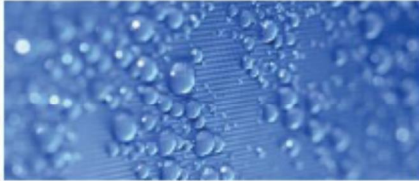




IBD 2013

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Alistair Green



**A NEW MODEL FOR
SUSTAINING PERFORMANCE OF
EFFLUENT TREATMENT PLANTS
IN BREWERIES**

Talbot
LABORATORIES

Talbot
ENGINEERING

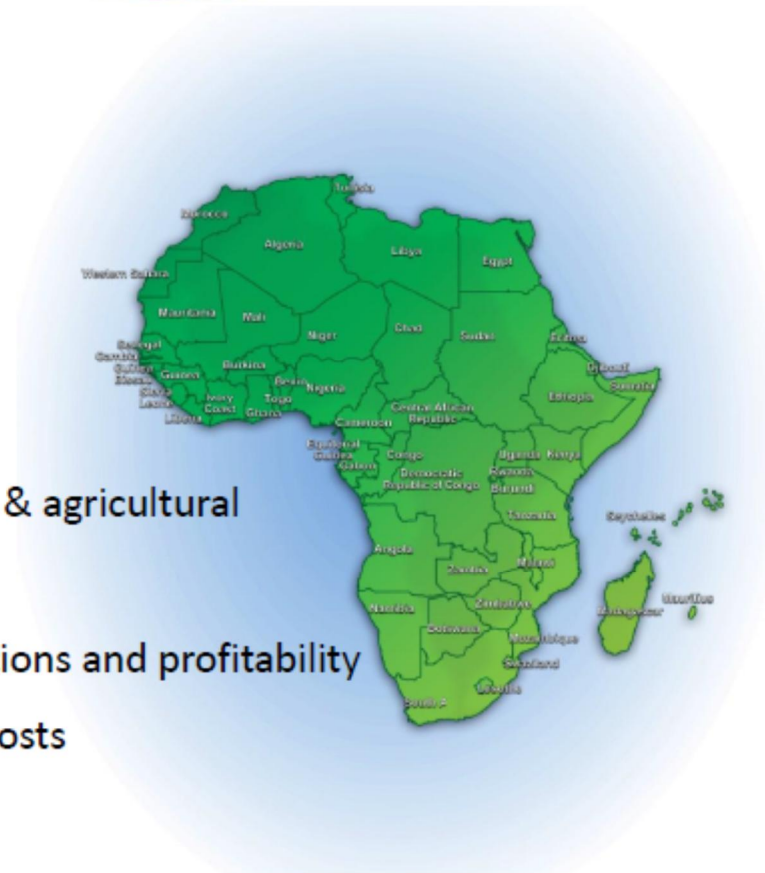
Talbot
GREEN ENERGY

Talbot
OPERATIONS



AFRICAN CONTEXT

- Regional and national water figures show:
 - Local water scarcity
 - Limited or polluted supply
 - Inadequate distribution systems
- Access to freshwater – key concern
- Competition over water resources – domestic & agricultural
- Water shortages lead to:
 - Potential disruptions to breweries operations and profitability
 - Increased production and maintenance costs
 - Revenue loss





CORPORATE SOCIAL RESPONSIBILITY

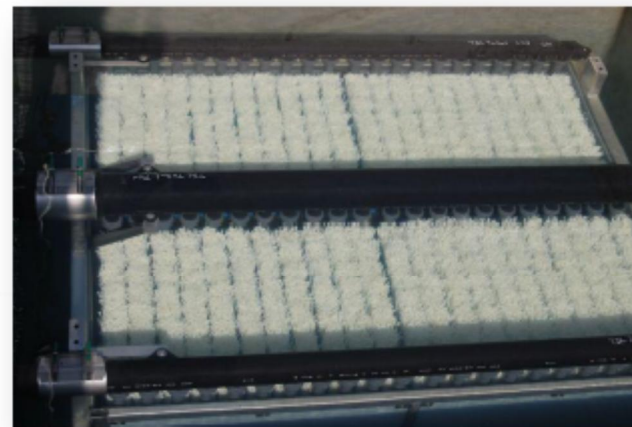
- Brewing is intrinsically water intensive
- Water – key ingredient & significant aspect of value chain
- Multi-national parent companies impose pressure to uphold international principles of CSR
- Breweries need to show commitment to community & environmental values
- Enhance public relations & corporate image
- Gain community acceptance and investor attraction





BENEFICIATION OF WASTE PRODUCTS

- Water recycling
 - Reduce water ratio's
- Biogas recovery
- Drive down production costs
- Requires new model to sustain performance - holistic management approach





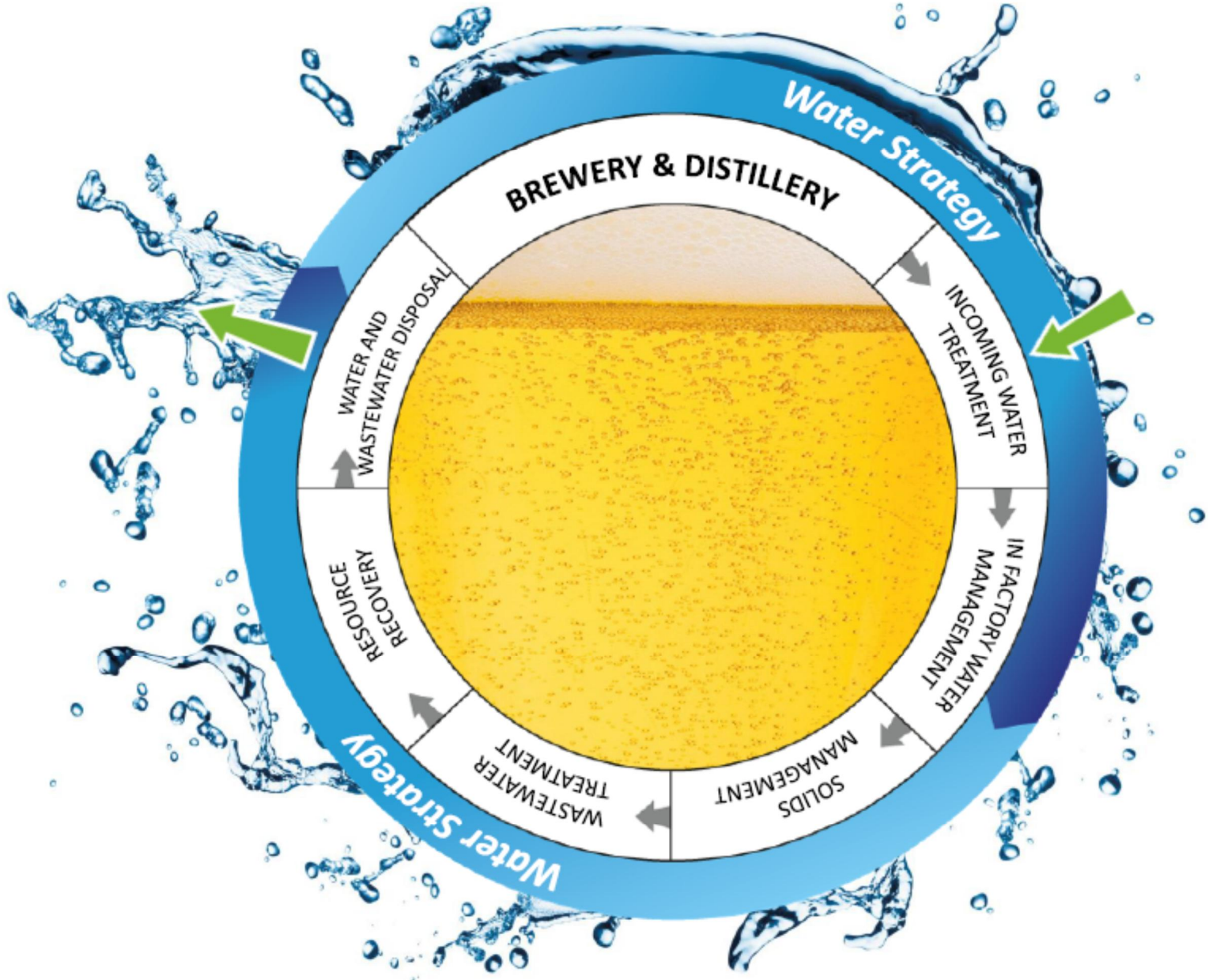
HOLISTIC MANAGEMENT APPROACH

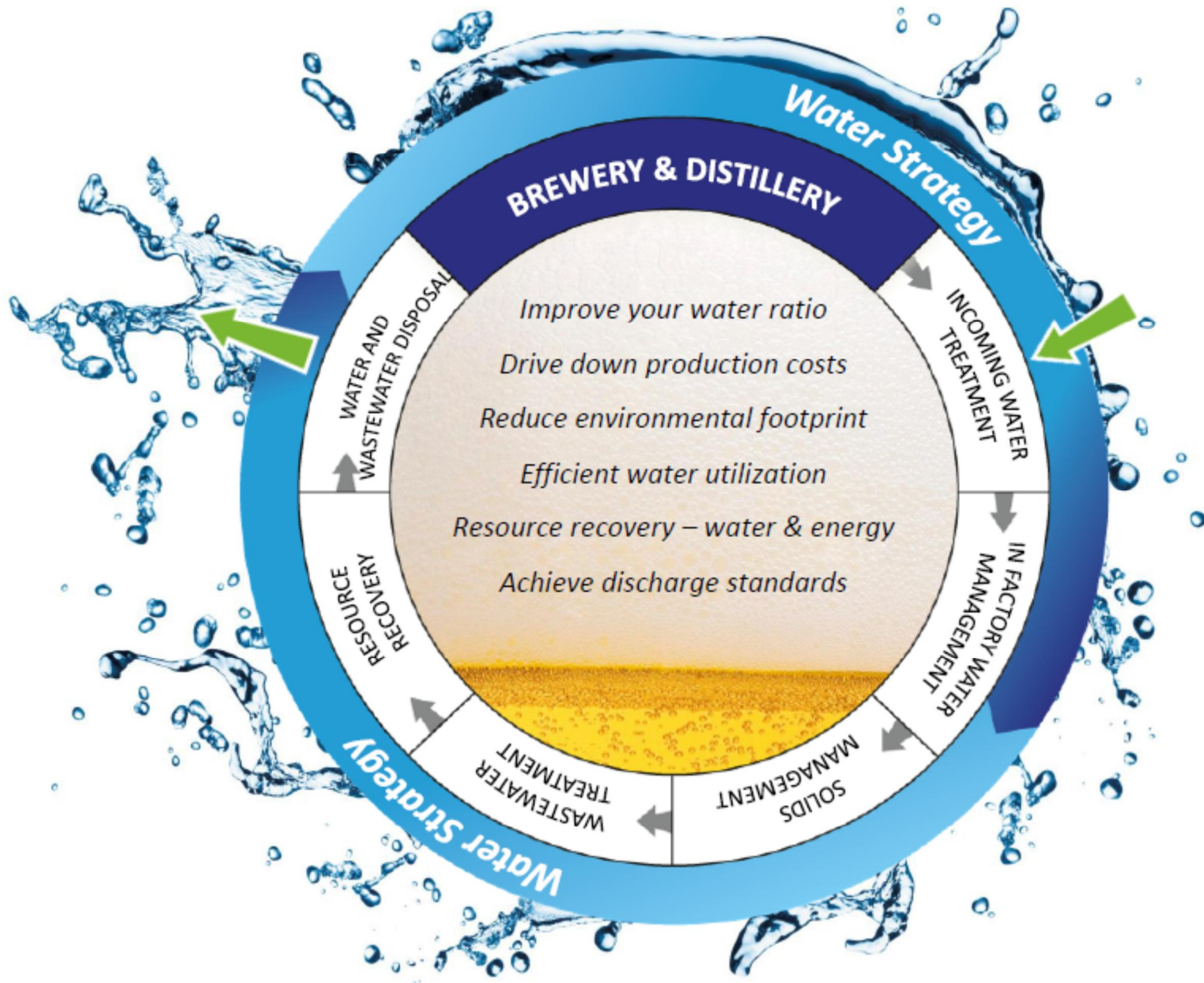
- Effective & efficient operation & management
- Focused and dedicated management team
- Stringent operating procedures
- Move from employing independent contractors for individual process steps to outsourcing to specialist utility
- Not limited to ETP - includes managing events within brewery
- Ensures continuity of responsibility & operation across elements of treatment train
- Guarantees timeous delivery of critical information
- Optimises performance, benchmarking and trending
- Mitigates potential malfunctions or disruptions

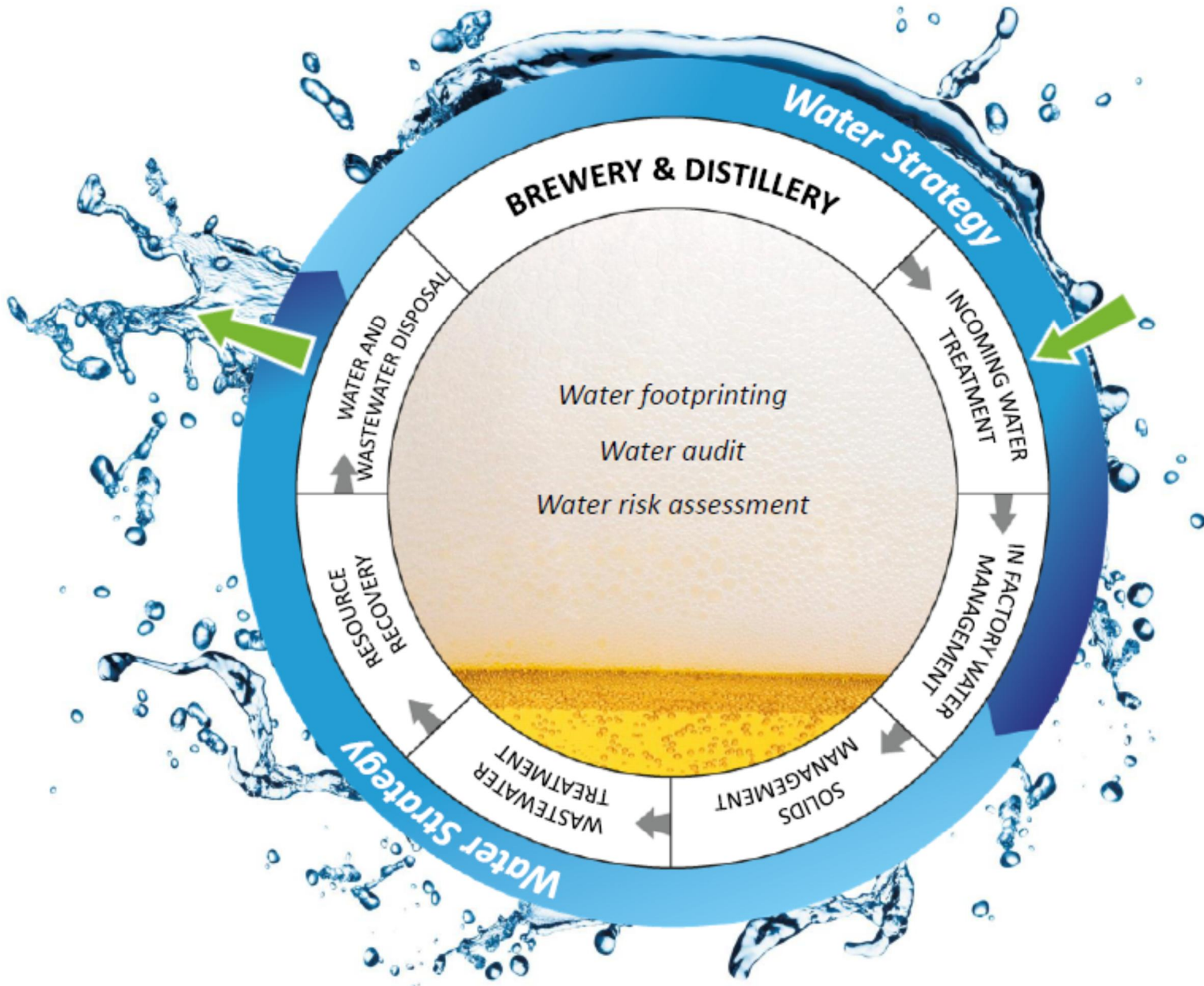


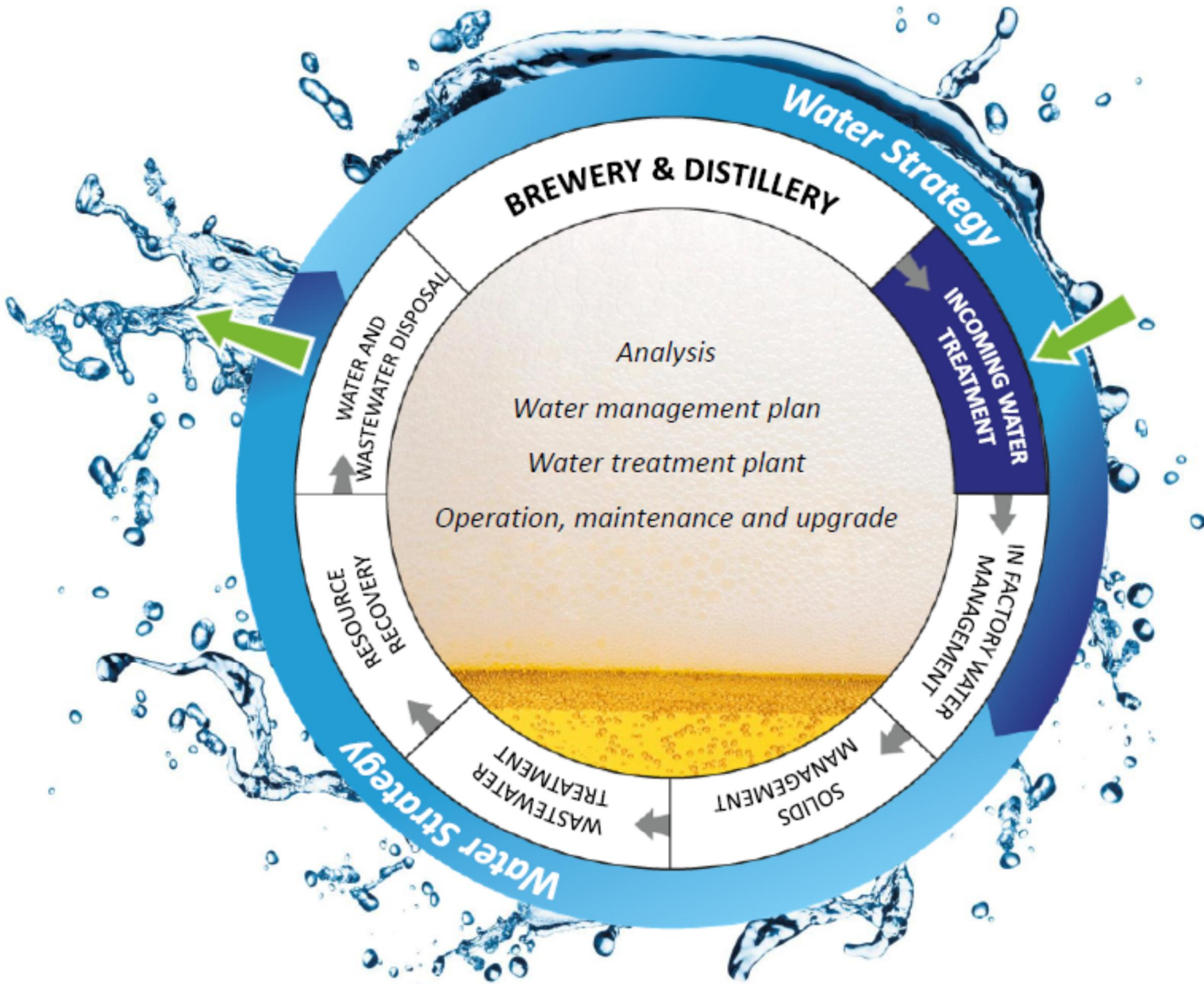
BREWERY WATER CYCLE

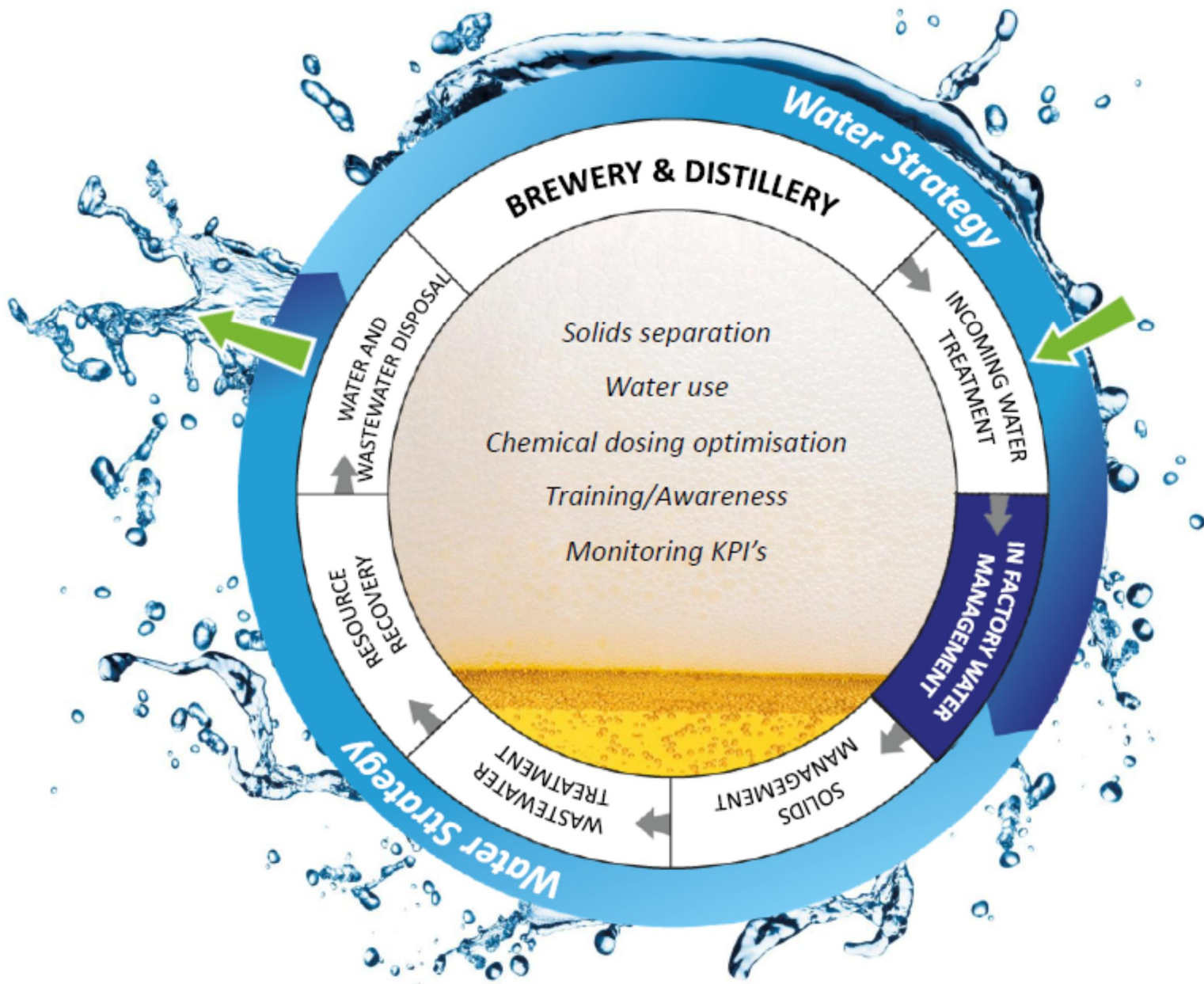
- Identify water challenges, stresses and risks inside and outside factory fence
- Understand water management and strategy in broader context
- Improve resource use through technology review and improved operation
- Potentially improve the materials and energy balance of processes
- Water issues at policy level are understood
- Water issues at operational level are not understood or optimised as well
- Specialist independent management ensure systematic monitoring , evaluation of cost of water
- Allows brewers to focus on production

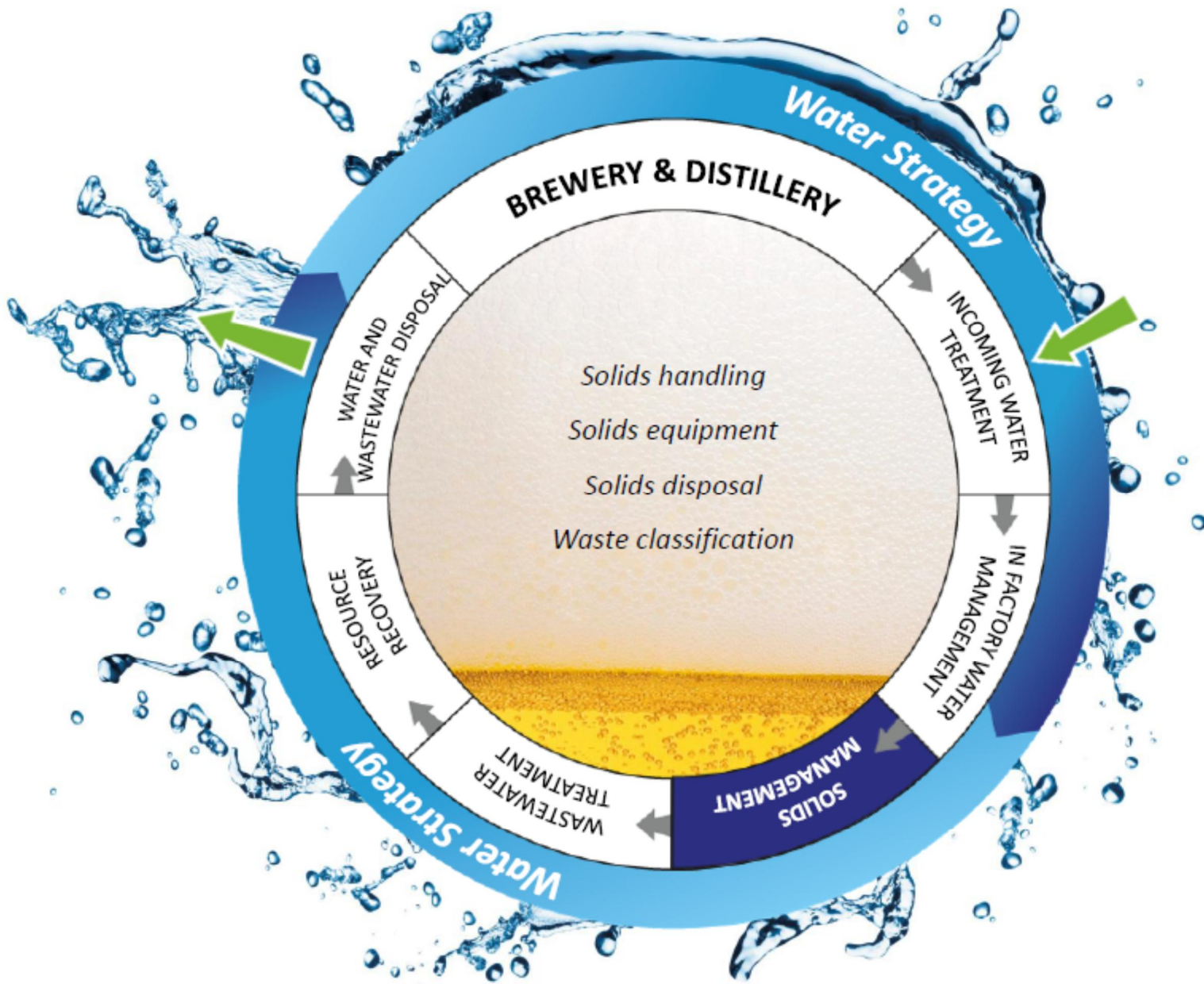


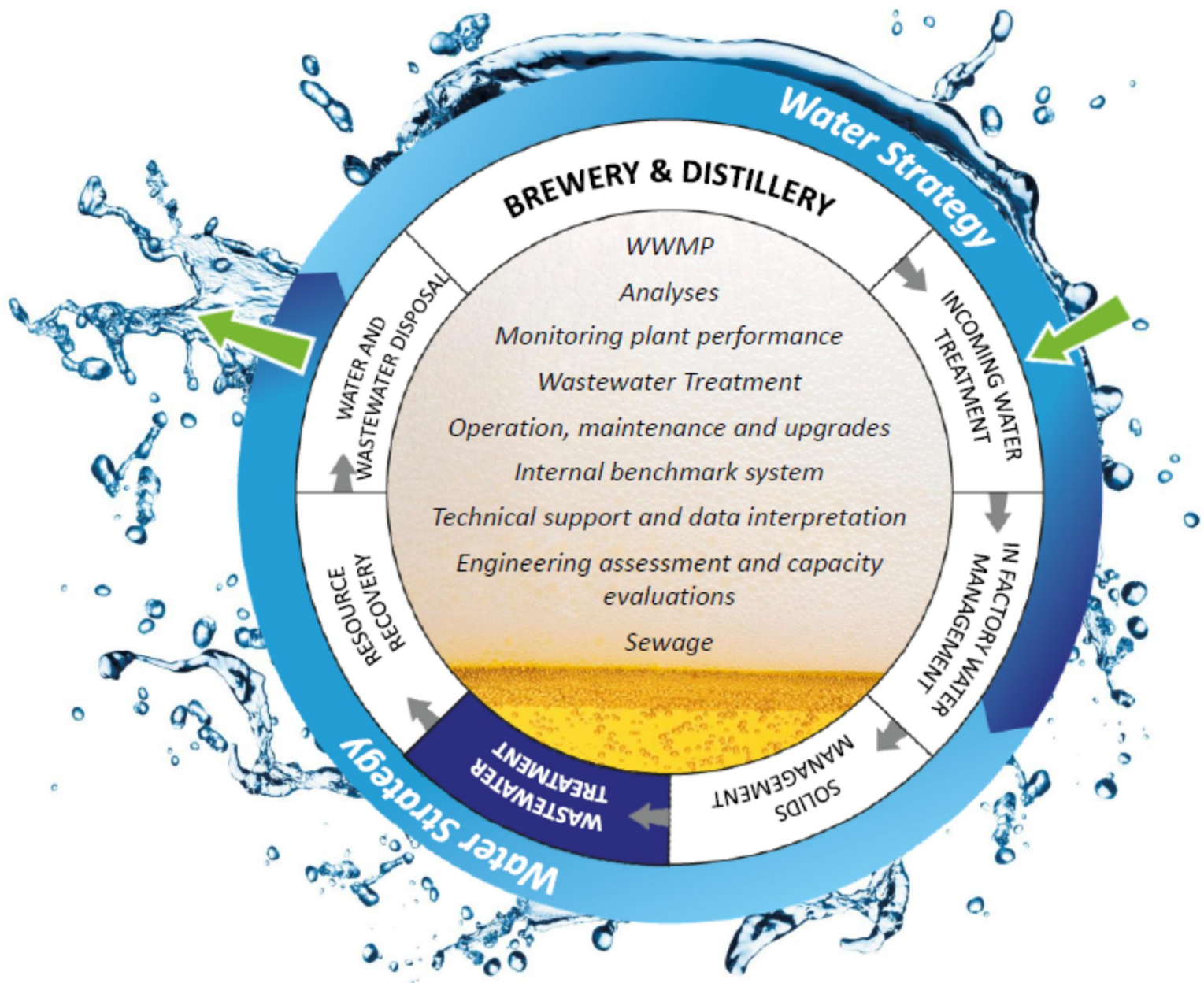


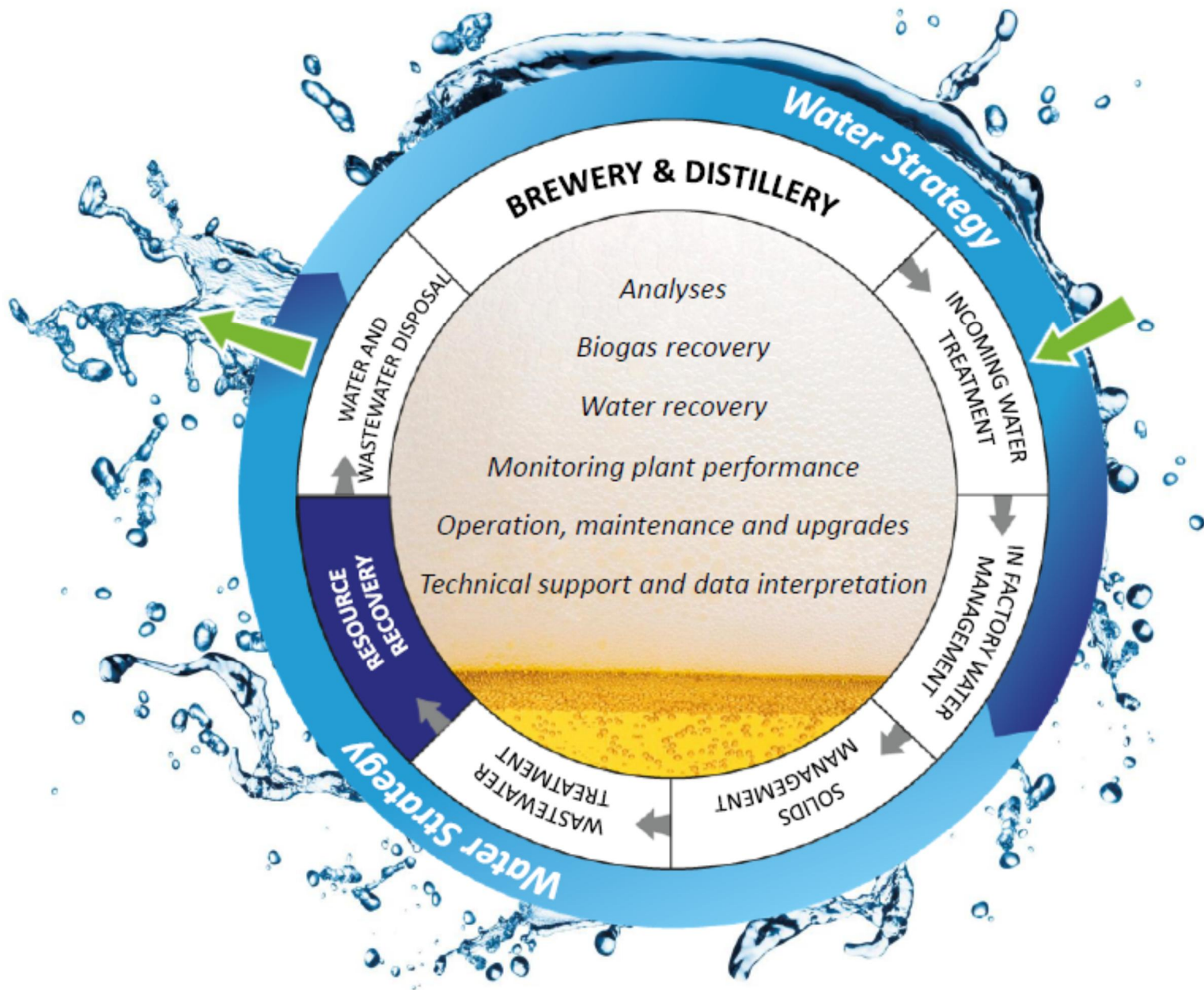


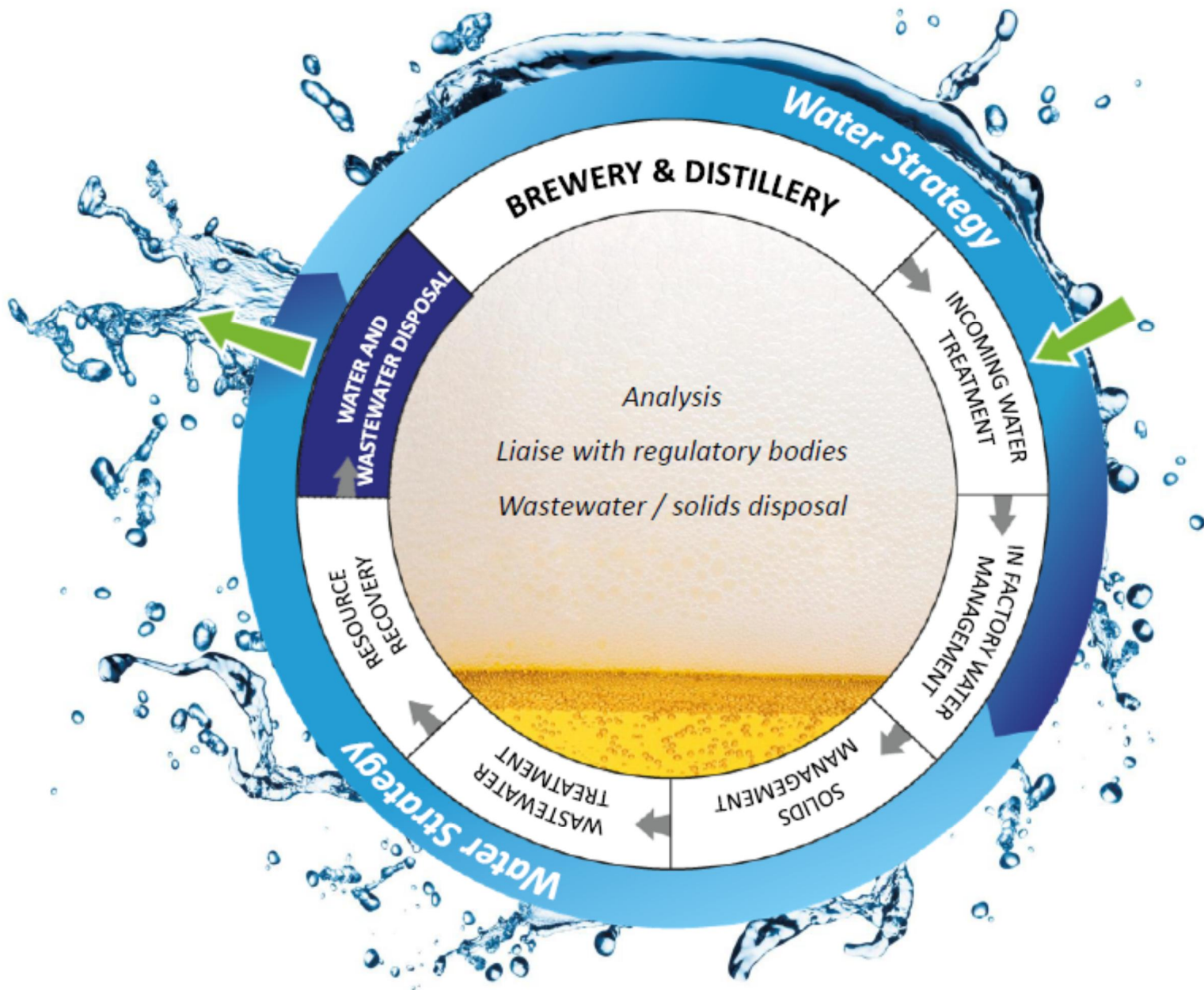














OWNERSHIP & MANAGEMENT TOOL

- Development of an ownership and management model - result from years of insight
- Ensures sustained environmental performance
- Reduces constraints traditionally placed on brewery for managing activities not directly associated with brewing or selling beer
- Overarching control from single specialist
- Better operational performance & efficiency, consistent supply of recovered resources
- Better management of discharged effluent

OWNERSHIP & MANAGEMENT TOOL

- Various innovative ownership & operational models
- Developed commercial vehicles
- BOOT – Build-Own-Operate-Transfer
- Turnkey engineering procurement construction, followed by outsourced operations contract
- Packages tailor made according to brewery requirements

Enables Brewer to have the non-core activities of his business owned and operated by independent partner on an 'across the fence' type arrangement