



EPAL

Empresa Portuguesa das Águas Livres, PORTUGAL

EPAL's Experience in preparing for Emergency Situations

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W-SMART 2011 INTERNATIONAL WORKSHOP
Netherlands, May, 12



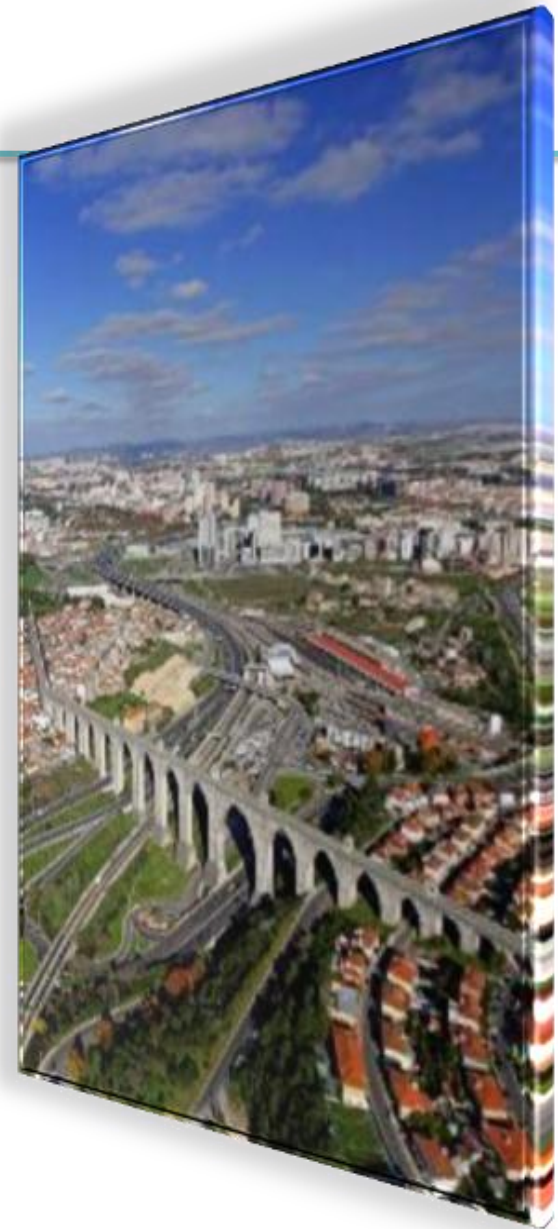
EPAL



ASSOCIATION OF
METROPOLITAN
WATER AGENCIES

PROGRAM

- ➔ 1. EPAL OVERVIEW
- ➔ 2. CRISIS MANAGEMENT CAPABILITY
 - ➔ 2.1 WATER SAFETY PLAN
 - ➔ 2.2 W-SMART PROJECT
 - ➔ 2.3 FUTURE IMPROVEMENTS

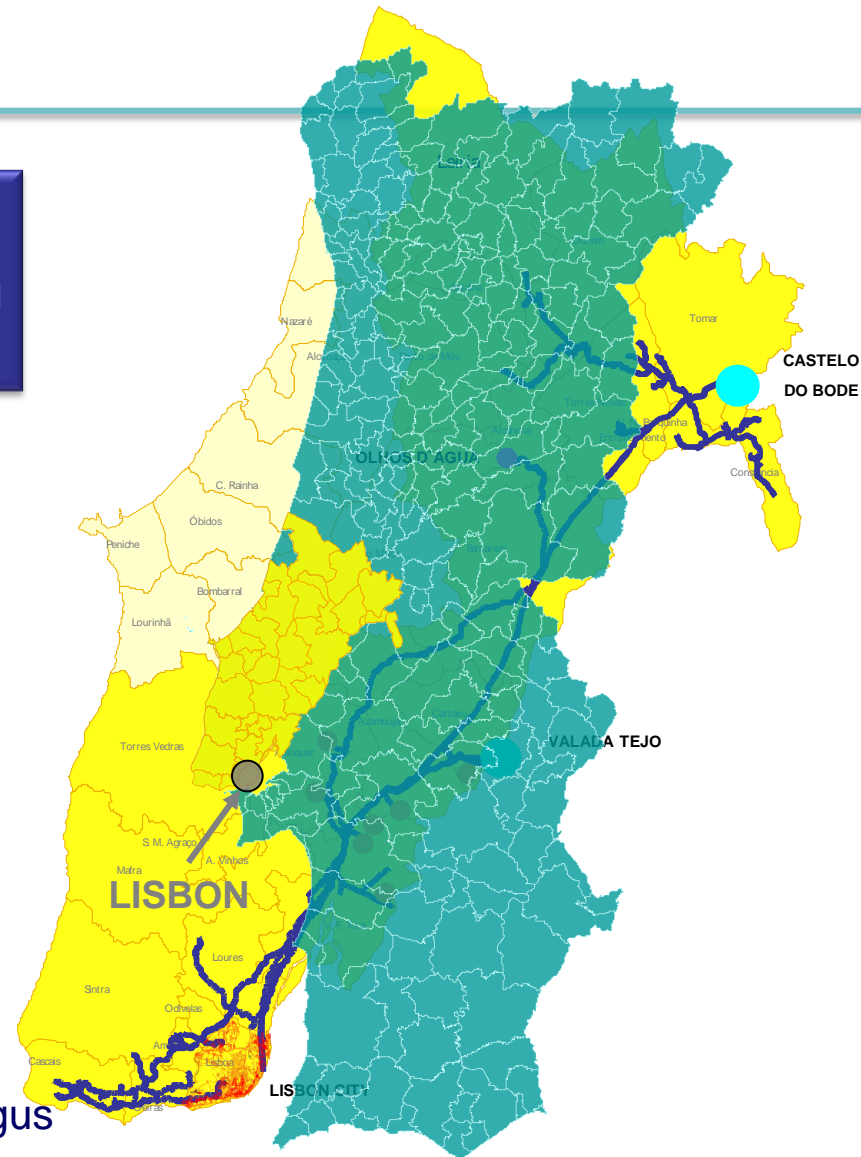


1. EPAL OVERVIEW

EPAL's Mission

Ensuring continuous supply of safe drinking water during routine and crisis events

- **143-year-old Company**
- **Largest water supplier in Portugal**
- **Water Supplied (10^6 m^3) 213,8**
- **Total Revenues (10^6 EUR) 164,1**
- **Profit After Tax (10^6 EUR) 45,9**
- Treatment and supply of drinking water to approximately **2,8 million people**
520,000 inhabitants of the city of Lisbon
35 Municipalities to the north of the River Tagus



1. EPAL OVERVIEW

EPAL's Vision

- To be a Reference Company in the Water Sector in Portugal
- Guided by International Best Practices

Stakeholders

- Public Authorities
- Universities and Investigation Centers
- Associations and NGOs
- Media
- Municipalities
- Clients
- Suppliers
- Workers
- Community



NETWORK

as a source of Knowledge

Challenges

- Sustainability and Efficiency
- Protection of Critical Infra-structures
- Emergency Procedures, Training and Exercises
- Stakeholders Expectations
- Climate Changes Impacts ...

1. EPAL OVERVIEW

International Projects - I&D

- Project TECHNEAU “Technology Enabled Universal Access to Safe Water”
- Project Cost Benefit Analysis (CBA) of Flushing - Lisbon Case Study - COST ACTION 637 – METEAU “Metals and Related Substances in Drinking Water”
- Project SAFEWATER “Development and Validation of Integrated Process for Treatment of Drinking Water in Portugal and Norway”
- Project “Fungi Watch - Benefits and Hurdles Associated with the Presence of Fungi in Drinking Water Sources”
- Project PREPARED “Enabling Change”

National Projects - I&D

- Project “Adapta Clima” - Climate Change
- Project “Nascentes para a Vida” - Biodiversity
- Pedagogical Service “Águas Livres” - Environmental Education

2. CRISIS MANAGEMENT CAPABILITY

Since 2009, EPAL, with W-SMART's support have been developing a **Crisis Management Culture** for upgrading **emergency and security preparedness** capabilities.

PURPOSE

We had to do something, fast and skip to a higher level that **enabled a more effective response**.

Share and learn from the experience of other Water Utilities **facing the challenges of natural disaster response and recovery**.

Best practice assessment of integrating technology solutions in crisis management, **and the role of international support**.

HOW TO ACHIEVE

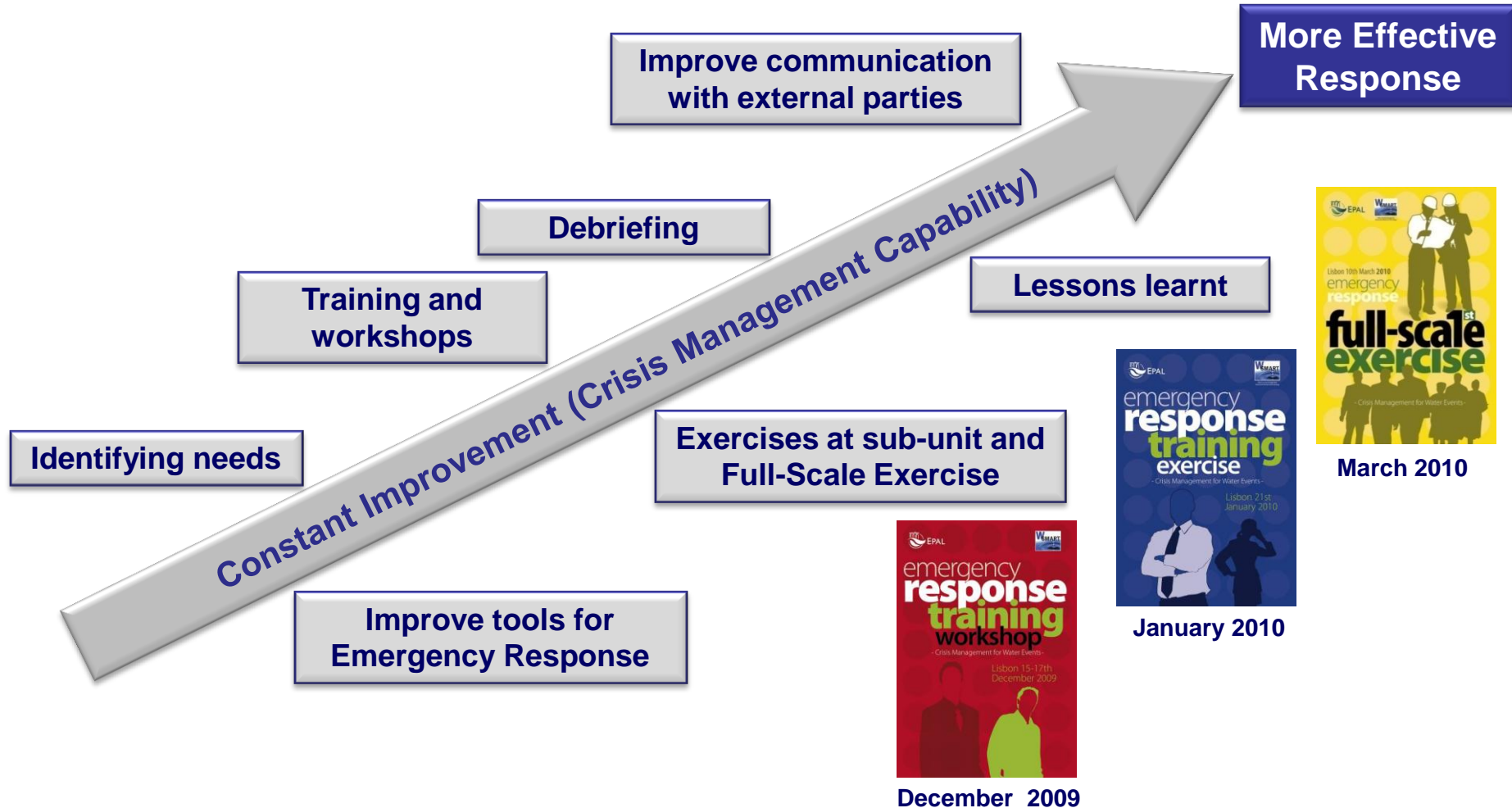
Changing the corporate culture by improving inter-departmental communication **and real time information sharing**.

Minimize effects - Managing and operating correctly **during emergency situations**.

Development / Improvement – Procedures, Guidelines, Emergency and Contingency Plans.

2. CRISIS MANAGEMENT CAPABILITY

HOW EPAL HAS BEEN MAKING



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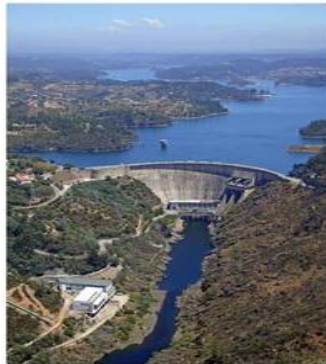


EPAL



2. CRISIS MANAGEMENT CAPABILITY

2.1 WATER SAFETY PLAN APPROACH



SOURCES



TREATMENT



DISTRIBUTION



CLIENTS

From the Water Sources to the Consumer's tap

- Provide a systematic approach for **improving and maintaining drinking-water safety**
- **Risk evaluation and assessment** from the Sources to Consumer's tap
- Provide water in **Quantity** with **Quality**

2. CRISIS MANAGEMENT CAPABILITY

RISK ASSESSMENT

- Undertake a **hazard identification** and **risk prioritization**
 - ✓ Assess the hazardous events at each step in the process;
 - ✓ Determine whether they are under control;
 - ✓ To document whether those events need urgent attention.

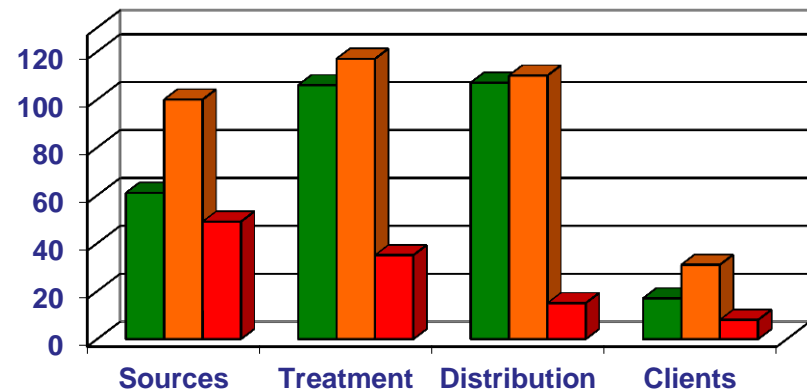
- **Identify Risk Scoring** of each step in the process

Risk Scoring = Likelihood x Consequence (Public Health/Quantity)

117 high level risks (red)

- Identify additional control measure and **improvements required**:
 - ✓ Define **monitoring Control Measures**
 - ✓ Define **Corrective Actions**

Risk Assessment
Risks Identified = 731



2. CRISIS MANAGEMENT CAPABILITY

IMPROVEMENT REQUIRED

Types of Hazardous Event

➤ Natural Disasters

Floods, Droughts, Earthquake...

➤ Human Actions

Acts of vandalism or sabotage...

➤ Serious Incidents

Power Failure, Failure of Automatic Control of Site, Loss of pumping capacity, Burst Pipe, Infiltration in Pipes, Loss of Site...

➤ Inadequate Treatment of Water

Incorrect doses of Chlorine, Lime water, Carbon Dioxide, Aluminium sulphate, Polyelectrolyte...

➤ Contamination of the Sources

Wastewater discharge, use of Fertilizers or Pesticides, Farming and Cattle, Accidental discharges...

Control Measures & Corrective Actions

- ✓ Studies and Projects
- ✓ Revision and elaboration of Procedures, Work Instructions and Activity Manuals
- ✓ Elaboration of Operational Plans and Maintenance Plans
- ✓ **Elaboration of Security, Emergency and Contingency Plans**
- ✓ Works for Improvement the Supply System
- ✓ Optimization of Conditions for the Operating System
- ✓ Improve **Communication with Stakeholders**

2. CRISIS MANAGEMENT CAPABILITY

2.2 W-SMART PROJECT

HOW W-SMART HELP US ON OUR IMPROVEMENT

- ✓ **Offering best practice** of water crisis management based on the accumulative and diversified experience of W-SMART.
- ✓ **Commitment of W-SMART to experience sharing** with its members to upgrade their Security Management capabilities of water supply.
- ✓ Water Companies can help each other in **improving their Crisis Management Capacity**.
- ✓ **Oversight Committee Assessment** of Guidelines, Training and Exercises.
- ✓ **On-site participation during exercises as Observers**, offering their peer-to-peer assessment and recommendations.



2. CRISIS MANAGEMENT CAPABILITY

2.3 FUTURE IMPROVEMENTS

- ✓ **Implementing simple and workable procedures.**
- ✓ **Preparing a decision support system** for determining which information provides the appropriate **data for event detection and control under Emergency Situations.**
- ✓ **Optimization of the Internal and External Communication and Reporting.**
- ✓ **Creating strong Cooperation and Coordination with Stakeholders** (e.g. Civil Protection, Health Authorities, Municipalities...).
- ✓ **Realization of debriefings after the practices of the exercises as a way to identify the actual state of art and actions that must be done.**



2. CRISIS MANAGEMENT CAPABILITY

ACTIONS 2011

Stabilizing Crisis Management Approach at EPAL in order to guarantee the Business Continuity

1. Guidelines - Updating the Emergency Guidelines

- ✓ Based on feedback given from the Units and **lessons learnt**;
- ✓ **Extend to large scale Events**;
- ✓ **Involvement of Government Agencies** and External Organizations.

2. Training - “Training the Trainers ” Workshop

At the levels of both the Corporation and its sub Units – water treatment plants, water quality, water supply, security units...

3. Exercises - Sub-Unit Exercise - Involvement of External Parties (Municipalities, Civil Protection, Local Police).

- **Full-scale Exercise** – Involvement of External Parties (Guidelines for Interagency Communication)

Thank you for your attention



LISBON

A City to Visit. A City of Contrasts.



**Under the leadership of EPAL
Lisbon will be the host for the**

*9th
World Water
Congress & Exhibition*

In September 2014

Finding Solutions to Assure the Future

