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Partnering for solutions: ICTs and smart water management

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Partnering for solutions: ICTs and smart water management

Main intention of this report is to

- showcase the stakeholders significance in the area of ICTs and smart water management,
- highlight a few global smart water management initiatives and their accomplishments



**Partnering for solutions:
ICTs in Smart Water Management**

“Water: a global perspective on the current issues”



Global water issues



- **Water scarcity and stress**
- **Climate change**
- **Rising global population**
- **Improper water governance & management**
- **Aging of infrastructures**
- **Lack of investment**

Smart water management (SWM): the key

SWM seeks to promote the sustainable coordinated development and management of water resources through the integration of ICT products, tools and solutions such as:

- Sensors, smart meters, smart pipes
- GIS
- Cloud computing
- SCADA
- Web based communications etc.



Source: ChameleonsEye / Shutterstock.com

Smart water management (SWM)



Smart Combined Sewer Overflows: Efficient optimisation is achieved through intelligent management systems.

Source: greatlakes.org



Smart Irrigation and Agriculture: Commercial uses of water can be optimised to ensure sustainable use.

Source: agreenstarlandscape.com



Smart Ultrapure Water: A series of sensors can ensure high water quality and monitor conditions in the system.

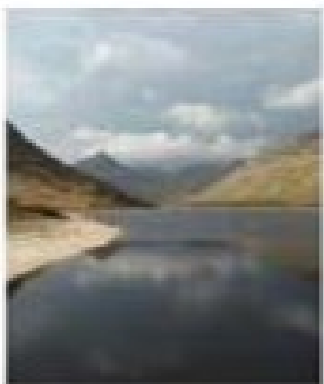
Source: organo.co.jp



Smart Wastewater Management: Wastewater can be managed to monitor quality and levels.



Source: usa.siemens.com



Smart Water Supply Management: Water resources and environment can be managed to ensure sufficient supplies and quality.

Source: treehugger.com

Smart Water Distribution Management: Water in utility grids can be monitored to optimise distribution and asset management.



Source: precisionmeters.co.za

Source: Google Images

Key stakeholders involved in ICTs and SWM

“A stakeholder in this report is defined as any individual, group, or institution that has a vested interest in smart water management by being potentially directly or indirectly affected by its projects, activities, policies, and/or has the ability to influence SWM’s outcomes.”



Key stakeholders involved in ICTs and SWM

Stakeholders identified fall into three main categories; those that:

- Influence relevant decision making
- Have a direct Impact on “ICTs and SWM”
- Have an indirect Impact on “ICTs and SWM”



A close-up photograph of a vibrant green leaf with several clear water droplets on its surface. One droplet is captured mid-fall, creating a splash in a pool of clear blue water below. The background is a soft, out-of-focus bokeh of green and yellow light, suggesting a natural, sunlit environment.

Highlights of ICTs in smart water management initiatives

Sarvajal on a mission to bring “water for all” in India

- Sarvajal, a for-profit social enterprise, is on a mission to make pure drinking water accessible and affordable in India.
- Solution: Soochaks (small water treatment plants) and water ATMS which integrate sensors and cloud-based remote monitoring systems.
- Provision of real-time intelligence and water quality management; allowing customers to buy cheap safe clean water.



Source: Malgorzata Kistryn / Shutterstock.com

Smart hand pumps improves access in Kenya

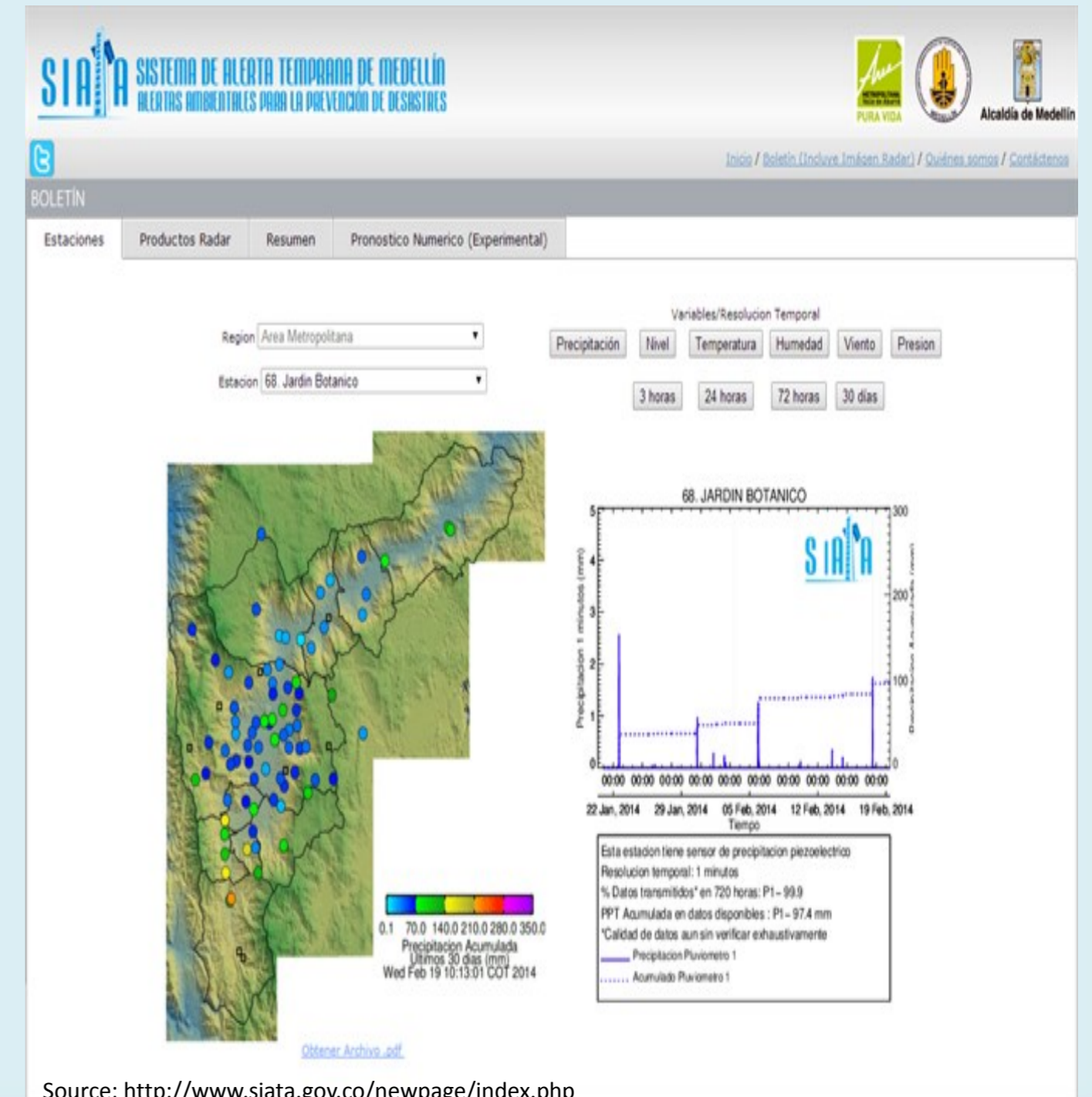
- Millions of people across rural Africa are dependent on hand pumps for their water supplies however many of these pumps broken or non-functional in remote areas.
- Solution: Water-point data transmitter installed in hand pumps provides real-time monitoring and estimates water flow, and usage.
- The pilot project in Kyuso District of Kenya, aims to establish a broad case for smart water systems in developing countries.



Source:
http://r4d.dfid.gov.uk/pdf/outputs/water/SmartWaterSystems_ProgressReport_Nov2012.pdf

The Aburrá Valley Natural Hazard Early Warning System- SIATA

- High slopes in the Aburrá Valley make the area highly prone to landslides and storm water erosion.
- Solution: SIATA, with a main objective to alert the community in timely manner on the probability of occurrence of extreme hydro-meteorological events.
- The system incorporates sensors, radar, GPRS and a web platform.



The WISE-RTD Water Knowledge Portal

- Appropriate decisions cannot be made in the absence of proper information.
- Solution: The EU launched a WISE-RTD Water Knowledge Portal to guide specific user groups to find relevant information related to water research, technology and development.
- Allows quick and easy retrieval of policy, science and technology related informations

Water Knowledge Portal

home How it works eLearning My WISE-RTD News & Events About WISE-RTD

Welcome to the WISE-RTD eLearning experience!

Home » eLearning

Explore the WISE-RTD water knowledge portal in an interactive and entertaining way. Resolve important water issues with the help of your advisors by combining policy, science and industry perspectives.

Dealing with Floods
Beginners level

Preventing Future Floods
Intermediate level

Reduce Nitrate Impact
Advanced level

The village of Hitzacker is threatened by flood. Resolve the crisis with the help of your advisors.

Use your WISE-RTD searching skills to assess flood risks for preventing future floods. Your advisors will guide you when needed.

As a WISE-RTD expert, combine different water directives and research results to help minimize water contamination due to nitrates.

Get started Get started Get started

Source: <http://www.wise-rtd.info/en/bleu-page/welcome-wise-rtd-elearning-experience>

Opportunities

ICT use in smart water management has a wide application and a clear set of benefits, such as:

- Real time monitoring and improve water access
- Reduce consumption and non-revenue water
- Save energy and reduce operational costs
- Integration into smart sustainable cities (SSC)
- Environmental flow integration
- Greater public involvement



Challenges

Current challenges to implementation of SWM in countries include a lack of:

- Standardization
- Policies
- ICT governance
- Incentives/funding
- Awareness



ITU-T Focus Group on Smart Water Management (FG-SWM)

- Established in June 2013, FG SWM acts as an open platform for smart water management stakeholders
- 3th meeting to be held in Kampala, Uganda on 27 June 2014



Join FG SWM!!

Contributions are needed!

FG SWM management team

Chairman: Ramy Ahmed Fathy, NTRA, Egypt

- Helen Nakiguli, UCC, Uganda
- Jorge Grandi, UNESCO
- Ick Hwan Ko, Korea
- Robert Hope, Oxford University
- Michael E. Sullivan, IBM
- Khaled M. AbuZeid, CEDARE
- Sang Ziqin, Fiberhome Technologies Group
- Waleed K. AlZubari, Arabian Gulf University



FG-SWM mandate

- Collect and document water related information
- Specify roles of ICTs in smart water management
- Develop a list mapping key stakeholders involved ICT and SWM
- Develop methods to estimate impact of ICTs on water conservation
- Identify water-management ICT applications and services
- Draft technical reports



“Partnering for solutions in SWM will ensure smarter more sustainable Water for all!”

- SMW is a viable option for sustainable water management in the face of water scarcity and climate change.
- Without stakeholder buy in and proper collaboration by the relevant sectors proper implementation will be unattainable.



Thank you!

ITU-T, Environment and Climate Change

<http://itu.int/ITU-T/climatechange>

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