

RioTinto

Rio Tinto's water strategy

**Dr Elaine Dorward-King
Managing Director
Richards Bay Minerals
South Africa**



Global Picture

- Water is an increasingly scarce and valued resource across the globe. Governments, communities and industries are experiencing unprecedented concern as a result of increasing demand from fast growing populations, unsustainable water practices and persistent droughts. Climate change is expected to place more pressure on available water resources, with some regions predicted to become much drier and other regions wetter.



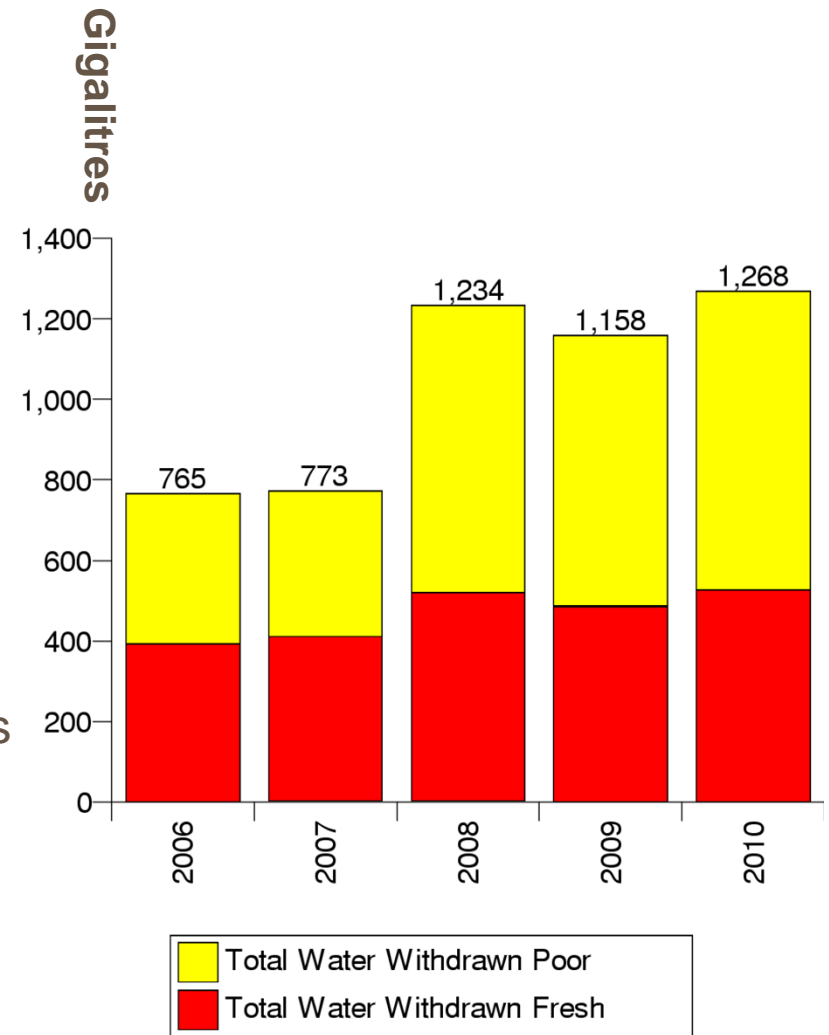
Agenda

- Rio Tinto's water use
- Rio Tinto's water strategy
- Operational examples
- Communicating our water footprint
- Way Forward

Rio Tinto's water use

Need water to operate our businesses

- process and mine ore
 - manage waste tailings
 - suppress dust on roads
 - for people to wash and drink
 - as supply for communities
 - hydropower
- Nationally mining is a small water user
 - But at a catchment scale, can be largest
 - Water is from different sources and qualities



Drivers for developing a water strategy

Operational drivers

- Need water to do business but supply cannot be assured
- Production impacted from water shortage, surplus, quality
- The cost of water will rise and discharge will cost more
- Each operation has it's own challenges

Strategic drivers

- Communities require sufficient quantities of clean water
- Ecological water needs
- Water allocations re-prioritised to people first; industry last
- Valuing water through markets, ecosystem services
- Increased scrutiny on water management and water use
- Climate change – energy – water linkages

Millennium Development Goals

By 2015, halve the number of people without safe drinking water and adequate sanitation

Operational challenges and risks

Water Scarcity

- Rio Tinto Alcan in Gladstone Australia – 50% cut in water allocation in 2002-3
- Northparkes Copper mine, Rio Tinto Coal Australia – water reduction in Australia
- Rössing Uranium - desalination in Namibia
- Oyu Tolgoi– water scarce region in Mongolia
- Rio Tinto Iron Ore – Port expansion in Western Australia
- Rio Tinto Alcan - cuts to hydro power in Canadian operations

Water Surplus

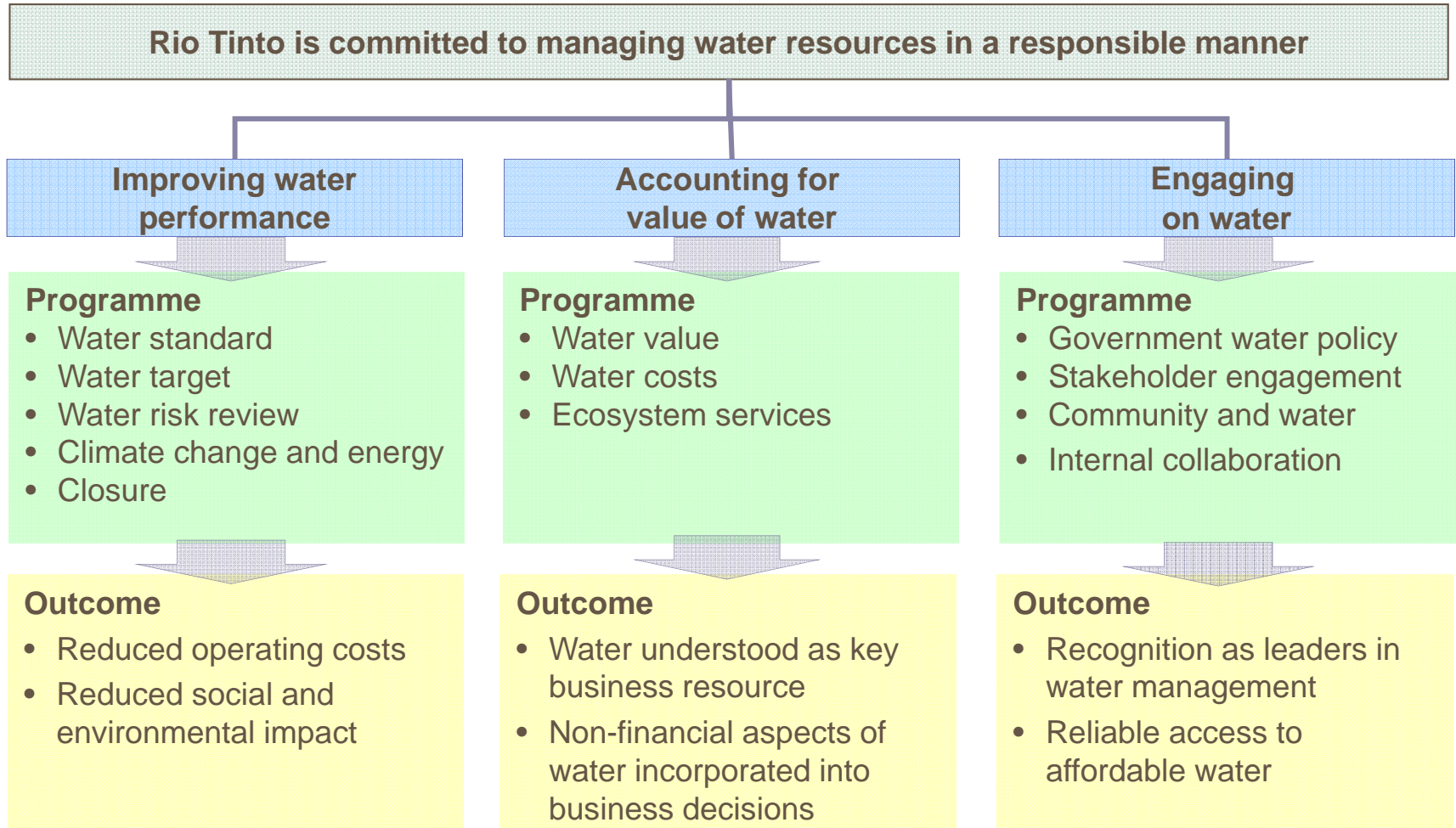
- Rio Tinto Iron Ore in open cut mines in Western Australia
- ERA uranium mine in northern Australia

Water quality

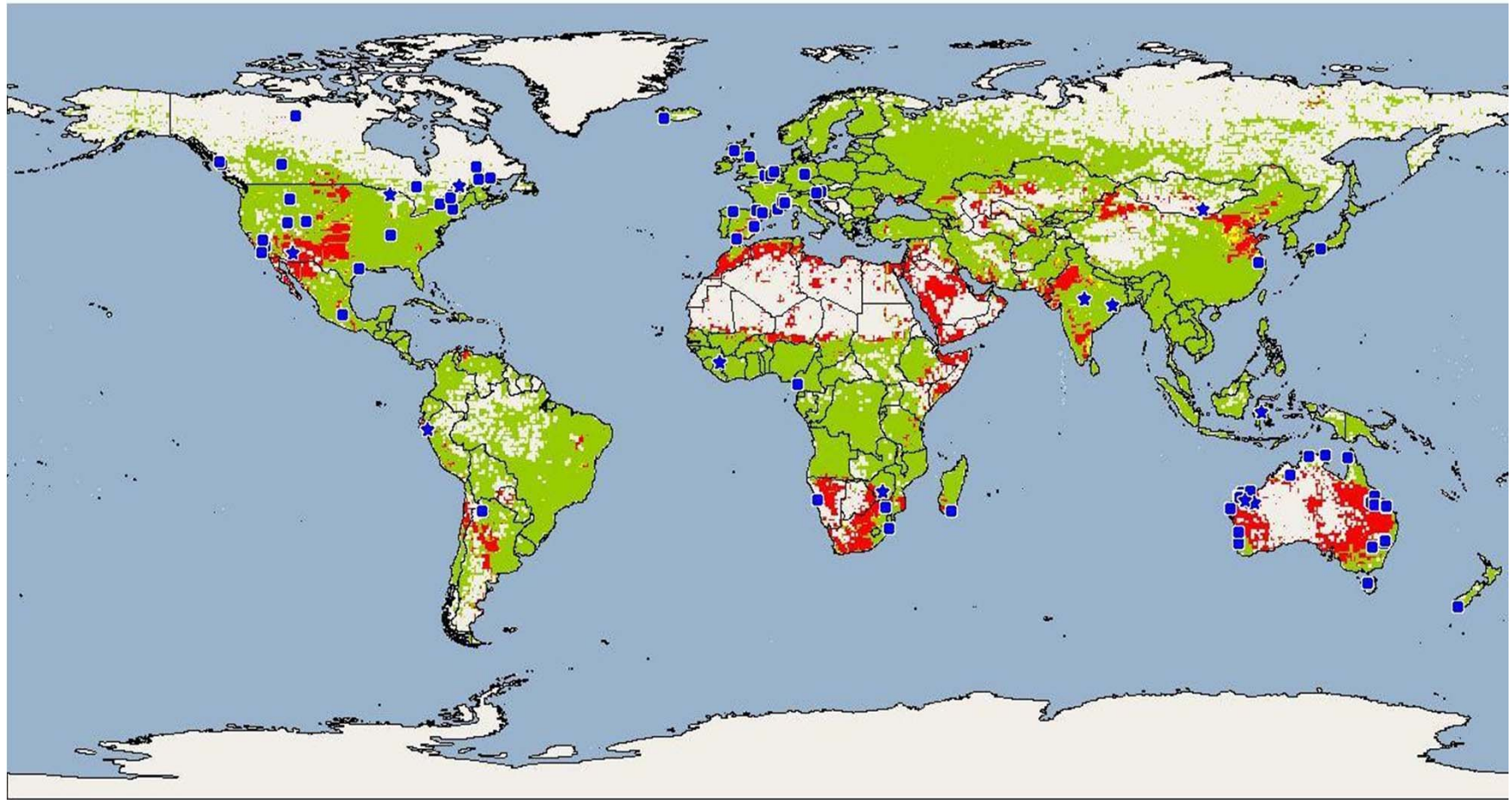
- ERA uranium mine in northern Australia
- Kennecott Utah Copper in U.S. historical legacy



Rio Tinto water strategy



Managing water risk



Legend

- ★ Projects
- Operations

Water Stress Index

- No Data
- Scarce
- Stress
- Medium
- Low

Driving water performance

- **Water standard** sets minimum standards for water wherever we operate
- Reflects water risk areas and is mandated from exploration to closure
- The water standard is audited, protocols and training
- Key areas for operations to focus on risk include;
 - **water management plans**
 - **water balance** - water inputs, outputs and future requirements including climate variation and climate change
 - **water accountabilities** and responsibilities eg water team



Group water targets set direction 2008-2013

- Reduce by 6% our freshwater used per tonne product.
- Sites have also set internal targets on;
 - **Recycled water**
 - **Site ecological targets** for example improving water quality of discharges, understanding ecological impact of discharges, managing impact of surplus water discharges



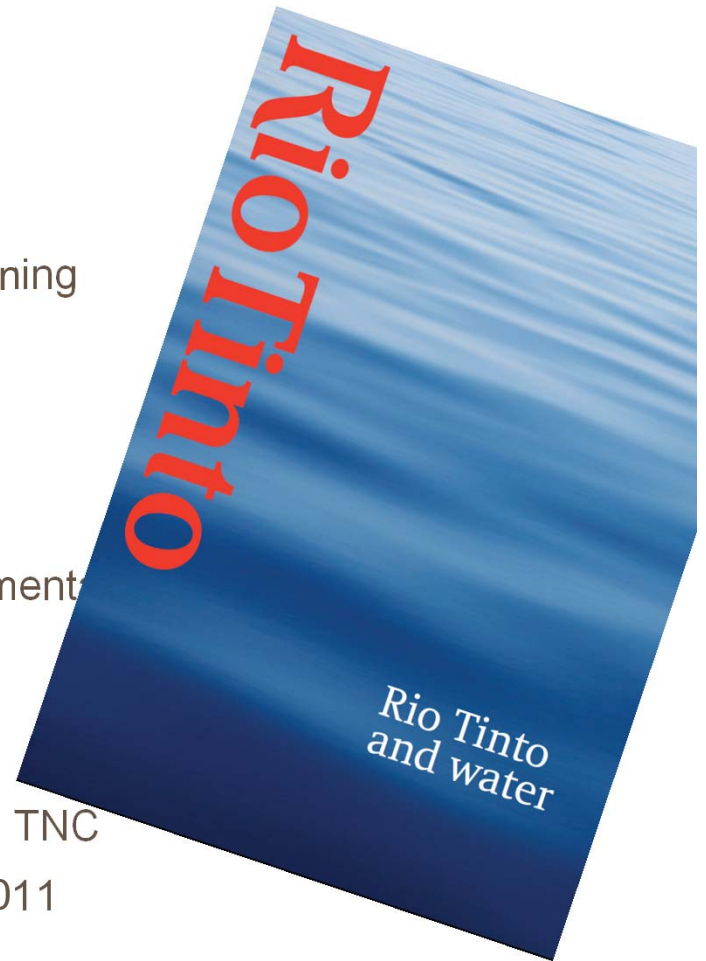
Water risk review tool provides site road map



Engaging with others

We engage with

- local communities on water supply and management challenges
- with governments and other organisations to support developing water policy at regional, national and international levels eg the International Council on Mining and Metals.
- with organisations committed to sustainable water management;;
 - the World Economic Forum water project
 - the Johnson Foundation at Wingspread Environment Forum in the US
 - the World Business Council for Sustainable Development (WBCSD) water leadership group
 - the Water Stewardship Alliance led by WWF and TNC
 - Carbon Disclosure Project water project 2010, 2011



Operational examples of improved water management

- Argyle Diamonds - 95% saving in water use from Lake Argyle since 2005
- KUC is treating legacy groundwater contamination to sell to water authority
- Hismelt® – partnership with water authority to treat waste water in place of potable water
- Rio Tinto Alcan Yarwun invested in the option of seawater cooling in place of potable water
- Rio Tinto Alcan Weipa adopted a hierarchy of water use to protect Great Artesian basin
- Diavik working with local communities to monitor quality of water

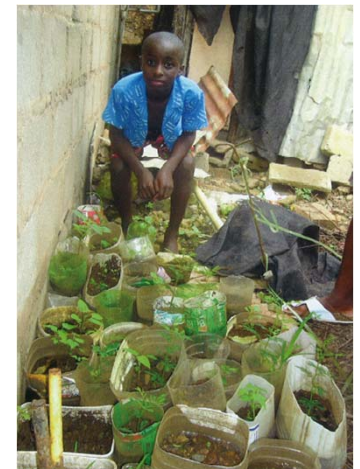
Example: Community water supply, Madagascar

- QMM is developing a mineral sands project in south Madagascar
- 50 000 people in town - many living close to or below the poverty line
- The quality of potable water supply to Fort Dauphin is fundamental to protect the health of all residents including QMM staff
- A collaborative partnership with the World Bank and the local water authority was developed;
 - QMM is rehabilitating the existing town supply infrastructure and building new treatment plant
 - World Bank is upgrading the reticulation network, and operation by the local water authority is agreed
 - QMM will assist with training and management

This is an example of leading practice for other Rio Tinto projects

Example: Water reuse and strategic input - Richards Bay Minerals, South Africa

- RBM mine heavy minerals along the east coast of South Africa
- Mining lease areas are in some instances located in close proximity to rural communities
- Ensuring that the impact on existing water resources and aquatic ecosystems are mitigated or limited has become crucial
- Initiatives undertaken by RBM:
 - Recycling and re-use of water (16 to 20 times re-used)
 - Partnerships with municipalities on planning and investments in water infrastructure
 - Membership to the UMhlathuze Catchment Management Forum and the Coastal Working Group
 - Community capacity building and development through a dedicated Corporate & Community Relations Department



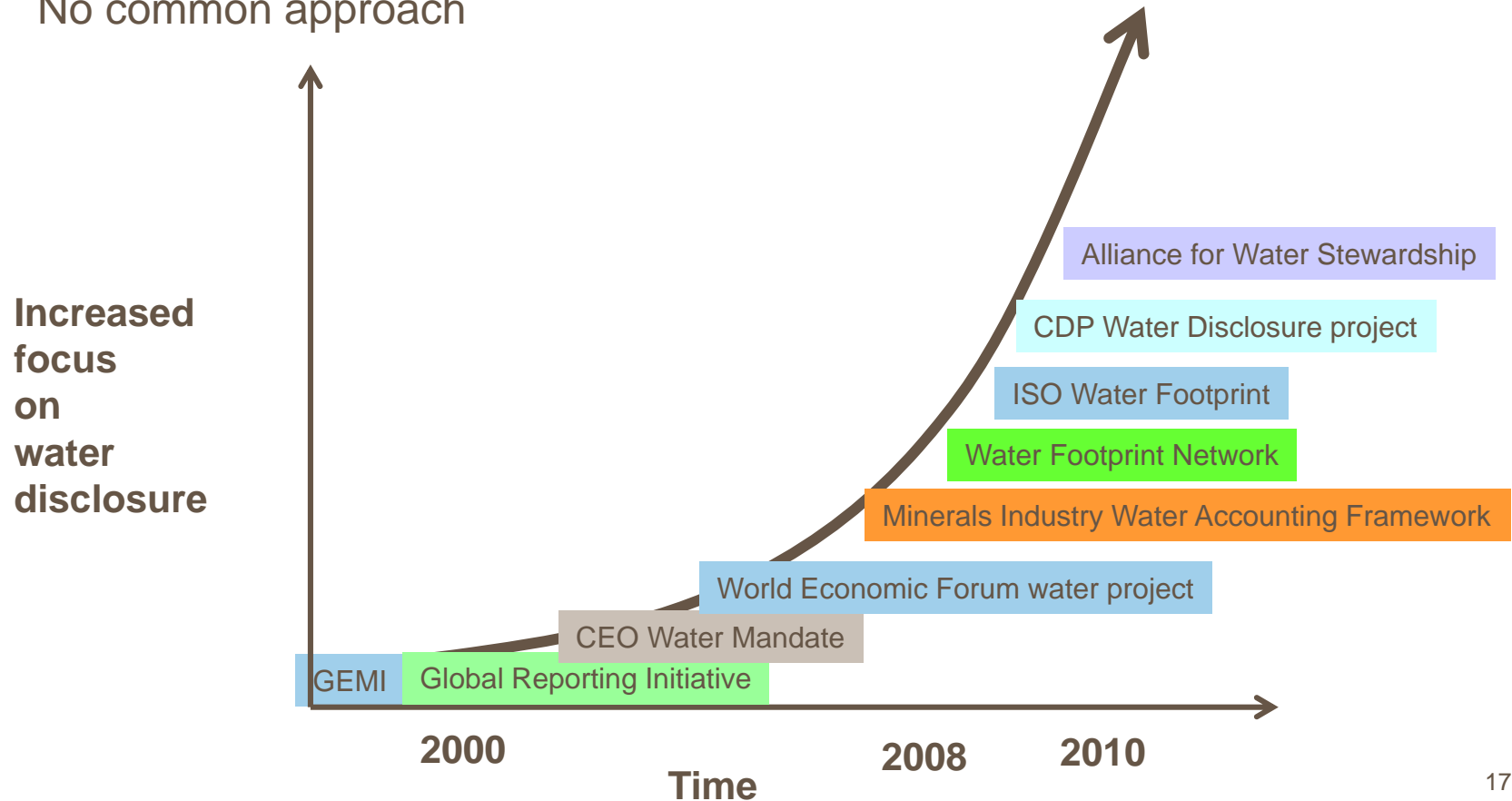
Example: Water and biodiversity at RBM

- RBM's implement a progressive rehabilitation program (oldest rehab sites = 35 years), limiting exposed areas and subsequent impact on the soil. The program also aim to restore sustainable land-use options after mining
- There is an active engagement with Conservation authorities, ecological researchers (long term commitment) and local communities
- Commercial trees used (*Casuarina equisetifolia*) are adapted to use less water than *eucalyptus species* and are fast growing (8 year harvest cycle) low invasive properties and assist with nitrogen fixation in the soil.



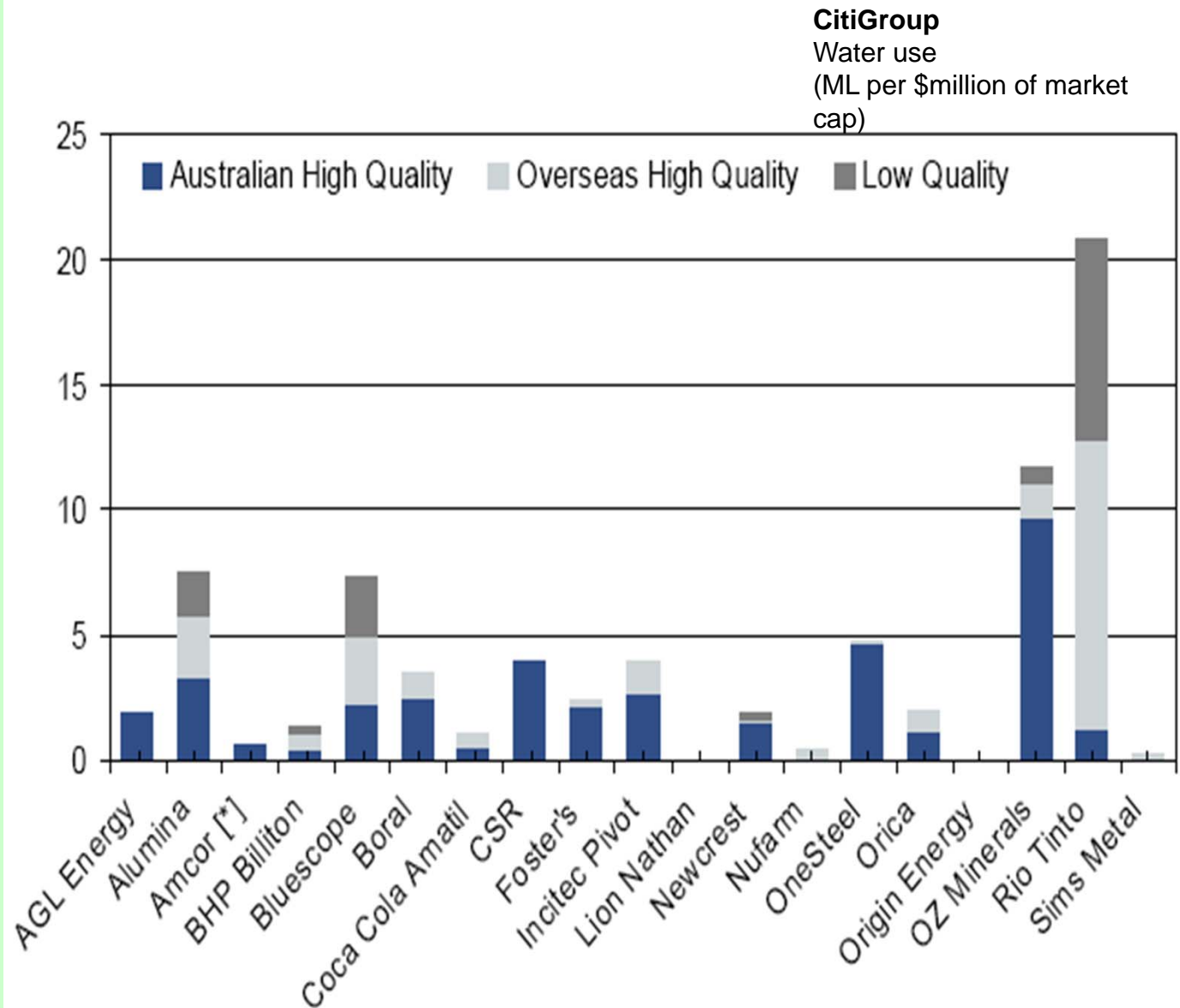
Communicating our water footprint

- Plethora of water initiatives
- Investment sector want to understand the level of risk in companies
- Water issues are local so difficult to report with Group numbers
- No common approach

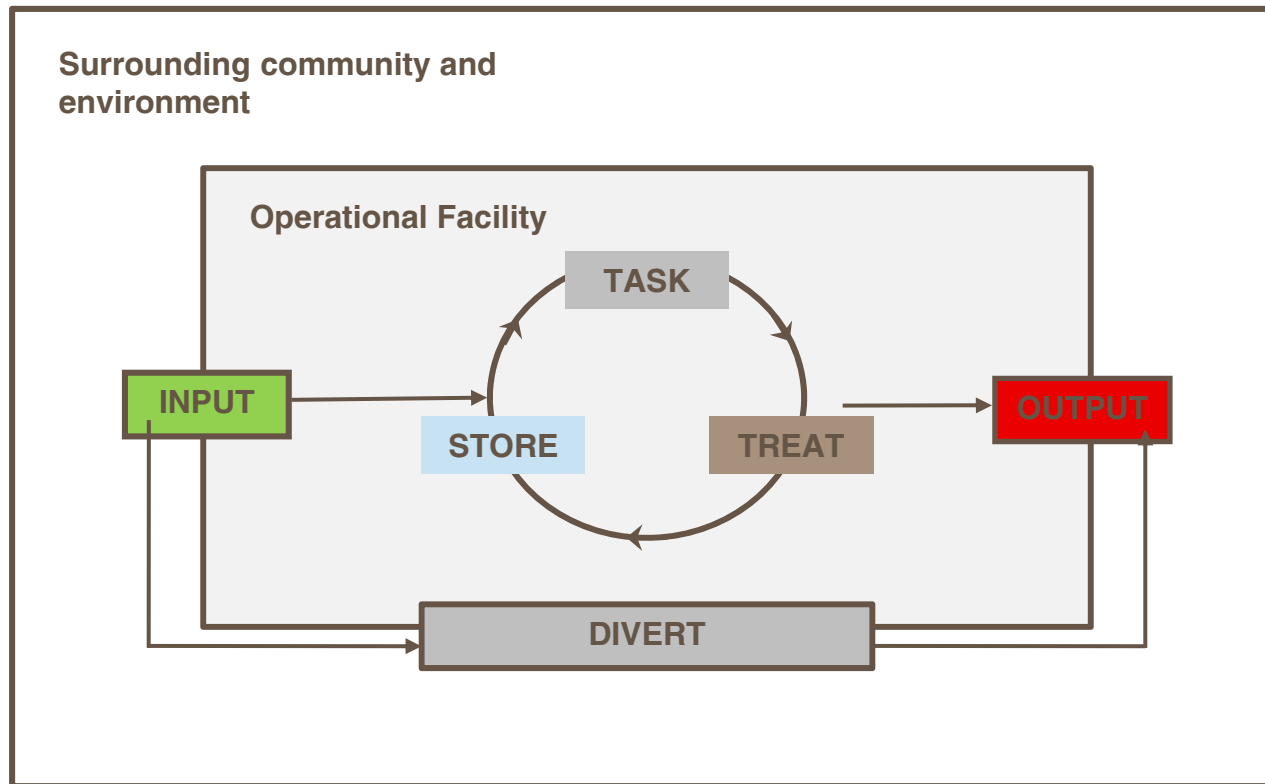


Water reporting

- Increasing focus on water reporting
- Rio Tinto completed Carbon Disclosure Project's water report in July 2010
- Working with others to develop industry water accounting framework for consistent water reporting
- http://www.wateraccounting.net.au/wiki/SMI_MCA



Water accounting framework



- Water framework being advocated by ICMM to contribute to policy development on national and international water reporting methods.
- Success in working with government in Australia and developing approaches that are practical for mining industry

Trends in water disclosure

- **Global standards** for water use and impact
- **Local water risk**, water stress, site data, water quality
- **Water in supply chain** both physical, regulatory risk
- **Stakeholder engagement on water** including human rights
- **Investor understanding** of industry water risk

Way Forward

- Continue to drive implementation of the Water Standard and Water
- Develop Business level water strategies to manage local and regional water risk and opportunities
- Work with other groups on water issues eg industry, NGOs, government
- Share experiences, learn from others, contribute to water discussion and debate at local, national and international levels

