



FREEWAT

Free and Open Source Software Tools for Water Resource Management
EU HORIZON 2020 Project



 **ict4water.eu**

1st FREEWAT USER AND DEVELOPERS INTERNATIONAL WORKSHOP

September 21st 2017

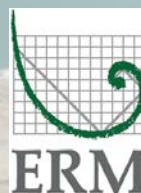
IDAEA. CID - CSIC

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Discussion inputs

EIP Water Online Market Place
Matchmaking for water Innovation

**MAR Solutions - Managed Aquifer
Recharge Strategies and Actions
(AG128)**



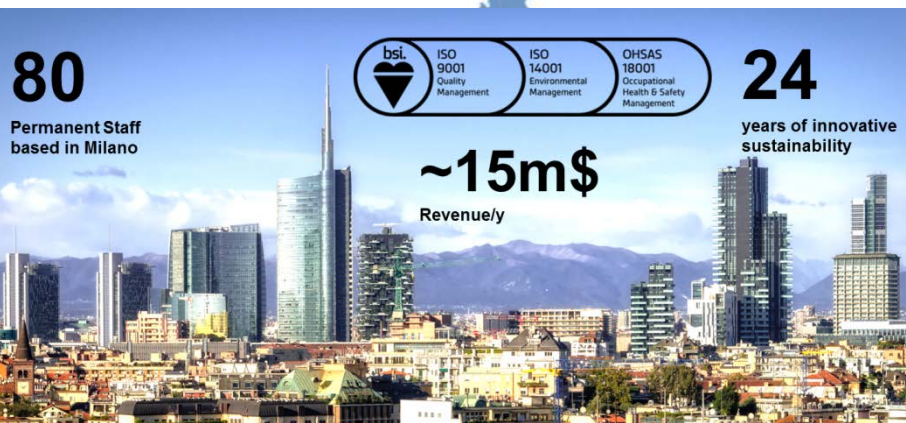
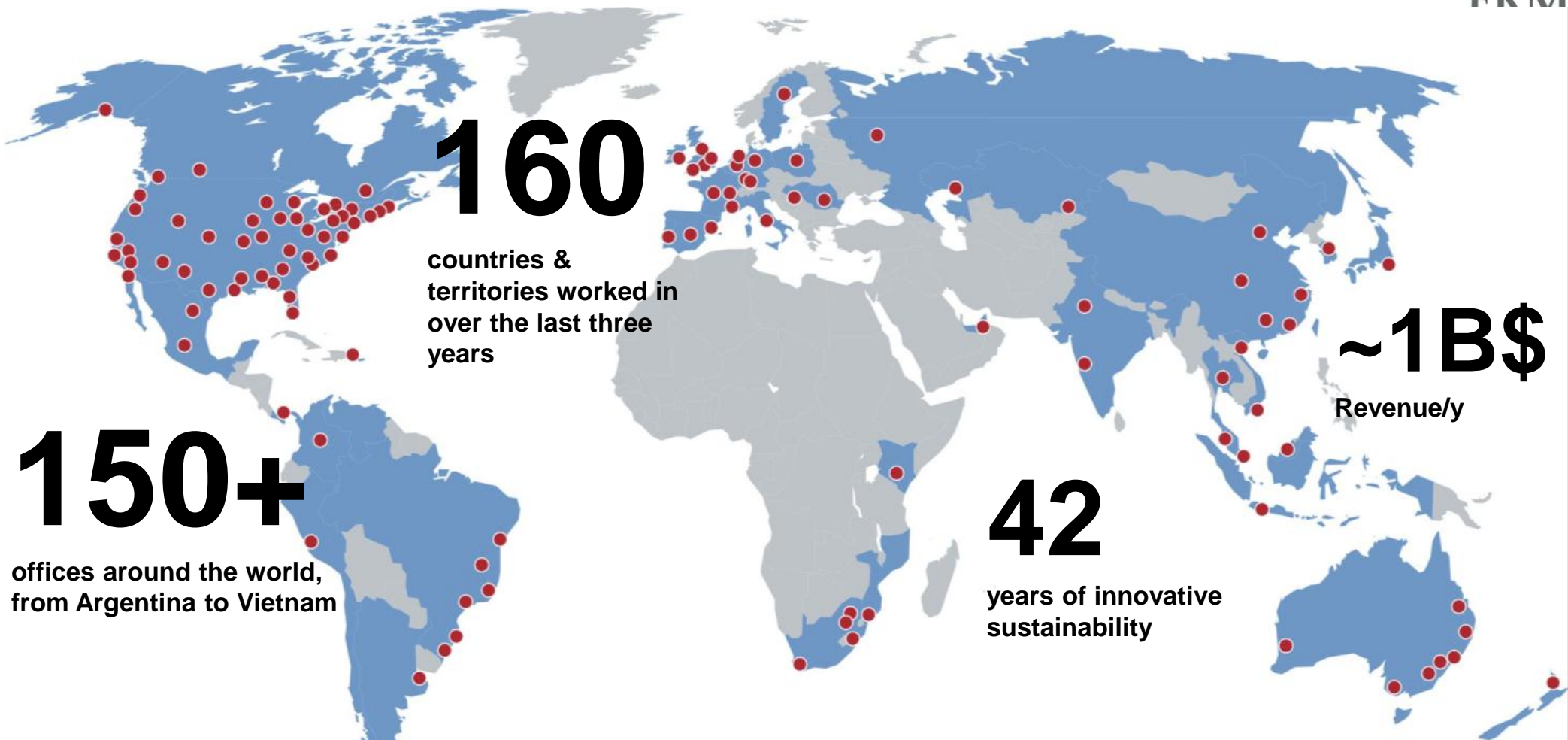
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idæa



CID CELEBRAR
INNOVAR
DEBATRE
CSIC
CENTRE D'INVESTIGACIÓ I DESENVOLUPAMENT 1967-2017

ERM Global Footprint



5,000+

employees across the world

EIP Water Matchmaking Platform
MAR Solutions - Managed Aquifer Recharge Strategies and Actions (AG128)

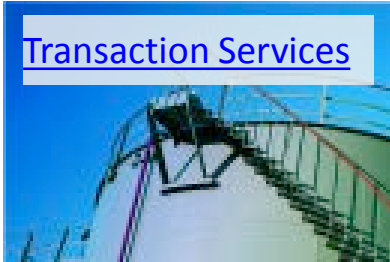
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ERM services



Working together to meet your environmental, Health & Safety, risk and social needs

Transaction Services



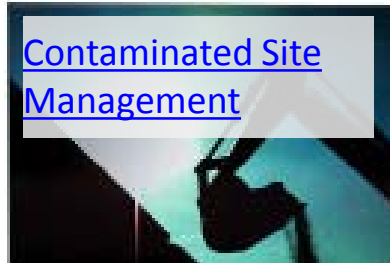
Providing critical, time-sensitive advice on the sustainability risks, liabilities and opportunities associated with investment decisions

Impact Assessment & Planning



Obtaining licenses to operate by managing environmental, social and health impacts.

Contaminated Site Management



Creating strategies and implementing projects to support clients through the life cycle of contaminated site mitigation from initial investigations and risk assessments to remediation

Air Quality & Climate Change



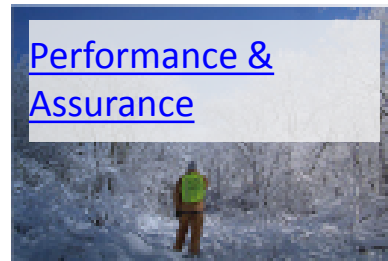
Helping clients to understand and manage the full cycle of effects their operations can have on the atmospheric environment including regulatory support to ensure long term, successful compliance

Risk



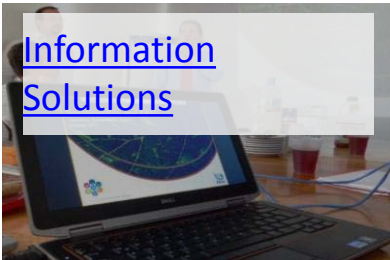
Quantifying and managing the safety risks associated with hazardous installations and processes

Performance & Assurance



Helping corporations reach their environmental, health and safety performance potential

Information Solutions



Providing intelligent and sustainable information solutions that support strategic Environmental, Health and Safety (EH&S) and overall business objectives.

Corporate Sustainability Strategy



Helping address the overarching strategy and tactics for corporate development and HSE performance improvement within an organisation

Private sector pillars

- *Project scalability*
 - *High Value – High Budget project*
 - *Low Value – Low Budget project*
 - *High Value – Low Budget project*
- *Adaptive approach*
- *Integrate solutions (data collection, analysis, outputs)*
- *Communication and reporting needs*
- *Information and results sharing*

Private sector and modelling

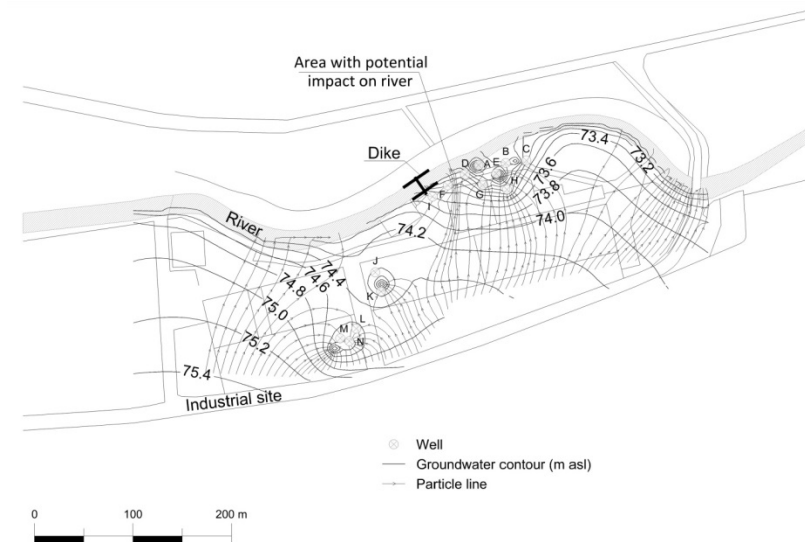
- *Consultants as modellers and clients as audience is changing*
- *More interactions in working group, also with authorities*
- *More expertize in clients staff*
- *Models as real time support for managers (i.e. water supply manag.)*
- *Increasing needs of IT support*
- *Connection between different data source (technical-economical-social)*

Freewat vs commercial codes

Some example of modelling needs

Each project has specific needs

- *Water supply management*
- *Hydraulic barriers design and optimization*
- *Abstraction wells impacts on coastal areas*
- *Support to environmental impact assessment (GW-SW)*
- *Dams or infrastructures impacts on water ecosystem*
- *Dewatering management*
- *Spill impacts*
- *Remediation technologies modelling*
- *Water risks evaluation*
- *Water ecosystem impacts evaluation*



Freewat advantages for private sector



- *Dynamic*
- *Developers and users community*
- *GIS strong connection*
- ...
- ...

Which are the strengths? And weaknesses?

Future developments inputs

- *Coupling with surface water modelling (watershed management)*
- *Multiphase flow simulator (also for remediation technologies)*
- *Thermal modelling (also for remediation technologies)*
- *Oil spill modelling (SW-GW)*
- *Business Intelligence (Power BI, Insights) tools for complex data analysis*
- *Data visualization (3D) and reporting*
- *Users interfaces for non-technical staff*



Thanks for attention