



RUNNING OUT OF WATER

Engaging Industry In Sustainable Water Management Through Water Stewardship

22nd International
RIVER
SYMPOSIUM
EXCELLENCE – COLLABORATION – INTEGRATION



HIGH LEVEL PANEL ON WATER Open Letter to Global Leaders

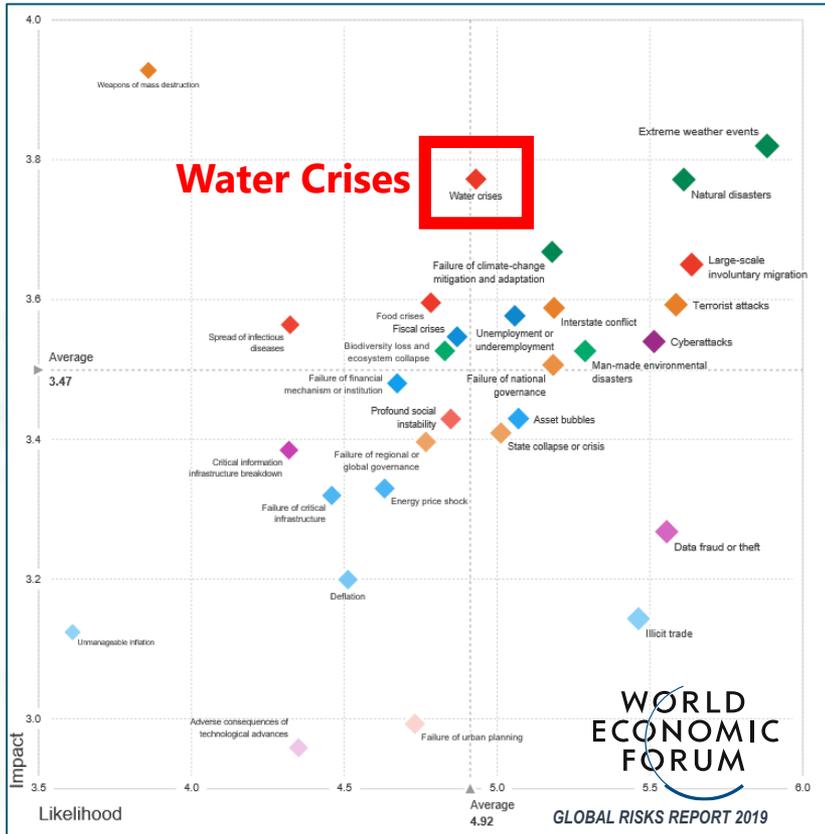
The world is facing a water crisis. Water is a precious resource and one of the greatest global risks to economic progress, poverty eradication, peace and security, and sustainable development.

An inclusive approach will be necessary, drawing in sectors such as agriculture and leaders such as city mayors and CEOs. New partnerships and ways of working will be crucial. **Governments, communities, the private sector and researchers will need to collaborate.**

Today

- Running out of water
- Who is the Alliance for Water Stewardship?
- What is water stewardship?
- Who practices water stewardship?
- A preliminary model for industrial cluster water stewardship projects in China

Running Out of Water



The World Economic Forum (WEF) has reported **water crises** among the **top five global risks** for each of the past nine years.

A Global Multi-Stakeholder Membership Alliance

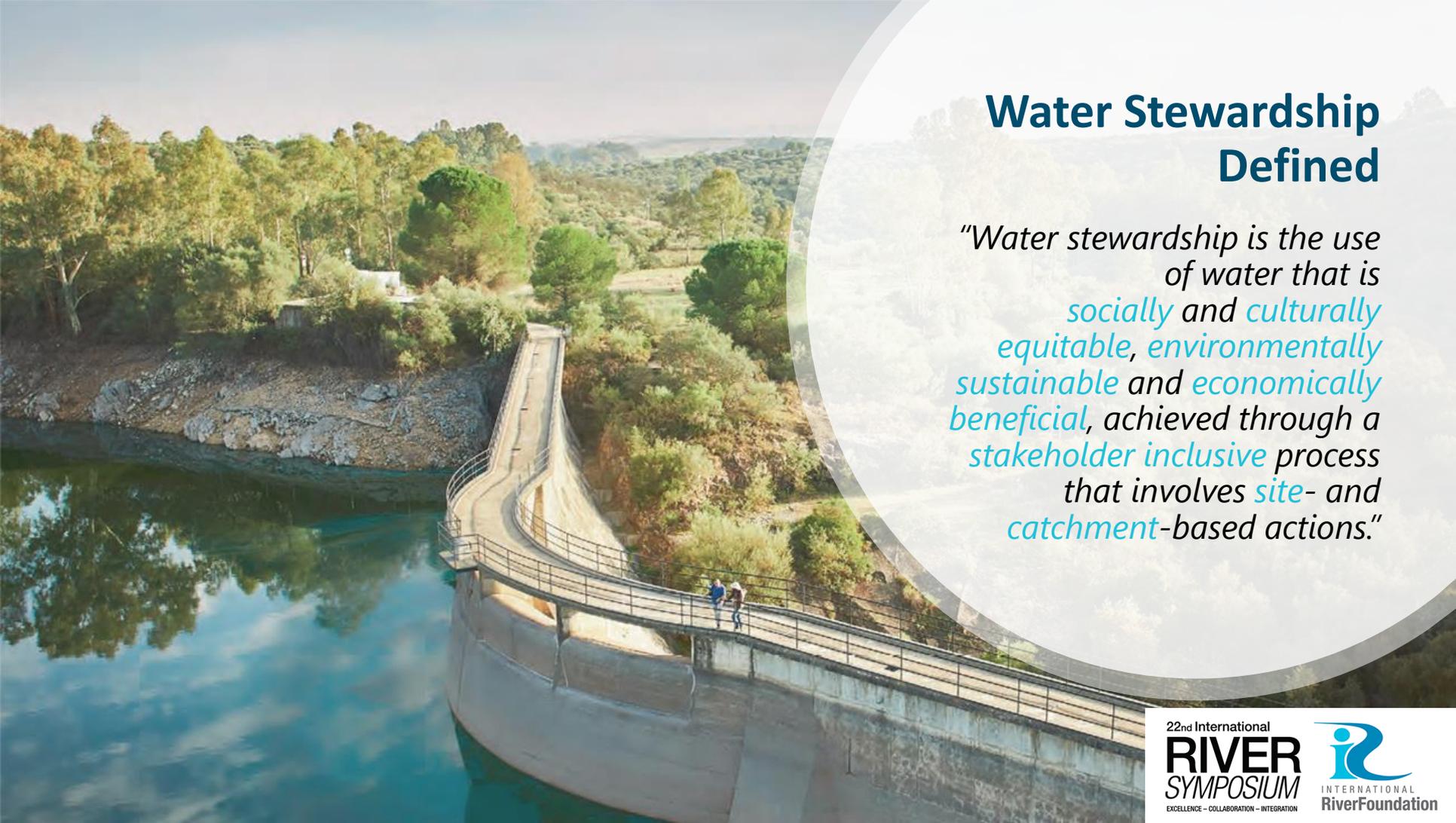


A Global Multi-Stakeholder Membership Alliance



What is water stewardship?



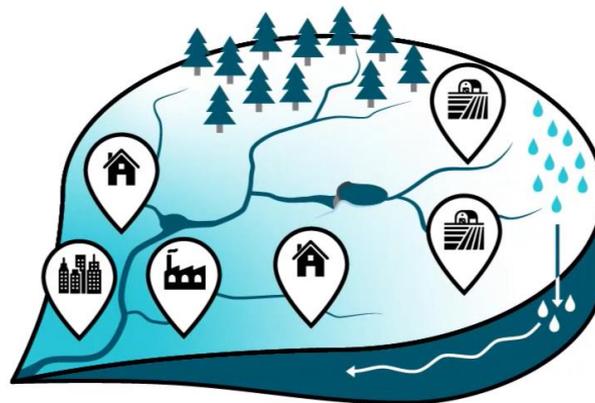
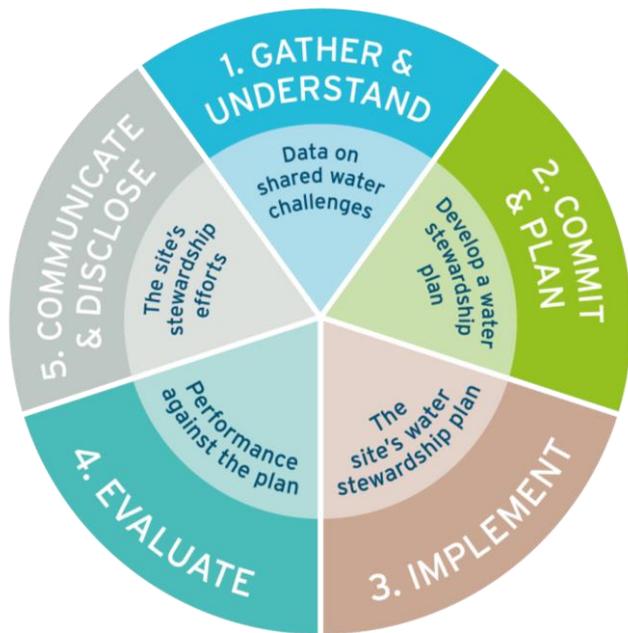


Water Stewardship Defined

“Water stewardship is the use of water that is socially and culturally equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder inclusive process that involves site- and catchment-based actions.”

THE AWS STANDARD V2.0

THE AWS STANDARD FRAMEWORK IS BUILT AROUND FIVE STEPS:



GOOD WATER GOVERNANCE



SUSTAINABLE WATER BALANCE



GOOD WATER QUALITY STATUS



IMPORTANT WATER-RELATED AREAS



SAFE WATER, SANITATION AND HYGIENE FOR ALL (WASH)



The global body for environmental and social sustainability standards



SUSTAINABLE DEVELOPMENT GOALS

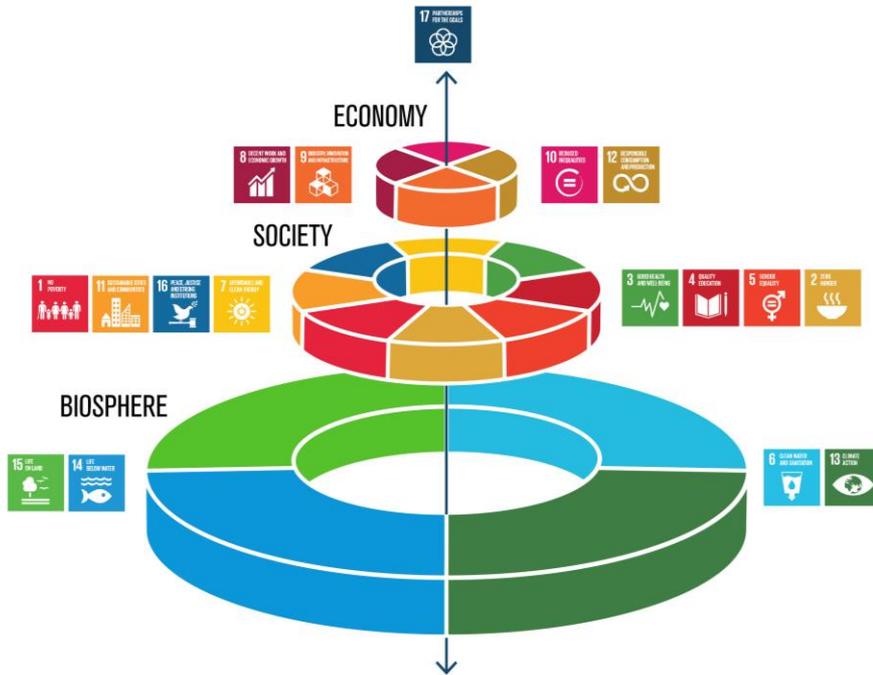


Image credit: Azote Images for Stockholm Resilience Centre

HEADLINE RECOMMENDATION

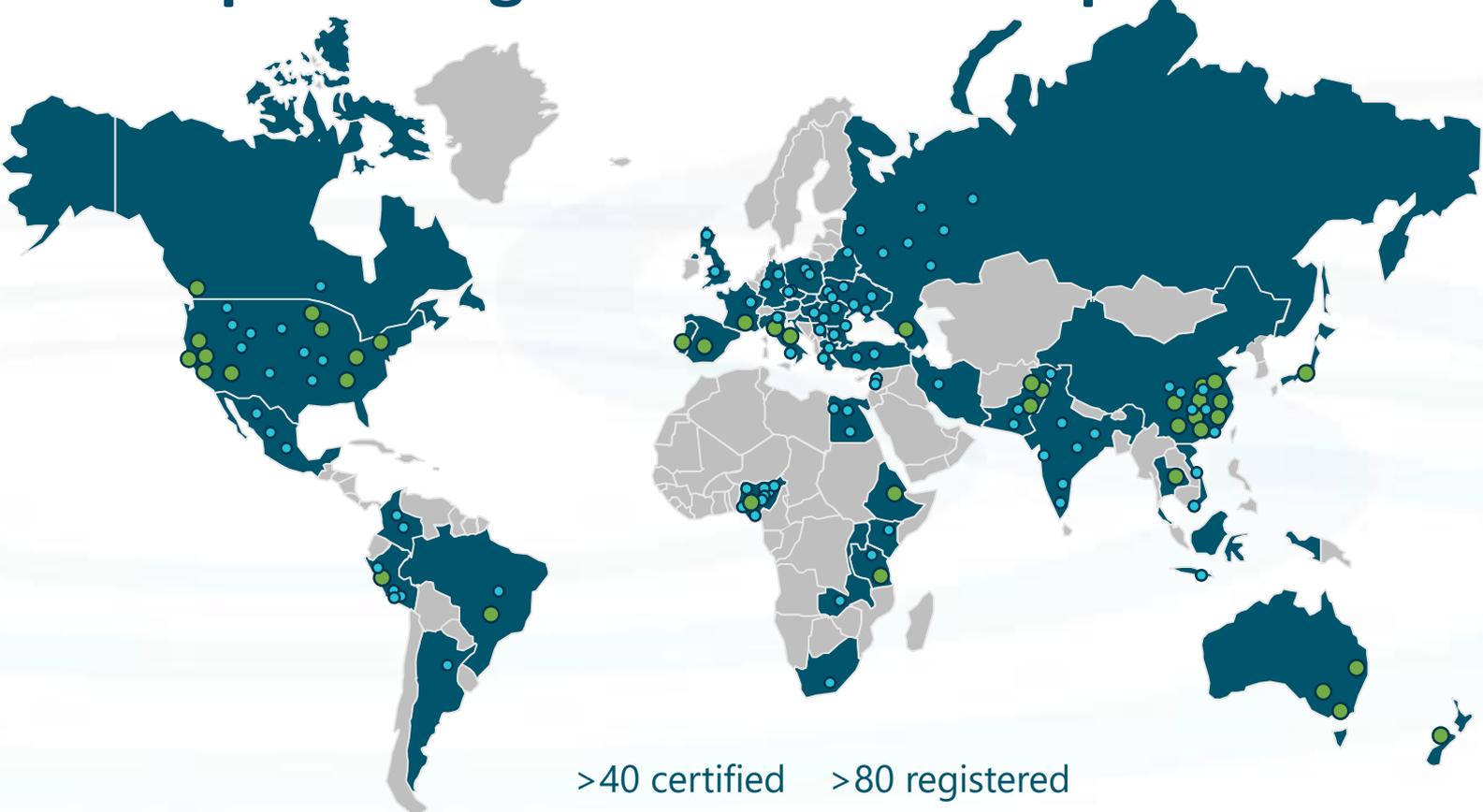
Motivate all water use sectors to embrace water stewardship, strengthen their collaboration, and participate in integrated water resource management

DETAILED RECOMMENDATIONS

- 💧 Motivate sectors, such as agriculture, environment, energy, industry, and urban architecture to embrace water stewardship and strengthen their collaboration.
- 💧 Promote the Water Partnership Catalogue—a repository of information and an open database to register water partnerships around the world.

HLPW 2018, Making every drop count – An Agenda for Water Action

Who's practicing water stewardship?



VICTORIA, AUSTRALIA

Ingham's



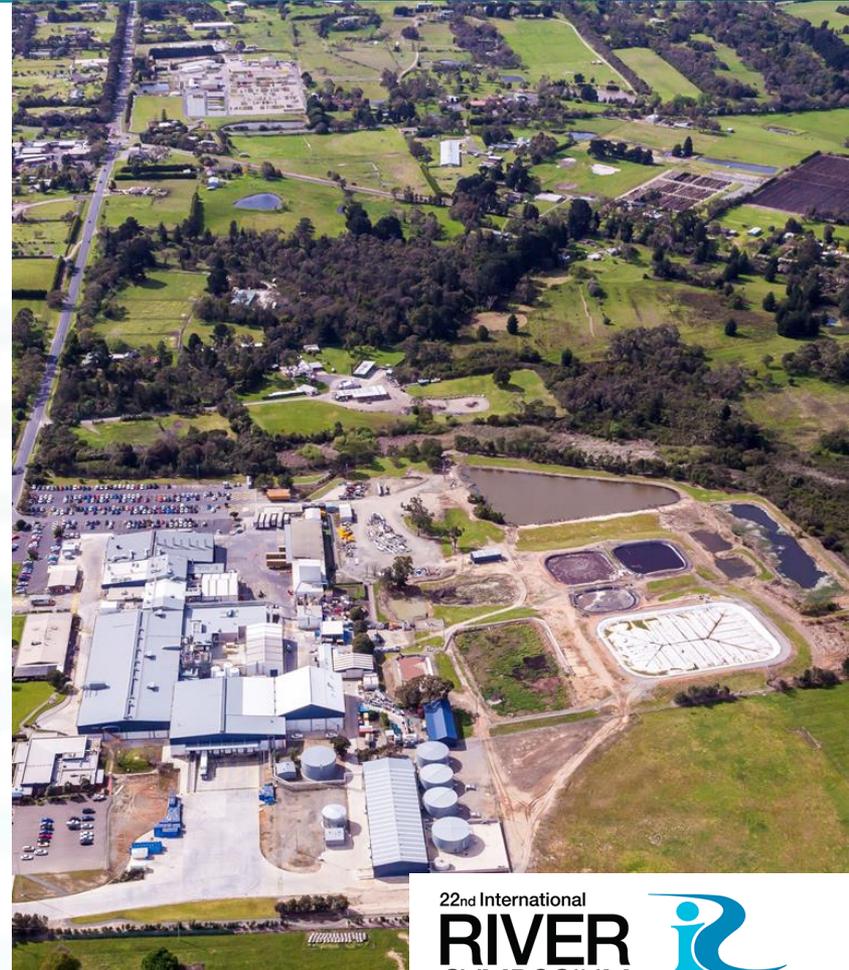
Reduced water consumption and waste water by 70%



Rehabilitated drainage line and creek



Founding partner in Western Port Water Stewardship Program

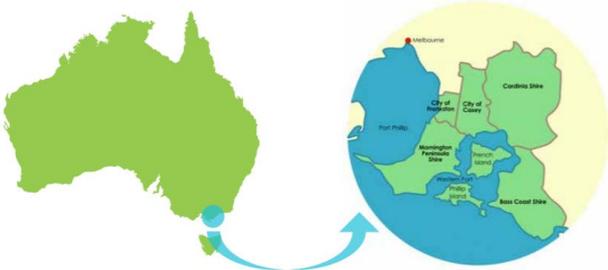


Ingham's Somerville, Australia Plant ©
Brett Price Photography

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Scaling-up: Western Port Biosphere



UNESCO WESTERN PORT BIOSPHERE
 Helen Macpherson Smith Trust
 ALLIANCE FOR WATER STEWARDSHIP
INGHAM'S
 MORNINGTON PENINSULA SAVVY
Port Phillip & Westernport CMA
Melbourne Water
South East Water
Parks Victoria
Southern Rural Water
EPV VICTORIA
 Environment Protection Authority Victoria

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INTERNATIONAL RiverFoundation

SOUTH AUSTRALIA

Renmark Irrigation Trust



98% delivery efficiency



337 ML delivered to environment



SEE Renmark 2024: vision with local government and community



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Scaling-up: Renmark Irrigation Trust



How to Get Involved



KEEP INFORMED

Read local & global news

Subscribe to AWS newsletter

Follow @WaterStewardAus



JOIN THE ALLIANCE

Attend AWS events

Become AWS member

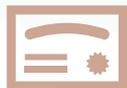


DEVELOP SKILLS

Host an AWS facilitated workshop

Attend AWS Training

Gain AWS Professional Credentialing



IMPLEMENT

Practice water stewardship

Self-assess

Get AWS certified

Maintain certification

Contact

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A preliminary model for industrial cluster water stewardship projects in China

Michael Spencer



Today's Presentation

- Water issues in China
- Study regions and goals
- Draft model based on literature
- Empirical testing of model
- Revised model
- Provisional program model
- Conclusions

CHINA'S WATER CRISIS

- PM Wen Jiabao said water shortages threaten “the very survival of the Chinese nation” (The Economist, 2013)
- Renewable freshwater per capita less than a third of the global average (The World Bank, 2019)
- Two-thirds of cities suffer shortages, >40% of rivers severely polluted, 80% of lakes suffer eutrophication and 300 million rural lack safe drinking water (Liu and Yang, 2012)
- China, India and Pakistan, “simply do not have sufficient water to ensure food and energy security plus develop under the current export-led economic growth model (Hu and Tan 2018)

MOMENTUM FOR CHANGE BUILT FROM MID-2000s

- The 2015 Water Ten plan and law to clean-up water quality, reduce proportion of severely polluted water bodies and improve drinking water quality
- Penalties were increased ten-fold to one million RMB
- National two-year enforcement inspections resulting in factory closures, suspensions, charges, arrests and hundreds of imprisonments (including party officials)

CENTRAL ENVIRONMENTAL INSPECTOR GROUP

From 2016, Central Environmental Inspection Groups planned to take 2 years to inspect all provinces and cities in China.

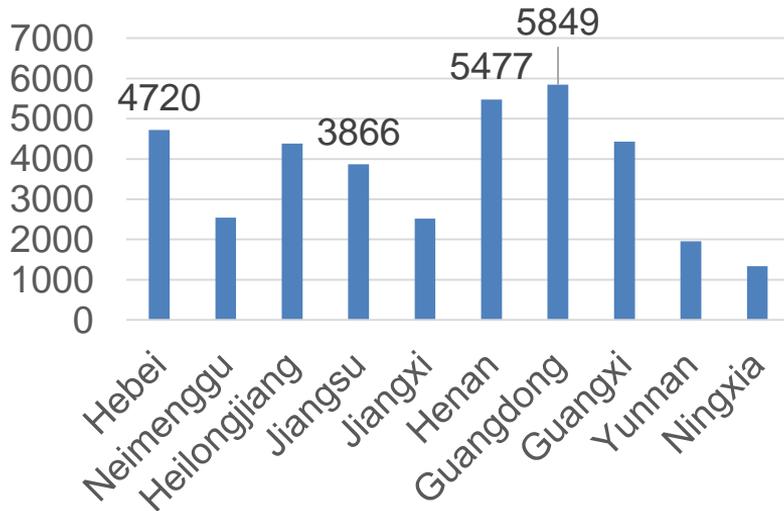
- the first batch (8)
July 2016
- the second batch (7)
November 2016
- the third batch (7)
April 2017
- the fourth batch (8)
August 2017
- Revisit (10)
June 2018



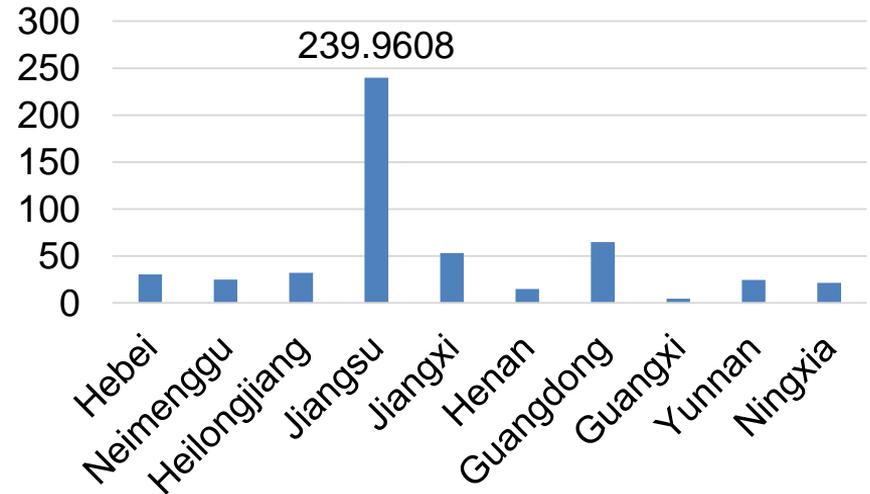
CONSEQUENCES FROM THE “REVISIT” PROGRAM

1500 people held accountable in Yunnan; 162 people detained for environmental violation in Guangdong; authorities issued fines of 240 million yuan in Jiangsu.

Accepted Cases



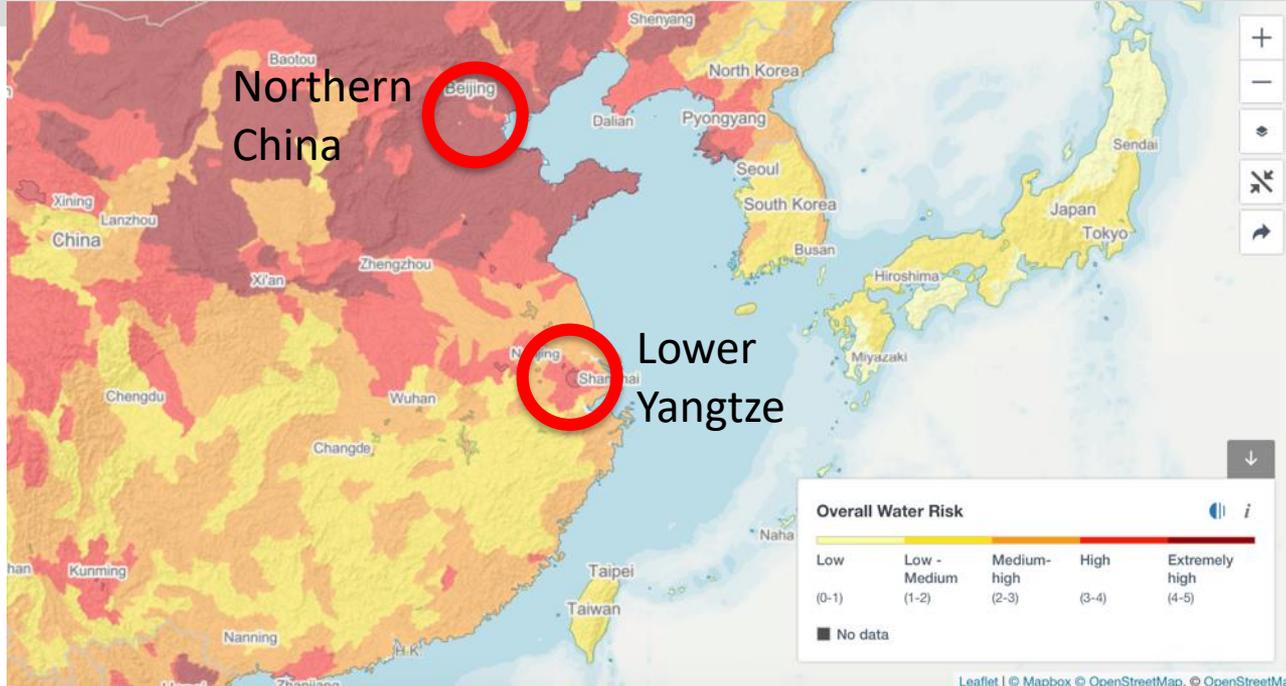
Fines/million yuan



AVOID ONE SIZE FITS ALL

- Enforcement mechanisms starting to transform pollution problems
- Change needs to be handled sensitively and Ministry was opposed to a one-size-fits-all approach (Gangie Li (MEE))
- Violators should be given time to improve so that only those with no value or hope of improvement are shut down (Xu, 2017b).

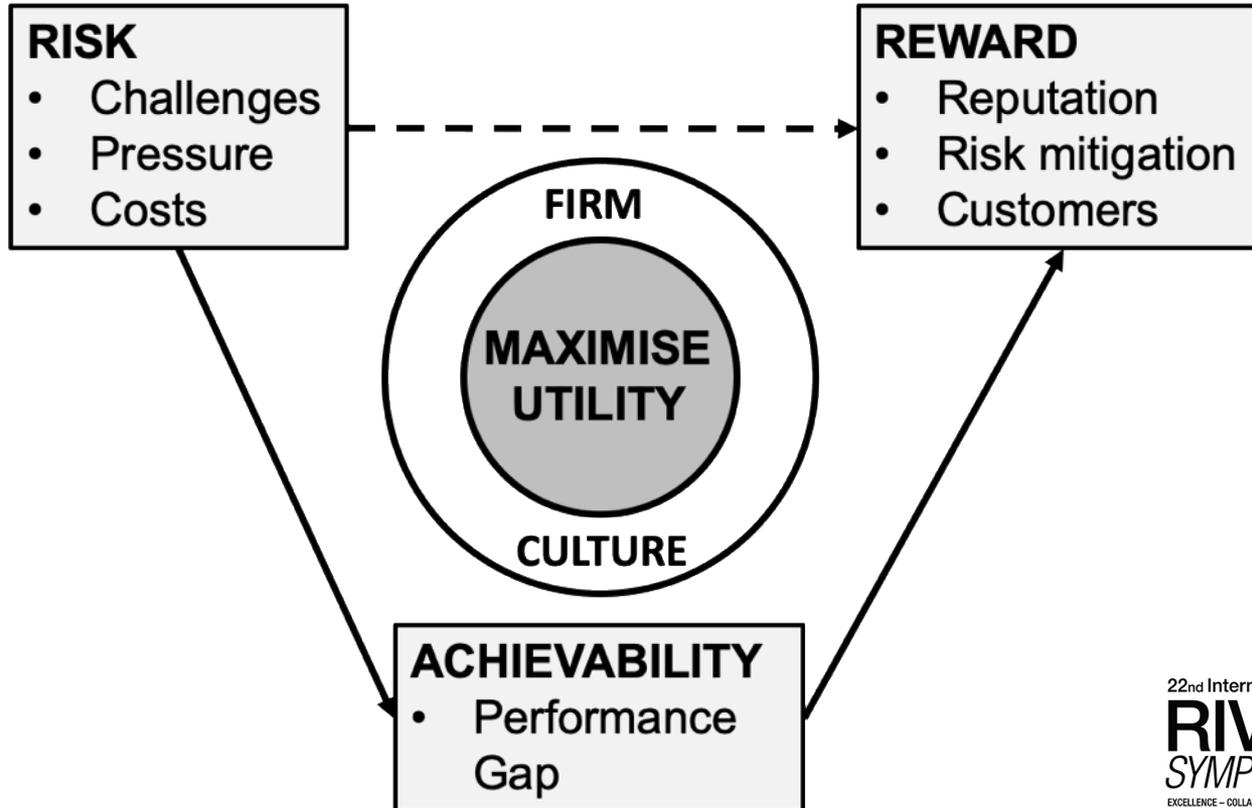
PROJECT STUDY AREAS



North: Air pollution, water scarcity and water pollution

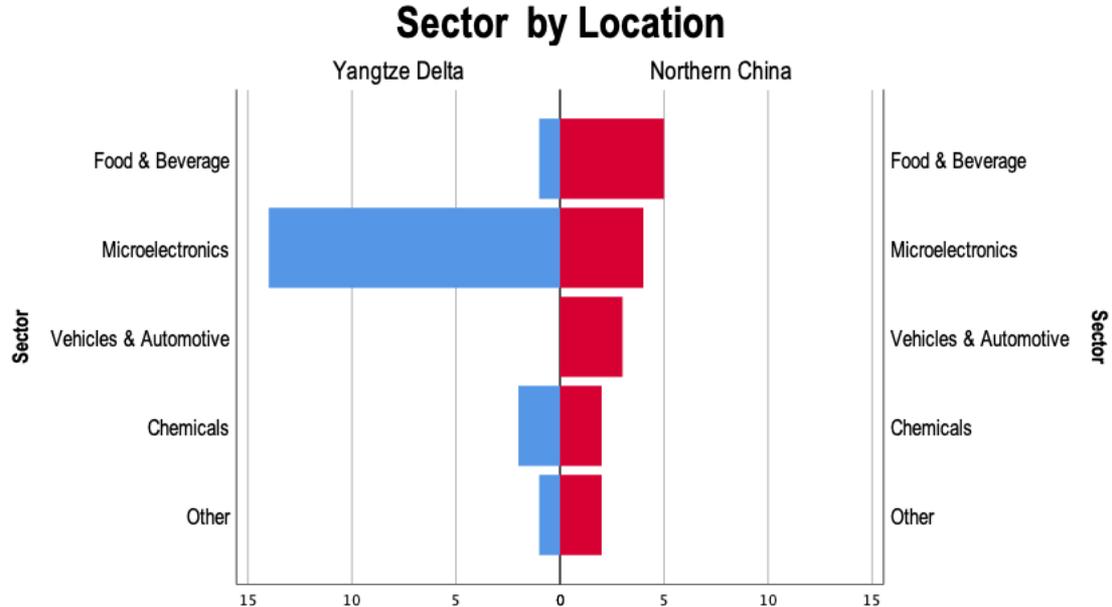
Yangtze: Water pollution and high levels of water use

RESEARCH MODEL FROM LITERATURE



Research methodology

- Quantitative (N=34) & qualitative research
- Questionnaire
- Interviews



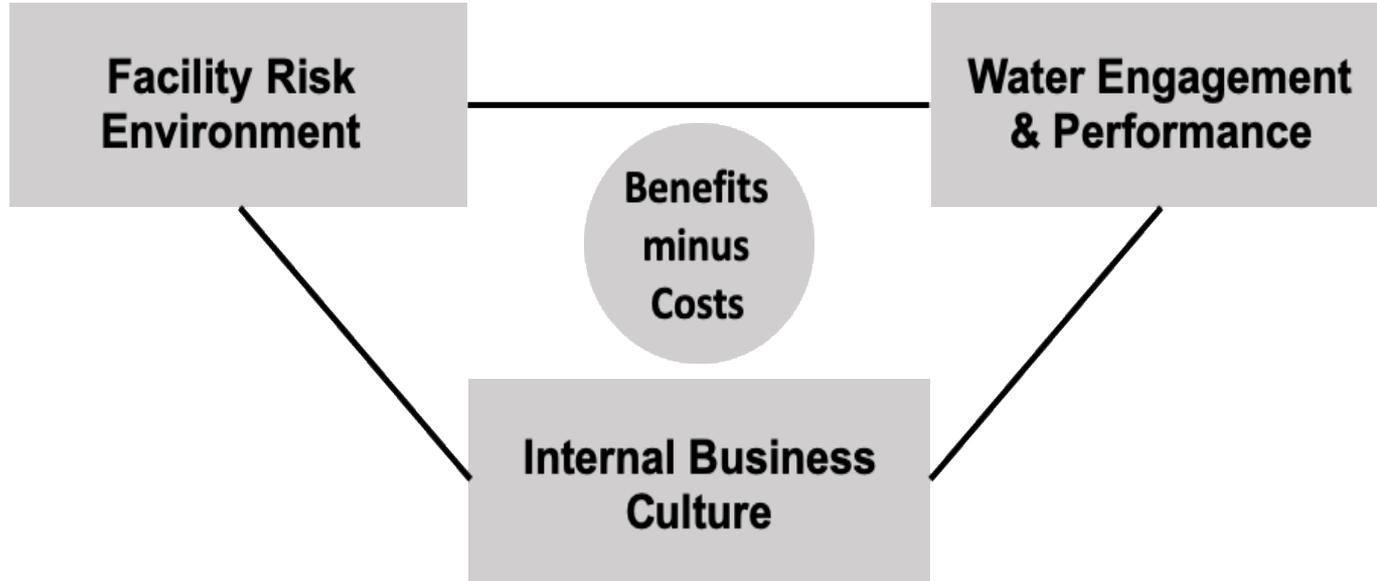
HIGH LEVEL FINDINGS (1)

- Adopt/Not Adopt was not based on rational choice or perceived benefits exceeding perceived costs
- Cultural lens:
 - Non-adopters more likely to perceive government as responsible
 - Adopters focus on environment and CSR performance
- Risk lens:
 - Physical risk not sufficient without government, customer involved
 - Cost as a metaphor for risk only relevant to facilities on the edge
 - But all are interested in opportunities to improve business ops.

HIGH LEVEL FINDINGS (2)

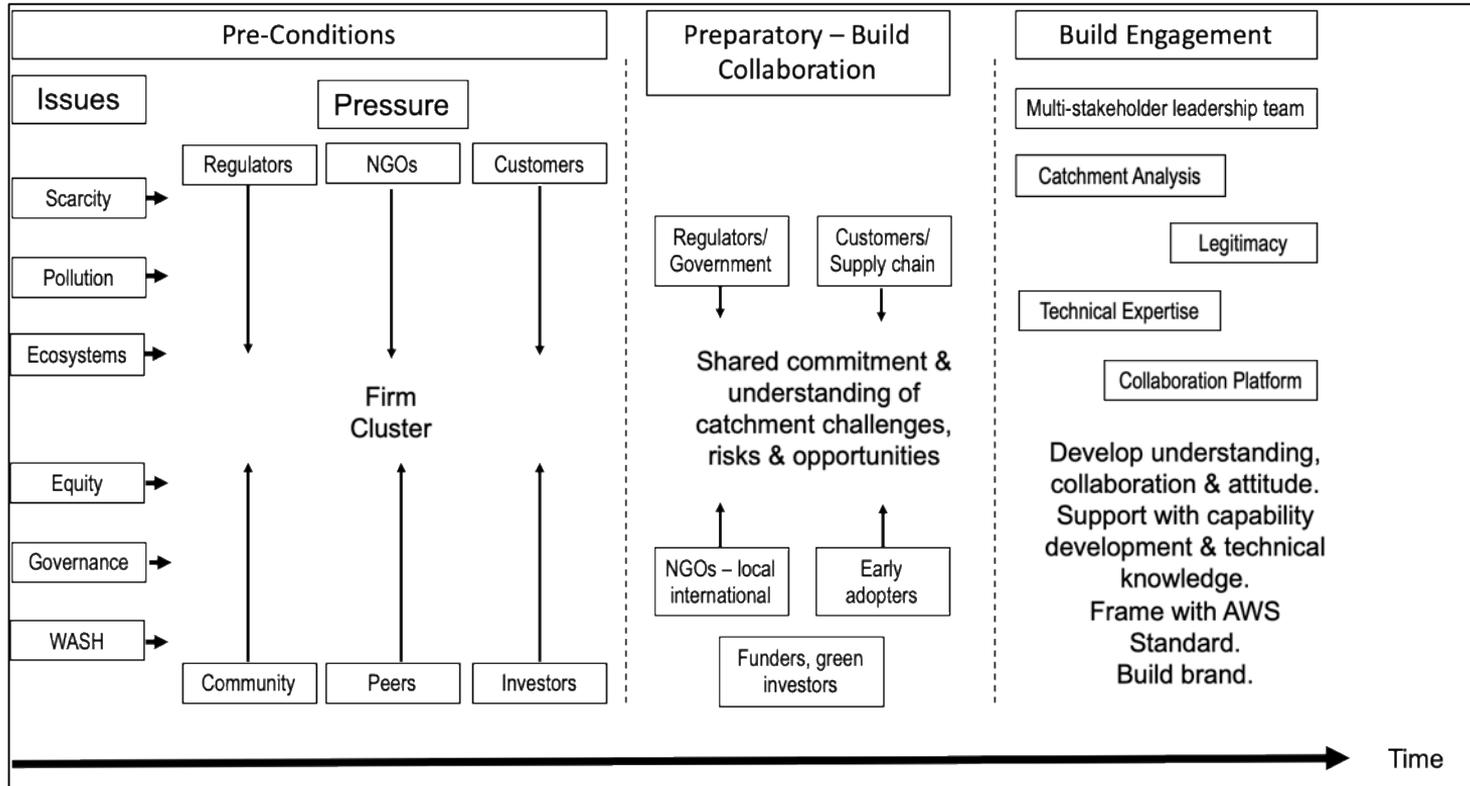
- Reputation lens:
 - Adopters place a higher value on reputation as well as customer and government relations
 - Non-adopters more focused on regulatory compliance
- Performance lens:
 - Adopters are already more engaged in water improvements
 - Adopters are well on the way to AWS level performance, but
 - Facilities indifferent to AWS tend to be best performers

MODIFIED MODEL – BOUNDED RATIONALITY (SIMON 1982)



- Support from local government official and customers
- Multi-stakeholder collaboration involving EPB, business, WWF China, AWS
- Commenced with training to introduce ideas about water management, AWS and improvement opportunities
- Deepened understanding of catchment issues
- Led to financial support from both supply chain leaders and municipal government
- Six local enterprises seeking AWS and providing

Provisional model for cluster projects



FORTHCOMING PUBLICATIONS

- Spencer, M and Stanley, J (forthcoming 2019), "Business and the global water crises: an empirical study of motivations and constraints for corporate water stewardship in two industrial areas of China" (TBC)
- Spencer, M (forthcoming 2020), 'Attitudes, obstacles and incentives: why the culture of water needs to change to build participation and implement behaviour solutions to water crises' in *Sustainable Use of Water by Industry: Perspectives, Incentives, and Tools*, edited by Cheryl Davis and Erik Rosenblum (International Water Association)
- Spencer, M and Xu, Z (forthcoming 2020), 'Water stewardship; engaging business, civil society and government in collaborative solutions to China's freshwater challenges' in *Non-State Actors and Environmental Governance in China*, edited by Oran Young, Yijia Jing and Dan Guttman (Palgrave Macmillan)

A preliminary model for industrial cluster water stewardship projects in China

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