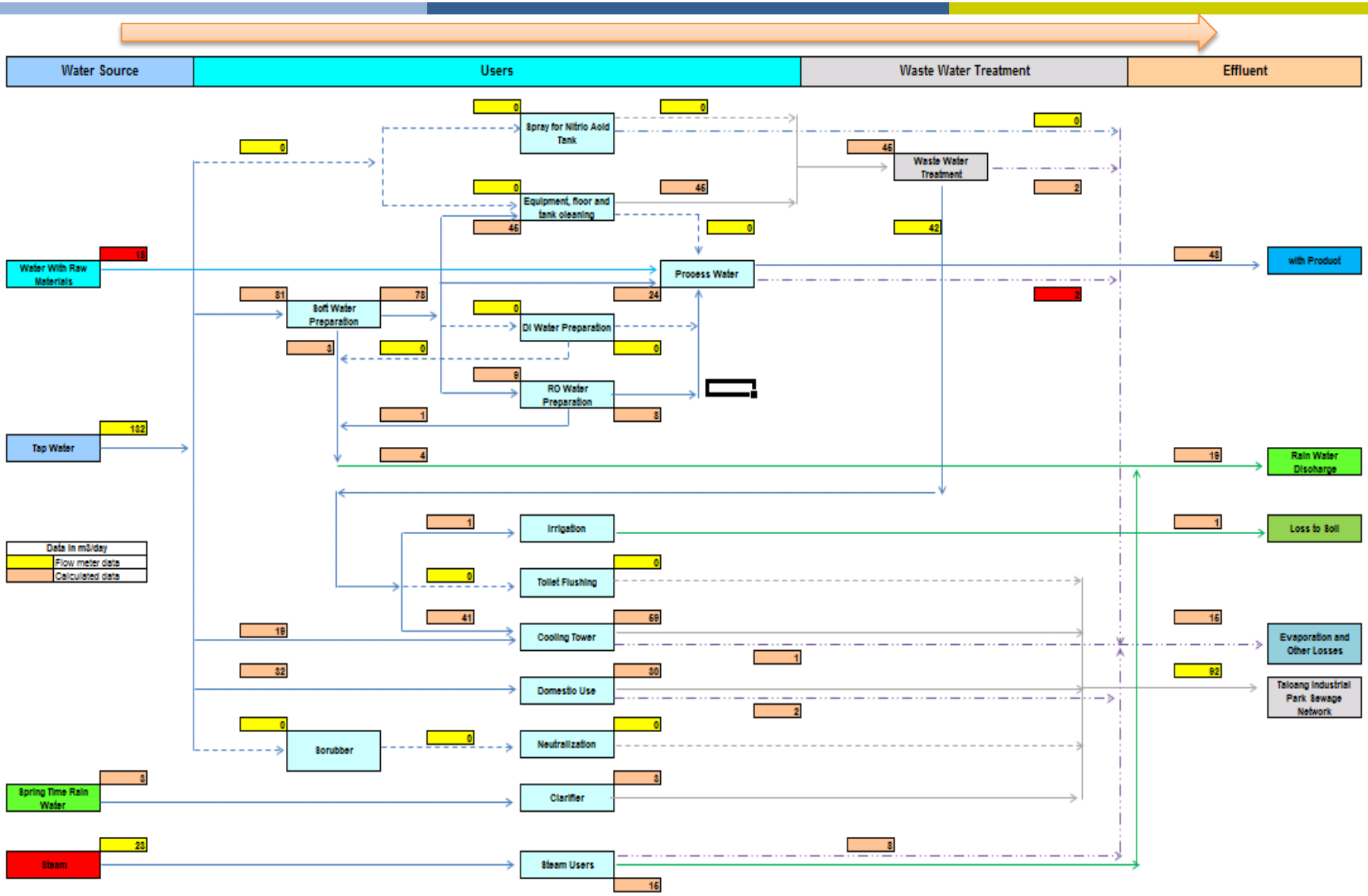
ALLIANCE FOR WATER STEWARDSHIP



- Sub-catchment boundaries
- Ecolab Taicang Facility Location
- Area of interest

EXAMPLE STEP 2 SITE WATER BALANCE

ALLIANCE FOR WATER STEWARDSHIP



EXAMPLE STEP 2 SITE WATER QUALITY

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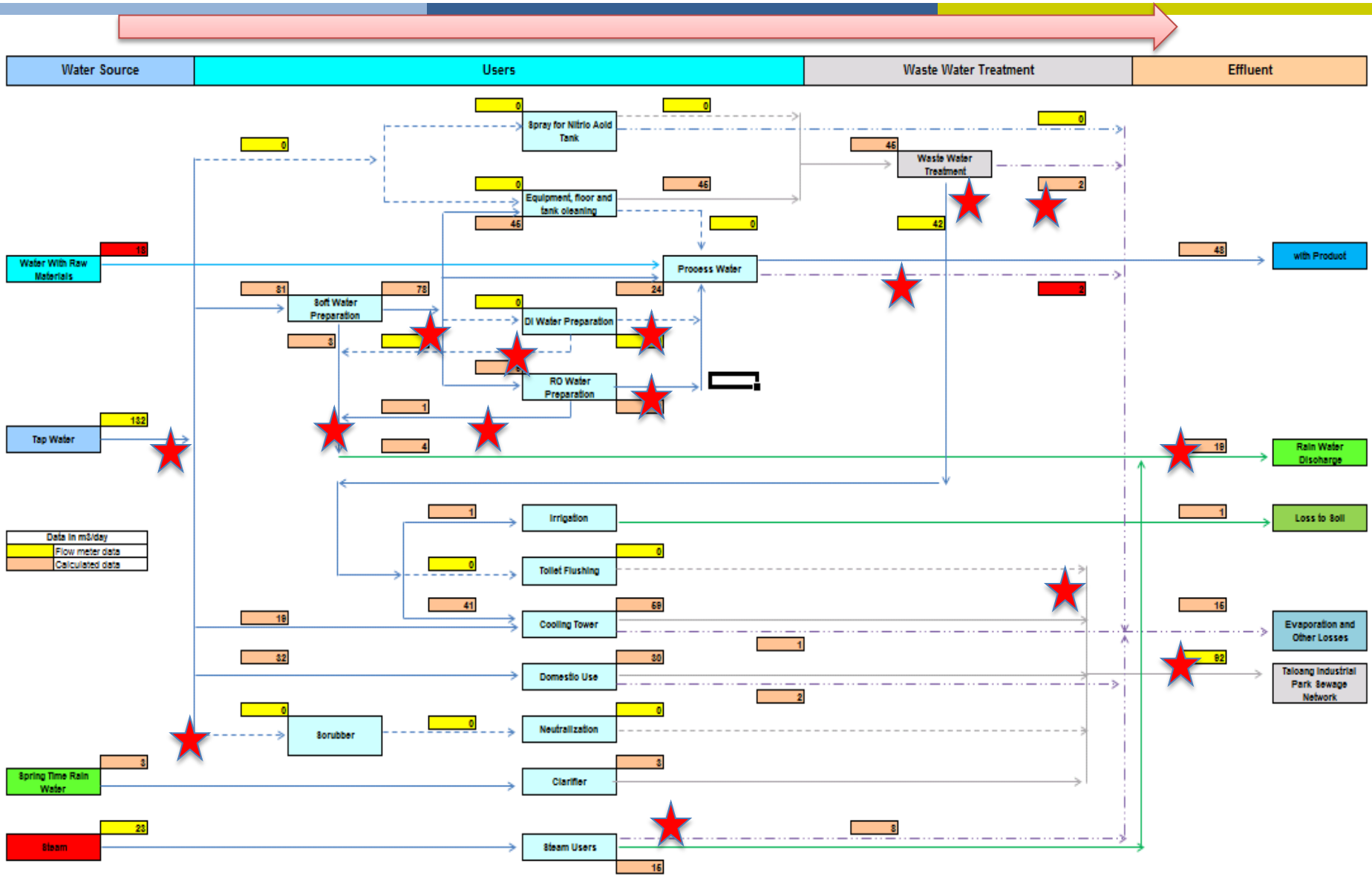
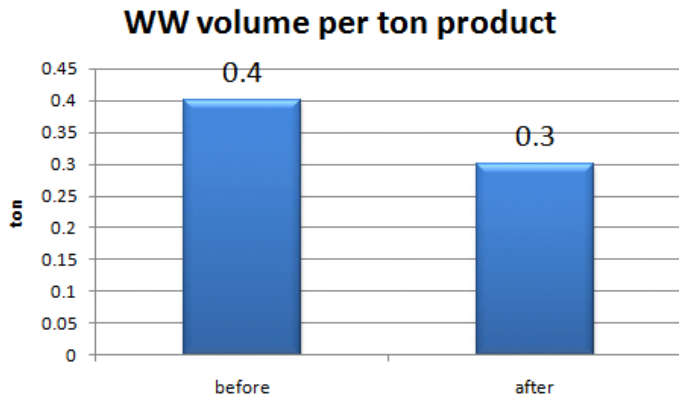


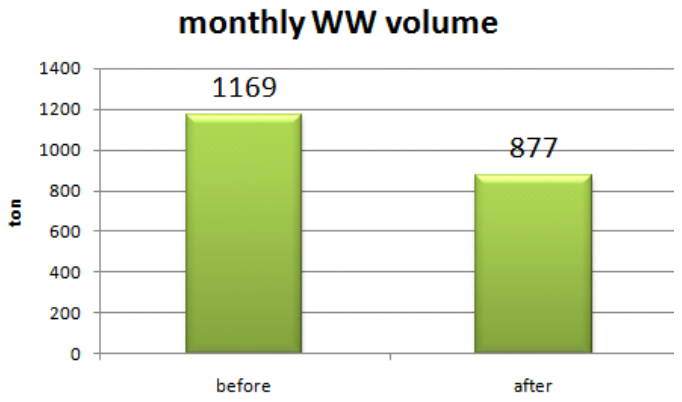
EXAMPLE STEP 3 SITE W.S. PLAN

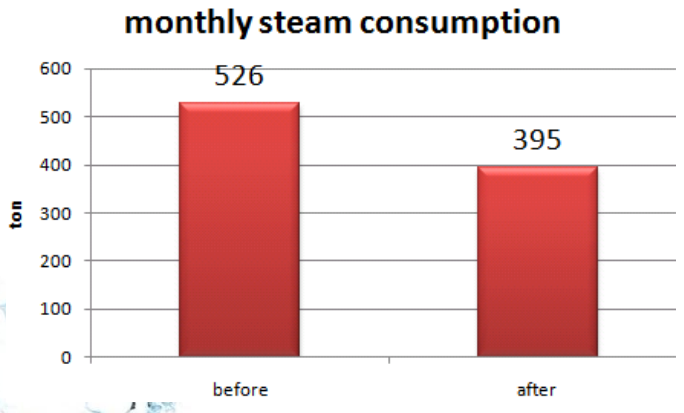
- **In 2014, Ecolab Taicang plant made plans for water stewardship which includes 18 actions:**
- Influence and promote good water stewardship through seminars, training programs internally and externally
- Make targets to improve site water balance and water quality;
- Update site water balance sheet on regular basis
- Improve understanding of indirect water use
- Improve water quality for regional important water area through collaboration

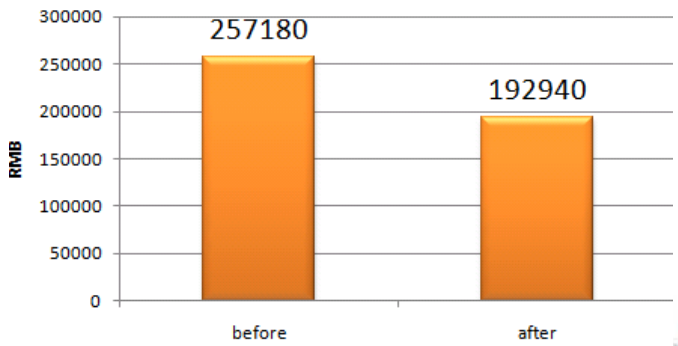
EXAMPLE: STEP 4 IMPLEMENT

After AWS plan implementation, the wastewater generation is reduced from 0.4 to 0.3 ton per ton product. The wastewater volume is decreased by 300 ton per month, which translates to 720 K RMB annually.





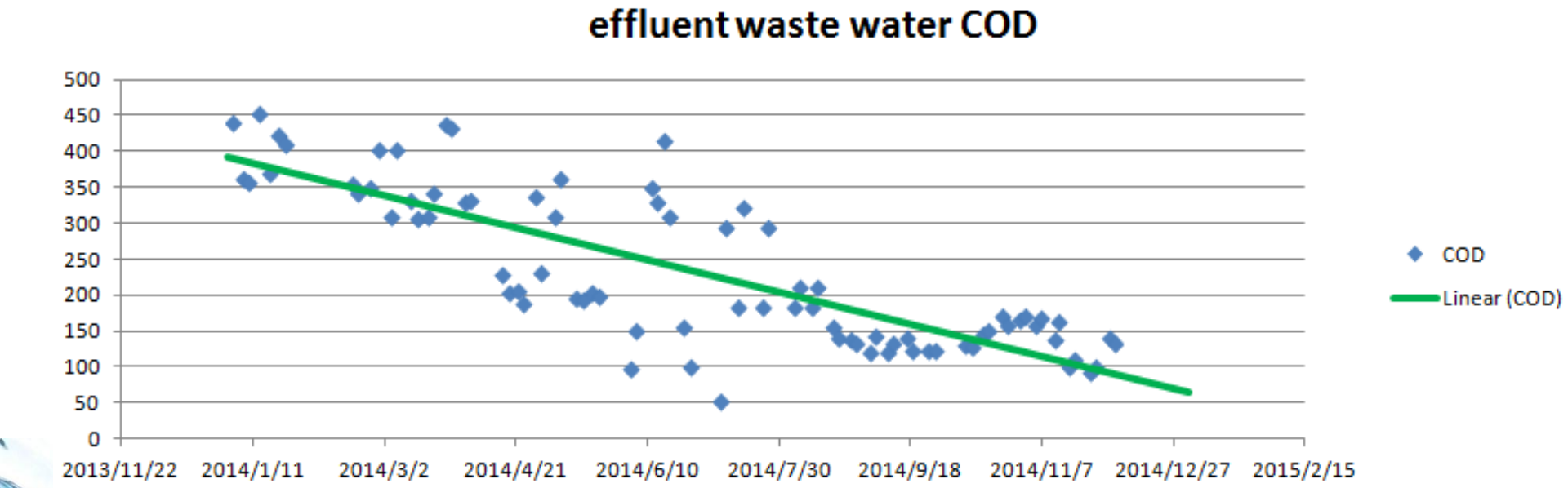




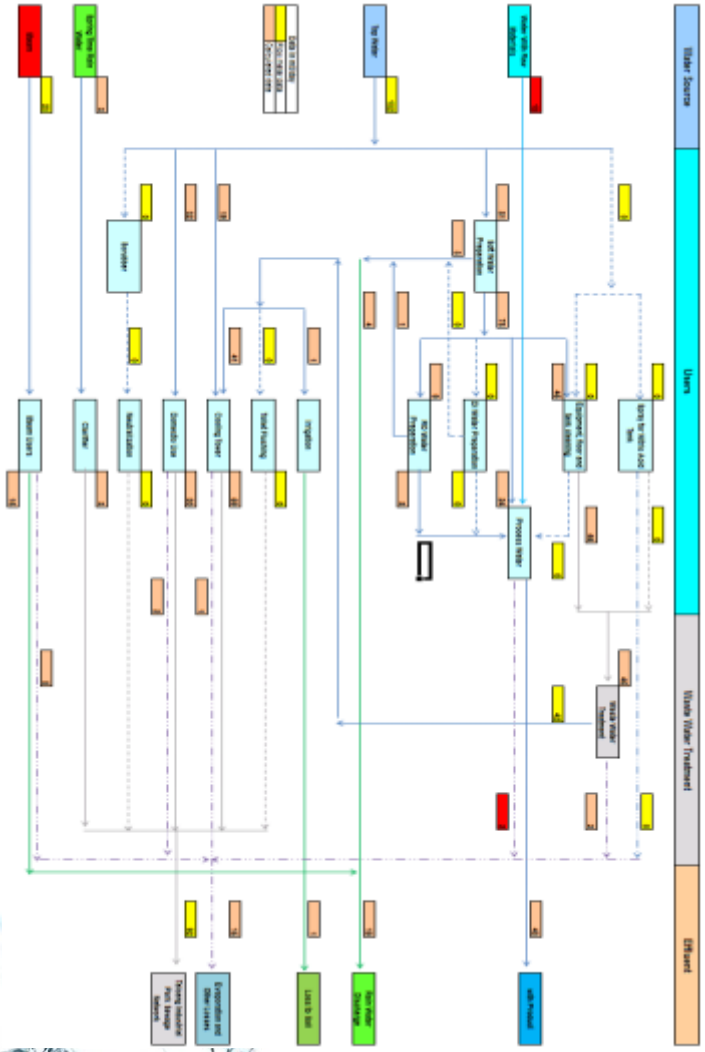
EXAMPLE STEP 5 EVALUATE WATER QUALITY

ALLIANCE FOR WATER STEWARDSHIP

Continuously improve discharge water quality through water stewardship plan implementation



EXAMPLE STEP 5 WATER BALANCE



Throughout 2014

- Reduction in wastewater generation: 2,315 ton
- Reduction in tap water consumption: 2,315 ton
- Cost down: 824,072 RMB

EXAMPLE STEP 6 COMMUNICATE

"Water Stewardship" Seminar

- In 2013 December, water stewardship seminar was held in Taicang Zhenhe hotel to introduce water stewardship pilot test and to explore the benefits and risk mitigation for enterprises and industrial park.
- 49 participants from government, co-founders, and industrial park enterprises

WESTERN PORT – INGHAMS ENTERPRISES

WESTERN PORT INGHAMS ENTERPRISES

ALLIANCE FOR WATER STEWARDSHIP

WATSON CREEK INGHAMS ENTERPRISES

ALLIANCE FOR WATER STEWARDSHIP

WATSON CREEK INGHAMS ENTERPRISES

ALLIANCE FOR WATER STEWARDSHIP

WESTERN PORT BIOSPHERE PROJECT

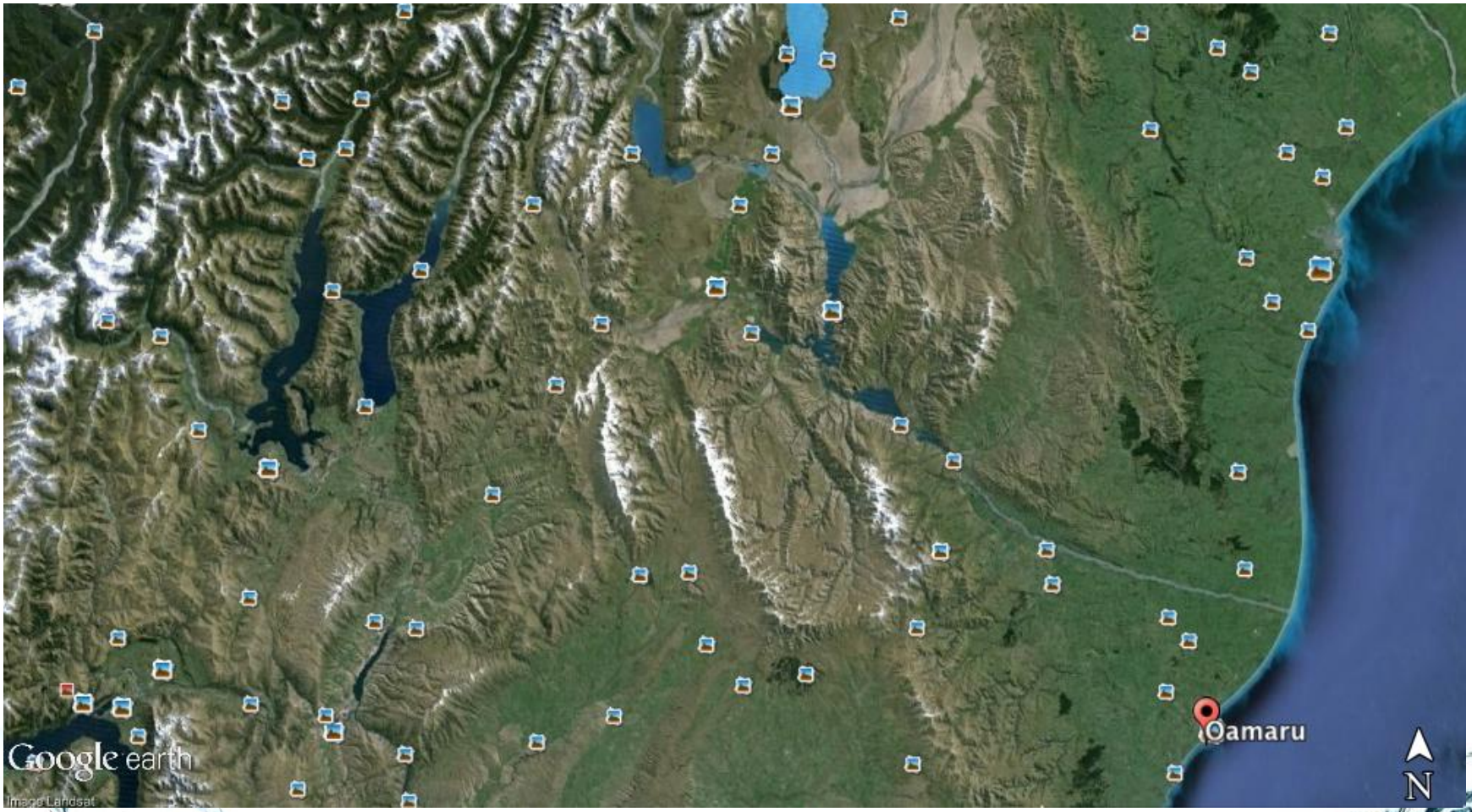
ALLIANCE FOR WATER STEWARDSHIP

WAITAKI RIVER NEW ZEALAND

ALLIANCE FOR WATER STEWARDSHIP

WAITAKI RIVER NEW ZEALAND

ALLIANCE FOR WATER STEWARDSHIP



WAITAKI RIVER NEW ZEALAND

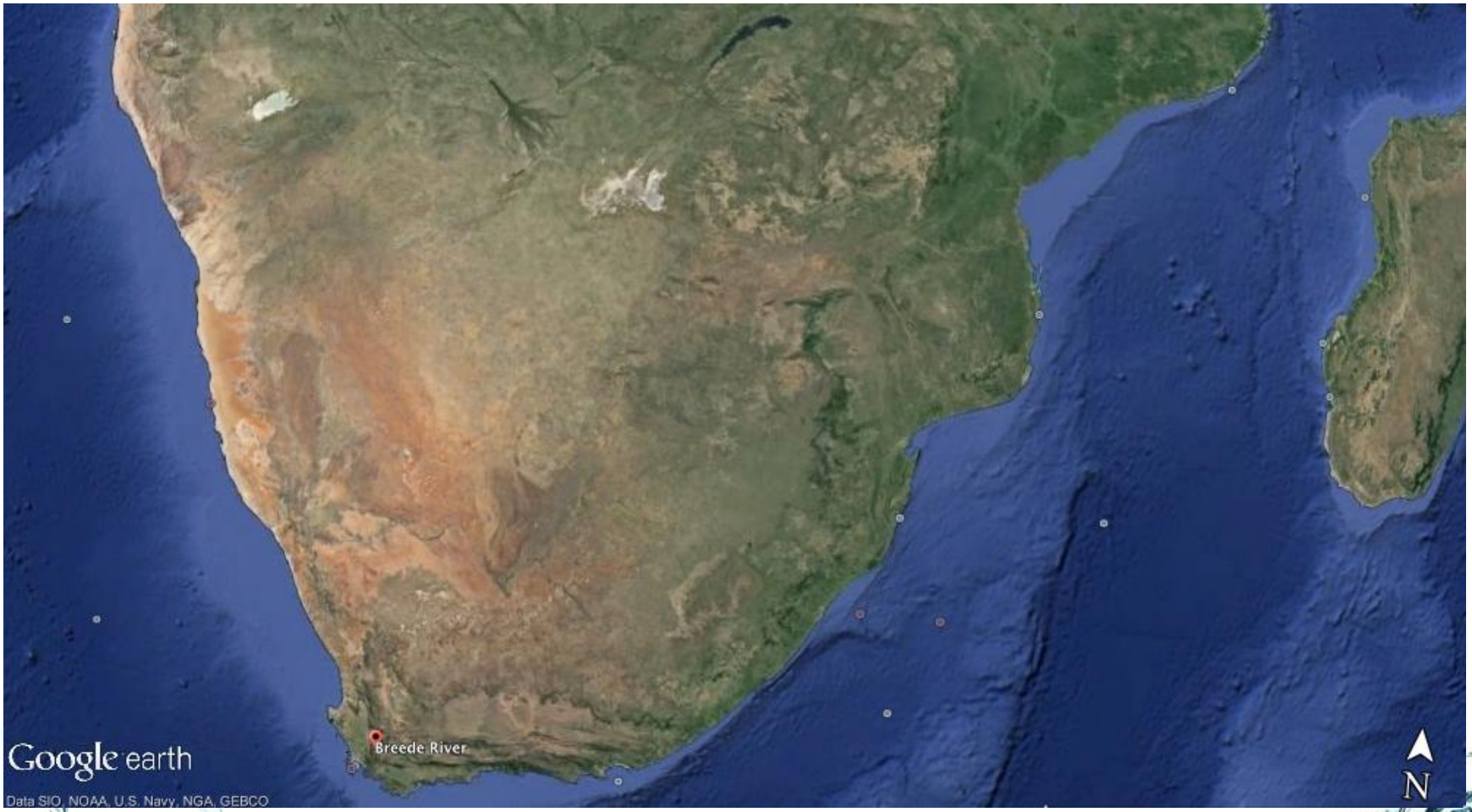
ALLIANCE FOR WATER STEWARDSHIP

WAITAKI RIVER NEW ZEALAND

ALLIANCE FOR WATER STEWARDSHIP

BREEDE RIVER SOUTH AFRICA

ALLIANCE FOR WATER STEWARDSHIP



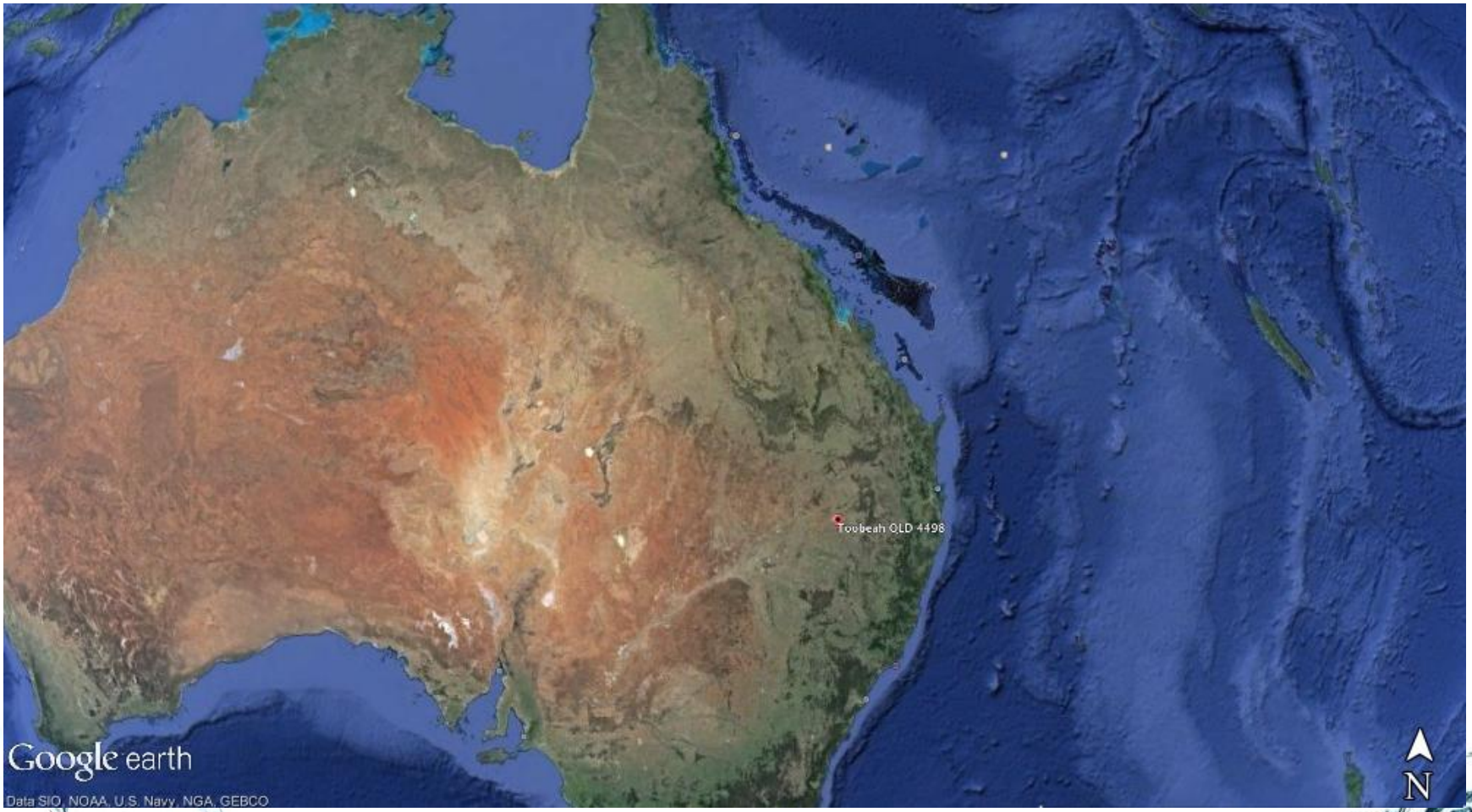
BREEDE RIVER SOUTH AFRICA

ALLIANCE FOR WATER STEWARDSHIP

BREEDE RIVER SOUTH AFRICA

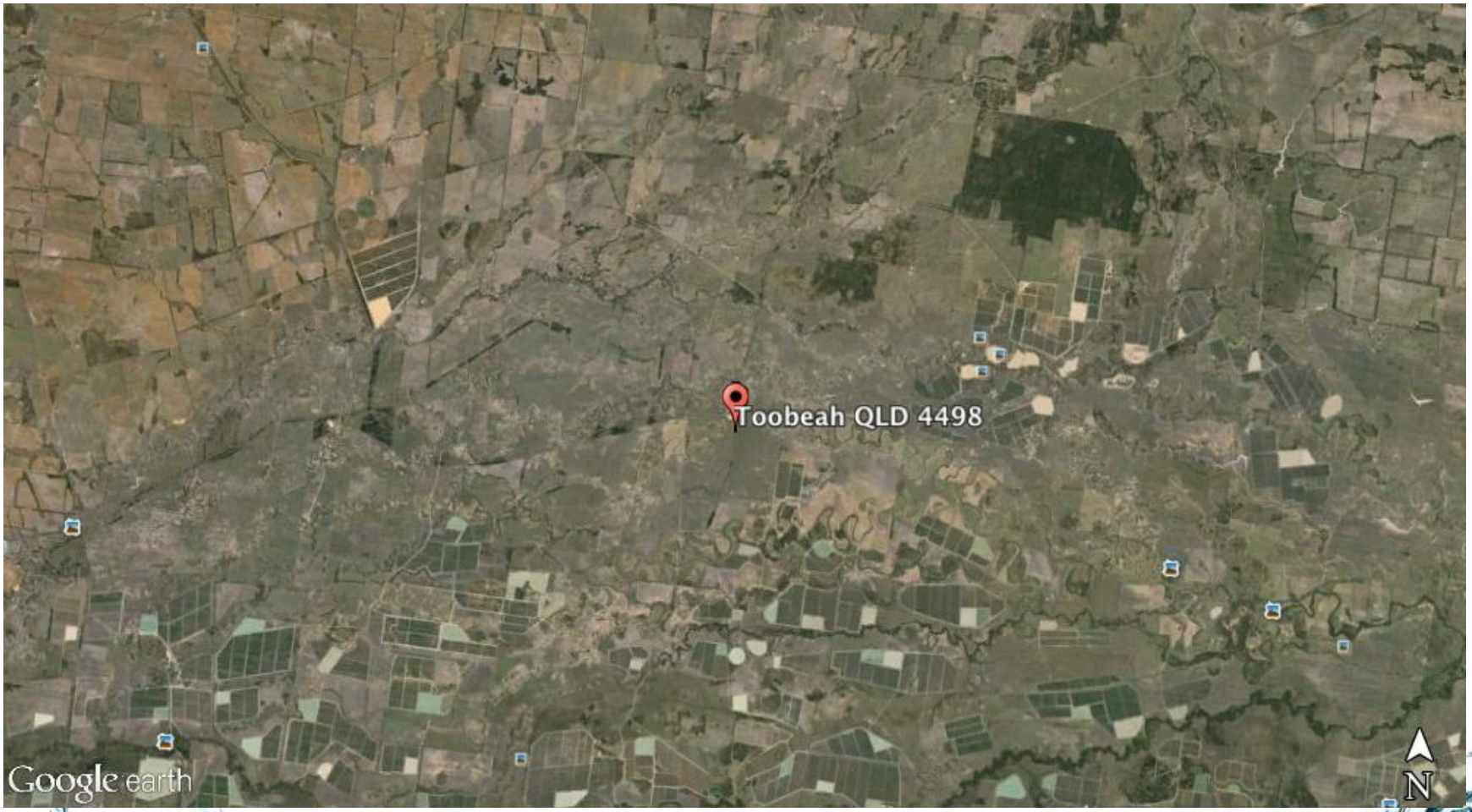
BOOBERANNE CREEK, TOOBEAH

ALLIANCE FOR WATER STEWARDSHIP



BOOBERANNE CREEK, TOOBEAH

ALLIANCE FOR WATER STEWARDSHIP



BOOBERANNE CREEK, TOOBEAH

ALLIANCE FOR WATER STEWARDSHIP

BOOBERANNE CREEK, TOOBEAH

Lomandra sp. in dry portion of Booberanna Creek

Waterhole on Booberanna Creek in "Kinbeachie"

OVERCOMING BARRIERS - COMPLEXITY

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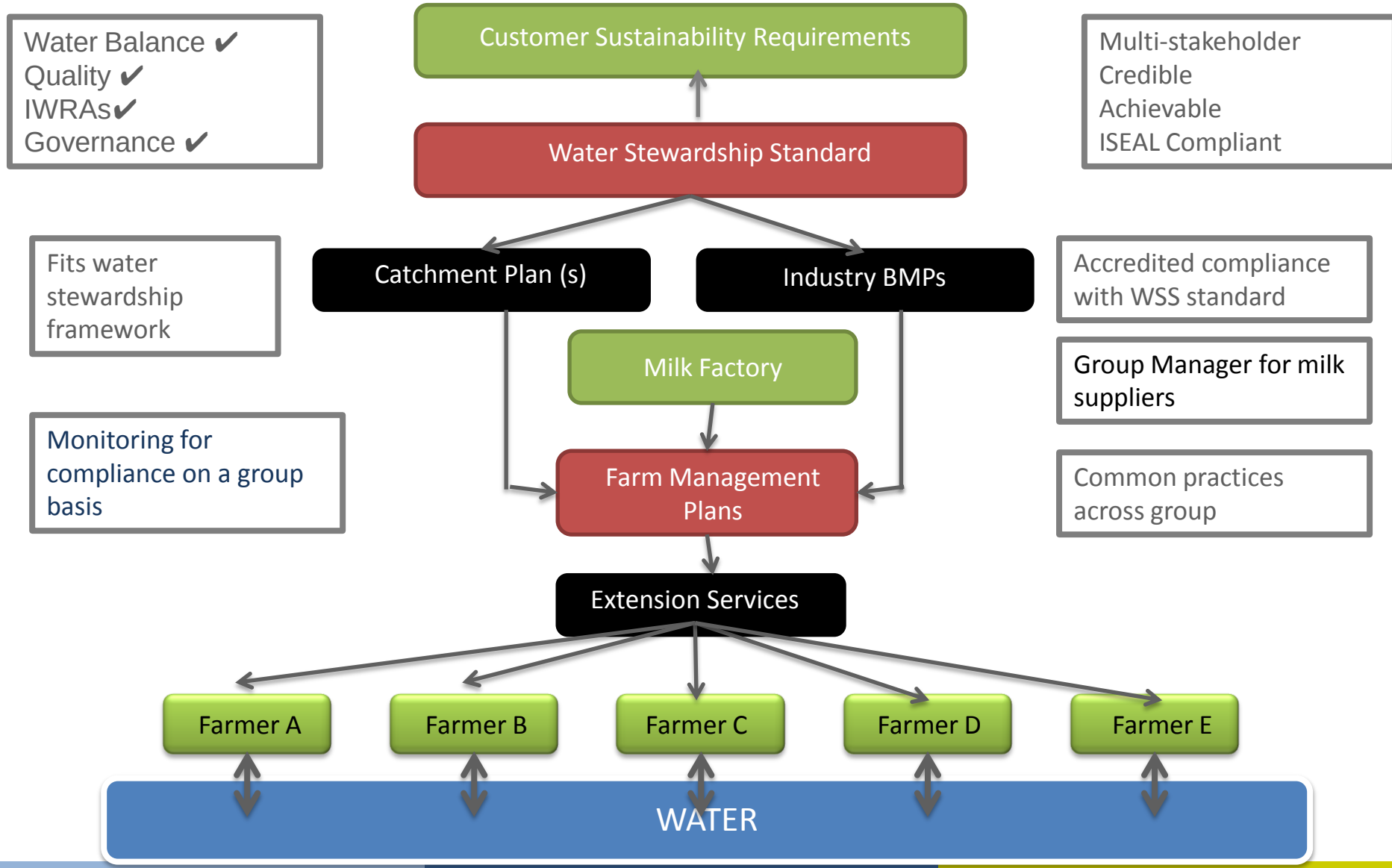

OVERCOMING COMPLEXITY: TECHNO-SPEAK

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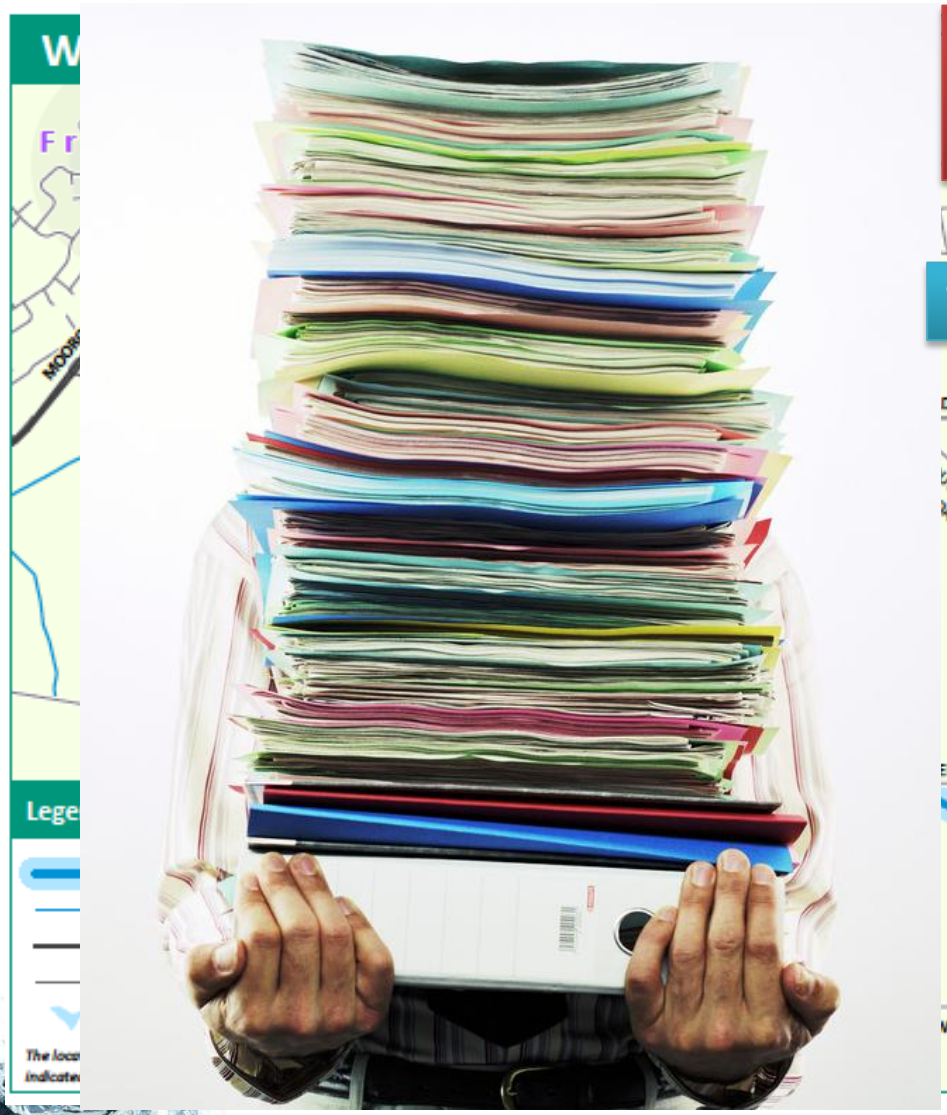
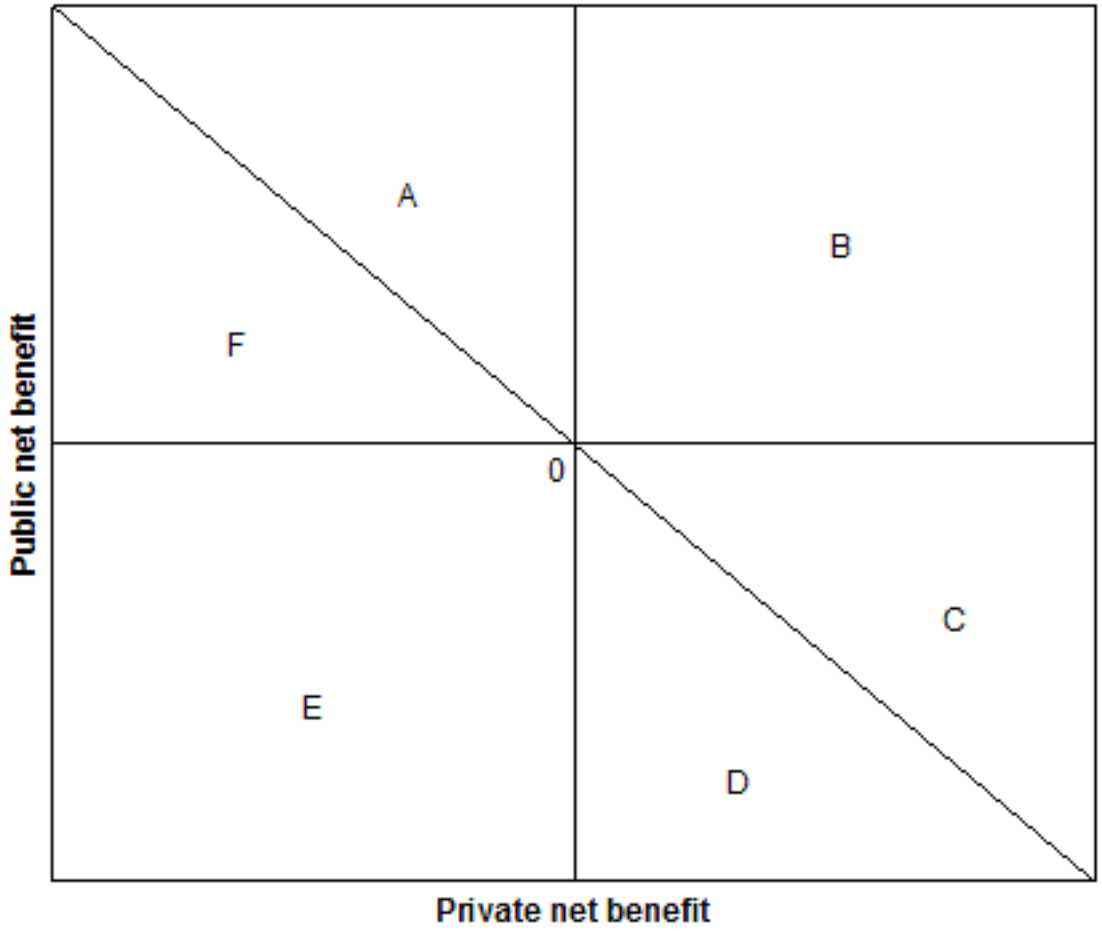


20 REPORTS
1,200 PAGES OF MATERIAL

TEMPLATE FOR STEP 2 ESSENTIALS

BUILDING A BUSINESS CASE



Pannell, D.J. (2008). Public: private benefits framework version 3, INFFER Working Paper 0805, University of Western Australia. http://dpannell.fnas.uwa.edu.au/dp0902.htm

PERCEIVED PUBLIC PRIVATE BENEFITS

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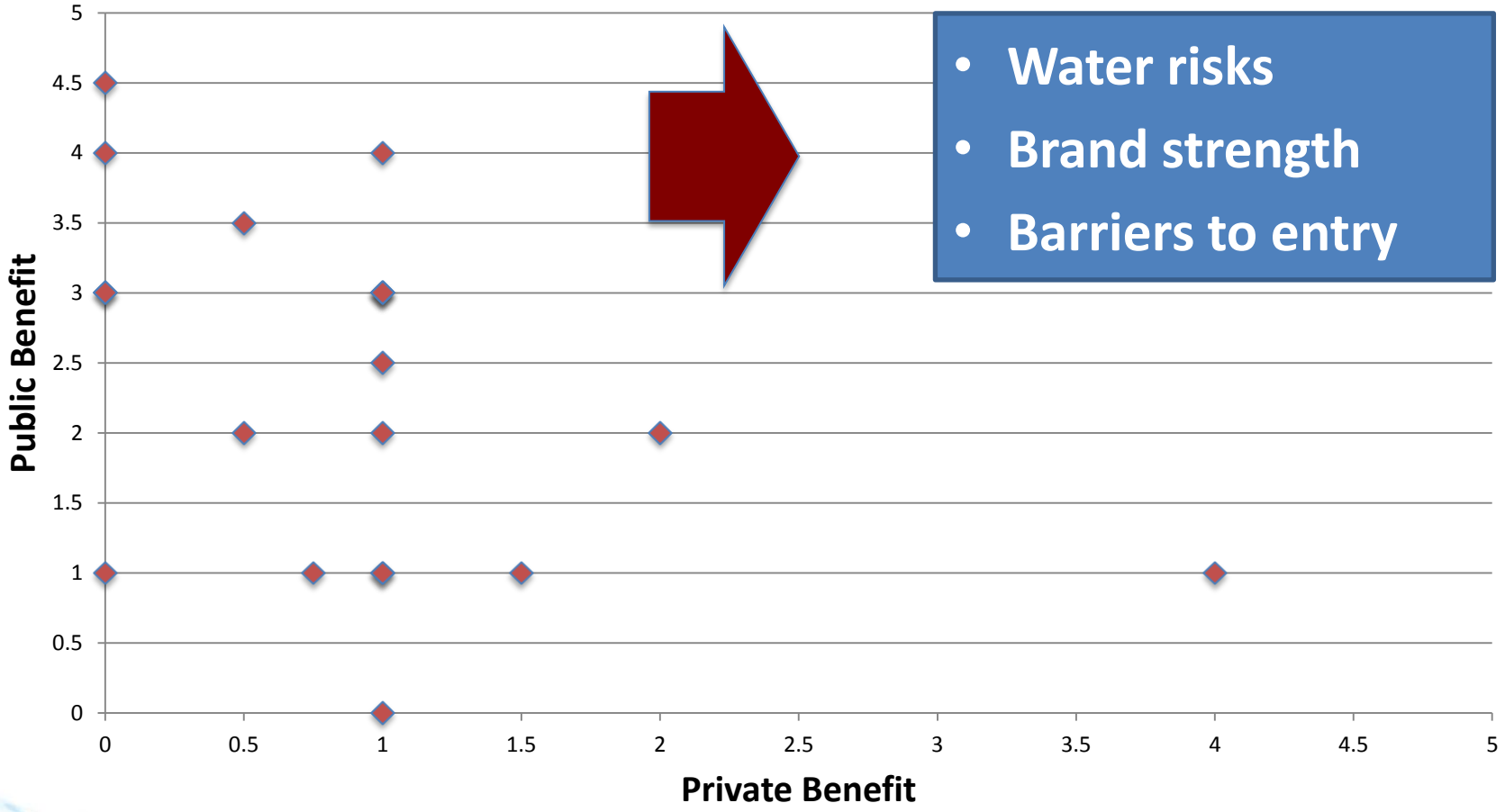

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MICHAEL@WATERSTEWARDSHIP.ORG.AU