



2015 UN-Water Annual
International Zaragoza
Conference
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Water and Sustainable Development
From vision to action

UN WATER



Water Quality and Water Reuse Overview Presentation

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AquaFed

THE INTERNATIONAL FEDERATION OF
PRIVATE WATER OPERATORS

www.aquafed.org

Introduction of Panellists

- BASF – Chemical Producer
Brigitte Dittrich-Krämer



- Véolia – Operations & Technology Provider –
Dominique Gatel



- Aguas Andinas – Public Utility Operator – Jordi Valls



AquaFed

- The International Federation of Private Water Operators
- Membership open to private operators of all sizes, all business models, all countries
- 1 of our 3 part mission is to bring private sector expertise to help with water issues at global level
- Partnerships including : UN Water, BIAC, GBA, ICC, IWA, WBCSD, etc.
- Co-opted member of UN Water's SDG Taskforce

Water Quality & Pollution Prevention

Under-rated Importance

- Quality is as important as Quantity
- Polluted water is Dangerous, Unusable or Too Expensive
- 3 broad categories of pollution:
 - Natural Pollution
 - Point Source Pollution
 - Diffuse Pollution
- It is largely a preventable problem
- The pressures are growing
- The “blind side” of the water cycle

Water Quality & Pollution Prevention

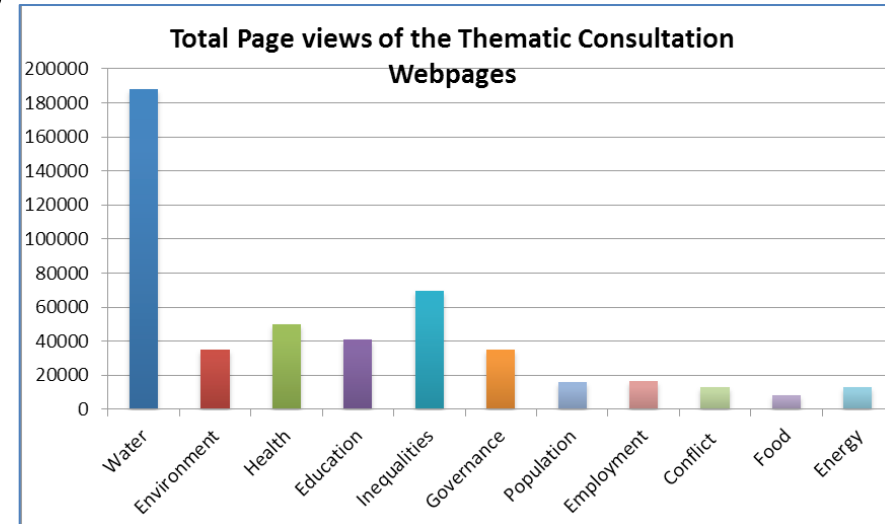
Fields of Action

- Prevention, Removal & Restoration
- 3Rs
 - Reducing pollution by preventing emissions - R1
 - Removing pollution from used water - R2
 - Restoring by recycling or reusing used water - R3
- Achieved by a combination of:
 - Incentives: Self-interest, Market forces
 - Regulation: Coercive and Control
 - Collective Action: Community of interest
 - Infrastructure & Technology: Public & Private domain

Water Quality & Pollution Prevention

Raising Political Awareness

- Rio+20 input
 - Zero draft input with UN Water & BASD
- During Rio
 - Support to negotiators
- Post-Rio
 - Online consultation with UN HABITAT
 - Promotion in global events
- The SDG Process
 - Collaboration with GBA, Global Compact
 - Attendance at sessions & side events
 - UN Water task force & working groups
 - Monitoring taskforce
- So far so good, but must not take the final outcome for granted



Water Quality & Pollution Prevention

Global Political Objectives

- As defined at Rio+20
 - *significantly reduce water pollution and increase water quality, significantly improve wastewater treatment and water efficiency (para 124 of outcome document)*
 - *reuse of treated wastewater (para 109)*
 - *reducing air, water and chemical pollution leads to positive effects on health (para 141)*
- As defined at Budapest Water Summit
 - *Reduce pollution and increase collection, treatment and re-use of water: Protect human Health and the environment from municipal, agricultural and industrial water pollution, by reducing pollution, collecting and treating wastewaters and maximising their re-use*
- Goal – Target – Indicator – Monitoring - Reporting

Water Quality & Pollution Prevention

Critical Issues for Success of SDG

- Goal & Targets
 - Ensure they survive the negotiations
- Indicators
 - Must develop simple indicators for each measurable element of the targets
 - These must support the **political objective** not be for the ease for statisticians
- Monitoring & Reporting
 - Processes that are appropriate at each country level
 - Enable global consolidation

The Water Quality & Pollution

Prevention Dimension of the SDGs

- **6.3** by 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse by x% globally
- **12.4** by 2020 achieve environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks and significantly reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment

Incentives & Regulation

Example of BASF

- **BASF & Water**

- Water is a vital resource for the chemical industry.
- BASF **uses** water as a coolant, solvent and cleaning agent,
- Water is a **component** in many of BASF's products.
- BASF offers its customer's **solutions** that help to purify water, use it more efficiently and reduce contamination.

- **Regulatory Background**

- EU Water Framework directive
- EU Chemicals legislation

- **Motivation for BASF**

- Increase resilience towards the resource water at BASF's production sites

Incentives & Regulation

Example of BASF

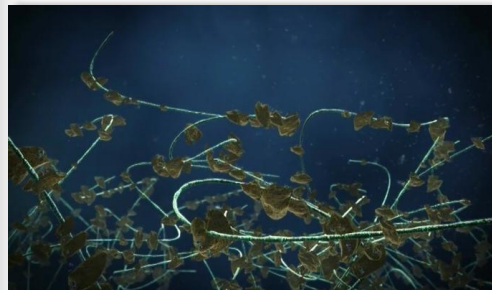
- **Approach used**
 - European Water Stewardship (EWS) standard
 - BASF introduced a corporate goal of establishing sustainable water management at all sites in water stress areas by 2020 by applying the EWS standard.
 - Risk reduction
 - BASF improved wastewater analytics at the sites in Ludwigshafen, Germany, and Geismar, Louisiana, to identify unanticipated emissions at an even earlier stage.
- **Costs & Benefits**
 - Costs vary depending on complexity of a site and already available knowledge / technology
 - Through the implementation of the EWS standard the production sites receive a clear picture of their water management because risks and areas for potential improvement are identified = savings.

BASF Water Solutions



European Water Stewardship (EWS)
standard - gold certification

Membrane Technology



Waste water treatment chemicals

Water quality : Some Veolia contracts

Industrial & Municipal clients

La Cartuja WWTP treats 92% of Zaragoza WW + stormwater

Shell Carmon Creek—Oil Sands: 99% Produced water recycling for vapor injection

Guayaquil WW Treatment up to 77.5% WW collected

AngloGold: Re-use of the treated water in the metallurgical process

Windhoek WW Recycling Plant

Novartis 15 Production site CH, IT, IR, SP & FR

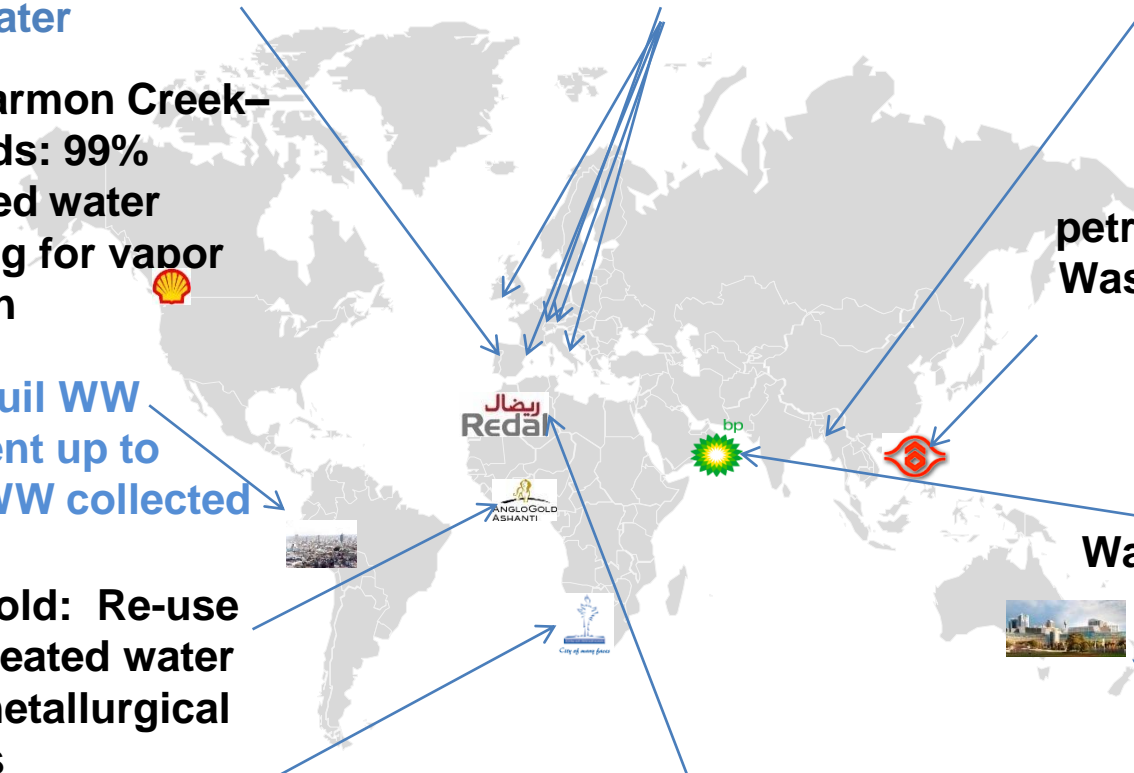
Goalmari (Bangladesh): Arsenic removal for potable water supply

Taiwan's largest petrochemical plant: FPCC Waste water treatment and recycling

BP Khazzan (Oman) Water for gas production,

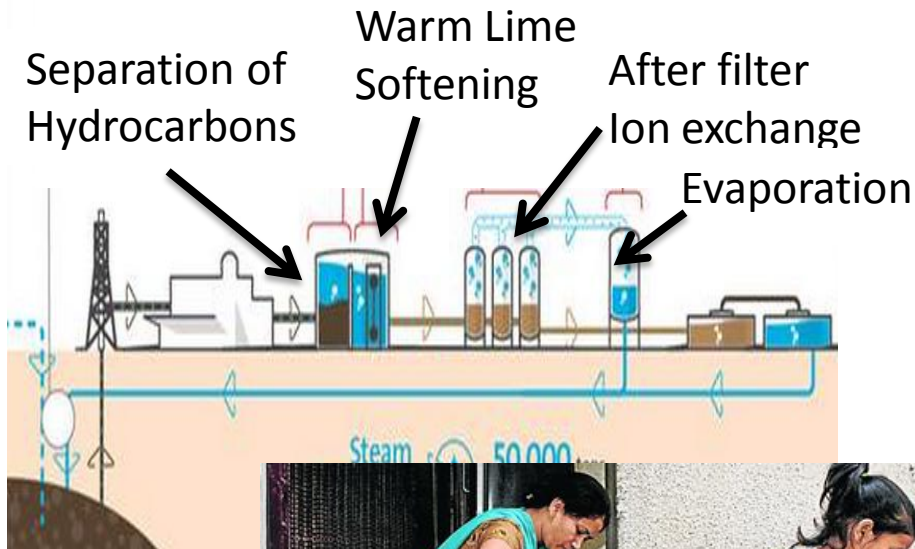
Tanger, Tétouan, Rabat : Ramping-up WW collection to 96%

Sydney Darling Quarter recycling: reduction by 92% of demand for raw water



Water quality : Some Veolia Actions From Physics & Chemistry to People & Skills

Technology



Capacity Building



Social engagement

Water quality : Veolia Driving Improvement

Triggers	<ul style="list-style-type: none">• Tighter Environmental /health law: Discharge permits, liability, standards, drinking water accessibility , bathing water• Water scarcity• Accountability of National / local authorities / or Industry
Drivers	<ul style="list-style-type: none">• Scientific progress: Epidemiology/toxicology• Economic competition & multiple risks• Financial /governance engineering of IFIs & others• Technical progress: water /wastewater management capabilities
Barriers	<ul style="list-style-type: none">• Project governance & political leadership?• Balancing Tariff, Taxes, Transfers• Need to professionalize the whole value-chain• Keeping momentum beyond the <i>construction</i> phase
What has worked well?	<ul style="list-style-type: none">• TOTEX optimization: CAPEX + OPEX• Capacity building: 1,000 trainers at Veolia• Social engagement for the poorest• Technology development & Upscaling

Collective Action

Collaboration between Public Authorities of Santiago, Chile & Private Utility - Aguas Andinas

- Santiago & district is 6.5M people & industry in 69.8 Km² – Water pollution a serious problem in 1980/90s
- 1998 Water Decontamination Master Plan
- Main objectives
 - Decontaminate environment to improve quality of life
 - Restore 130,000 hectares of contaminate agricultural land
 - Reduce water-borne disease
 - Make economic savings due to improvements in health & environment
 - Improve access to export markets
 - Increase Chile's international competitiveness
 - Create jobs
 - Position Santiago as a world class city for treatment & environment

Collective Action

Collaboration between Public Authorities of Santiago, Chile & Aquas Andinas

Results achieved between 1998 & 2013 (15 years) are spectacular

Sanitation Master Plan Key Figures	1999	2013
WWTP Coverage	3%	100%
Population Coverage	180,000	6,300,000
No. of WWTPs	5	15
Average Flow Rate	0,48 m ³ /sec	16 m ³ /sec
Total Investment (M\$ US)	1,000	

- Since 1990 infant mortality in under 5s has been reduced by 66%
- Social, environmental & economic objectives have been achieved
- Good public governance & regulation played an important role in enabling the private sector to finance and community to benefit

Mapocho River



Treatment Plants

La Farfana WWT



Trebal Mapocho WWT



Biosolids Treatment Facility



Conclusion

- SDG - Political process with technical support
- Business is actively engaged in the Post-Rio processes and contributes constructively
- Business has a real interest in water quality, pollution management and resource reuse
- Businesses are not waiting, but are leading the way with actions appropriate to their fields
 - As water users
 - As technology providers
 - As technical & operating partners to public authorities



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Questions for Clarification

Panel Discussion

Open Discussion

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