

2nd IWA Leading-Edge Conference & Exhibition on **Strategic Asset Management**

Infrastructure Strategic Management In Contingency Situations

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LESAM 2007 – Lisbon 17-19 October 2007

Introduction

- During the hydrological year 2004/2005 a serious drought occurred in Portugal and led to the preparation of a Contingency Plan in the Algarve;
- In 2005, an Action Plan was created establishing measures and investments aimed at the reinforcement of Algarve's water supply system;

Introduction

- The Plan involved various actors – Águas do Algarve, S.A., Águas de Portugal, SGPS, Regional Coordination and Development Commission, Municipalities, National Water Institute and other users such as the region's agriculture associations;
- The Plan ensured a greater flexibility and reliability of the system to meet contingency scenarios (e.g.: droughts, variation on water quality, serious leakages).



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Águas do Algarve bulk water supply system

- provides potable water to 16 municipalities
- population per municipality ranges from 3 770 to 59 160 inhabitants
- total inhabitants – more than 1 million in high season

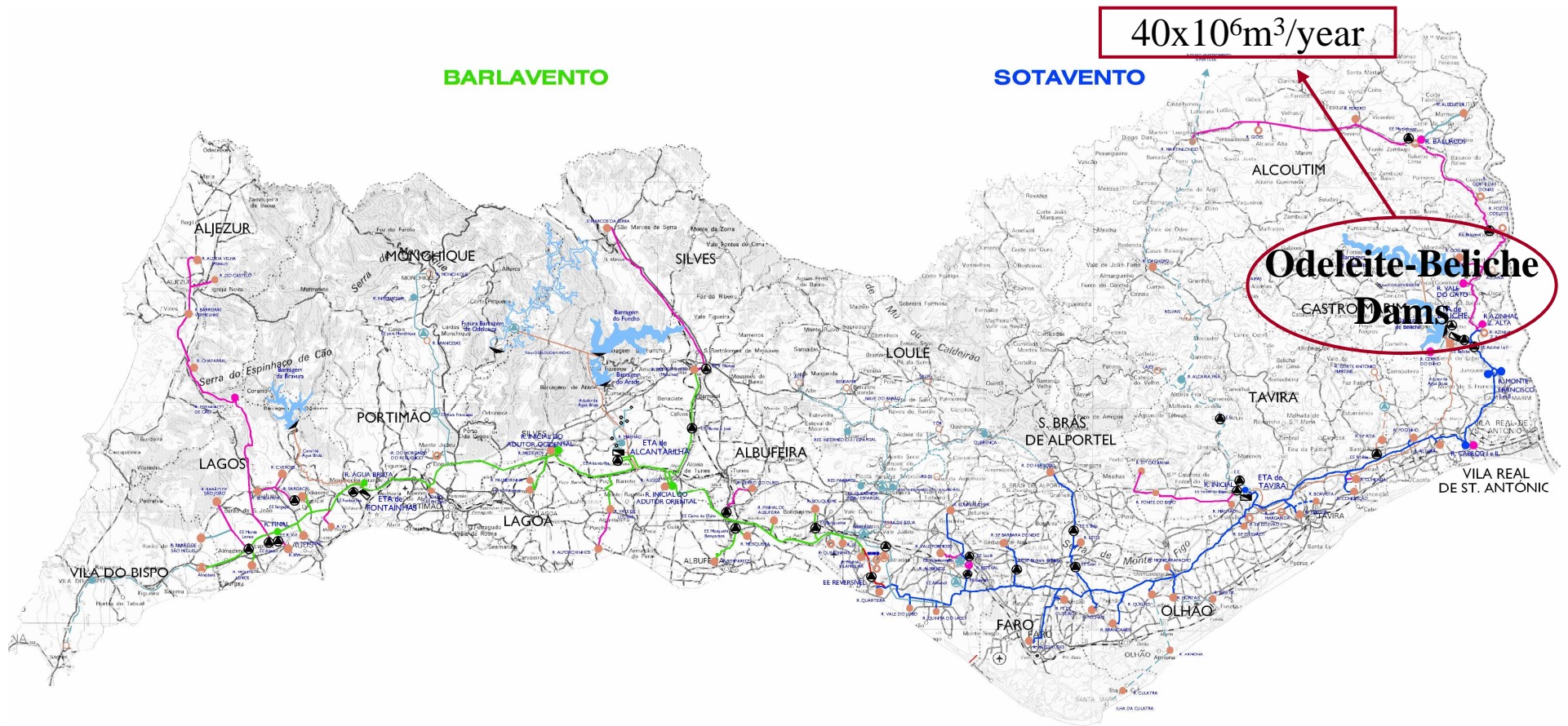


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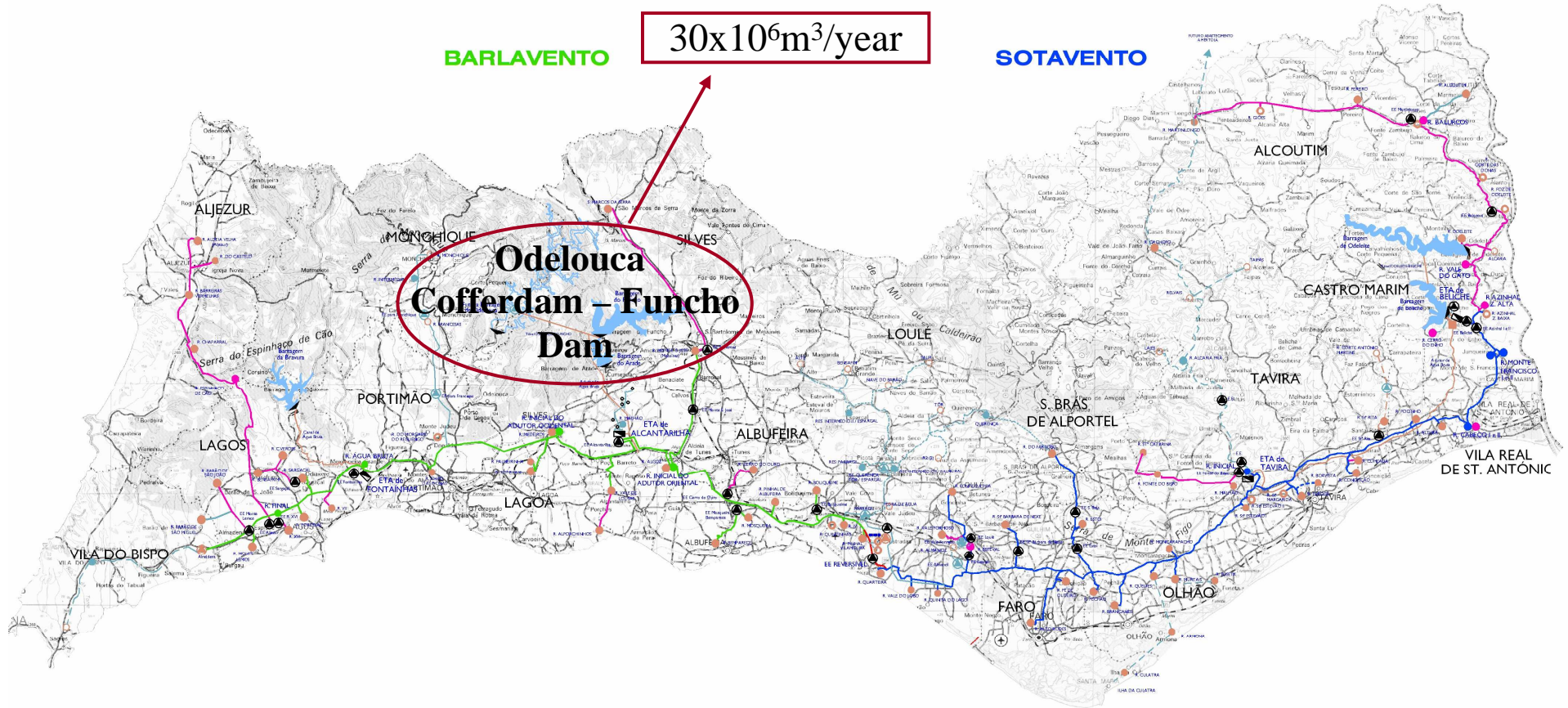
RAW WATER AVAILABILITY



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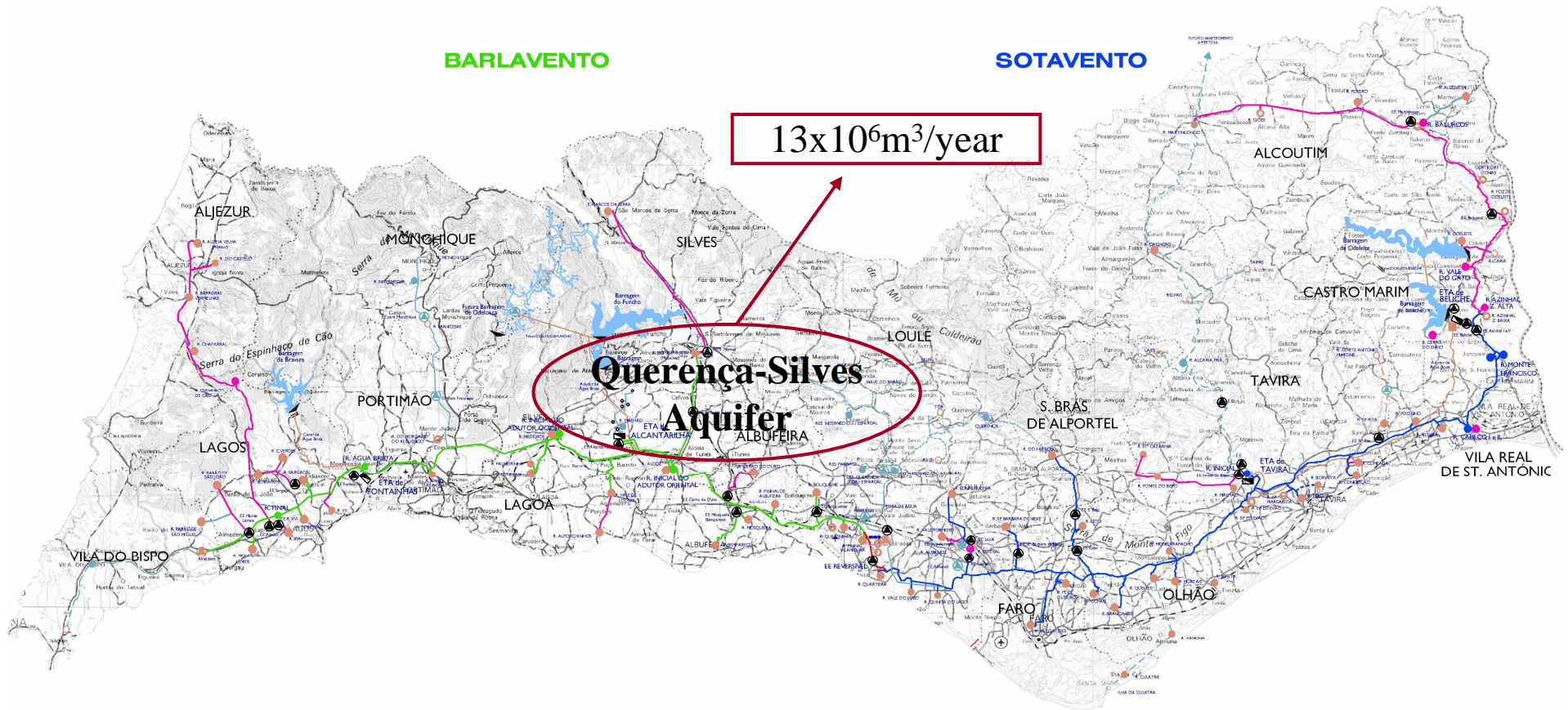
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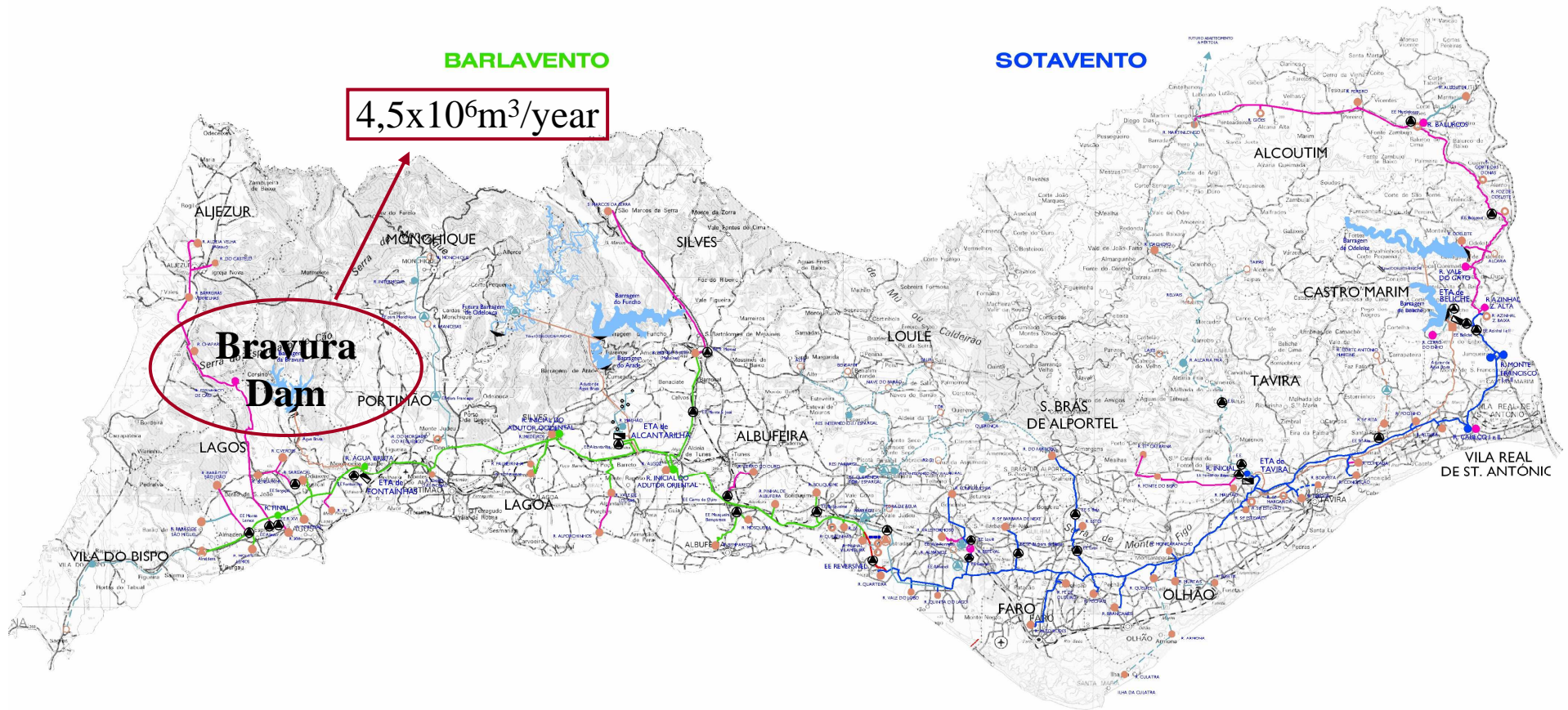
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RAW WATER AVAILABILITY



2004-2005 Drought



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2004-2005 Drought



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Action Plan Measures

Immediate measures:

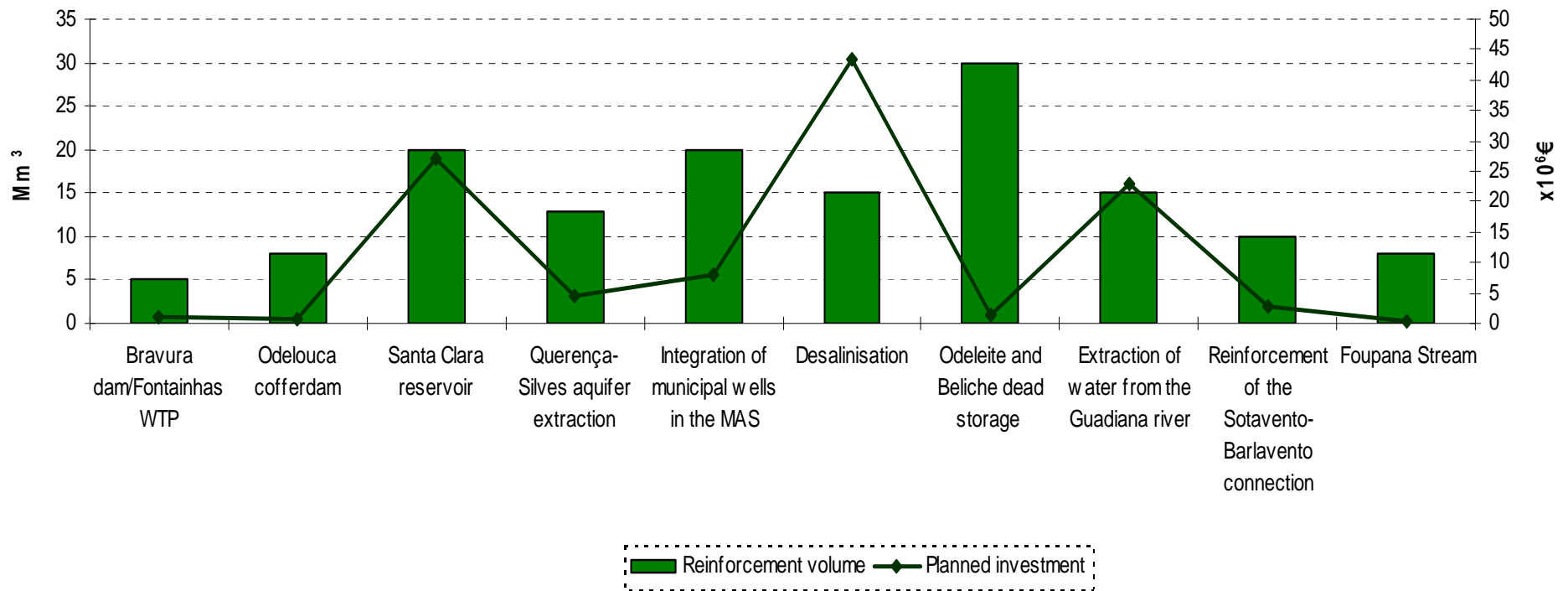
- Rationing of water in several uses which are possible to reduce;
- Interaction with consumers for the communication of leakages and obvious water losses;
- Reactivation of existing municipal wells;
- Implementation of tough inspection in order to check compliance with the water saving measures;
- Awareness-creating campaign for the efficient use of water;
- Use of the dead storage of the Funcho dam.

Action Plan Measures

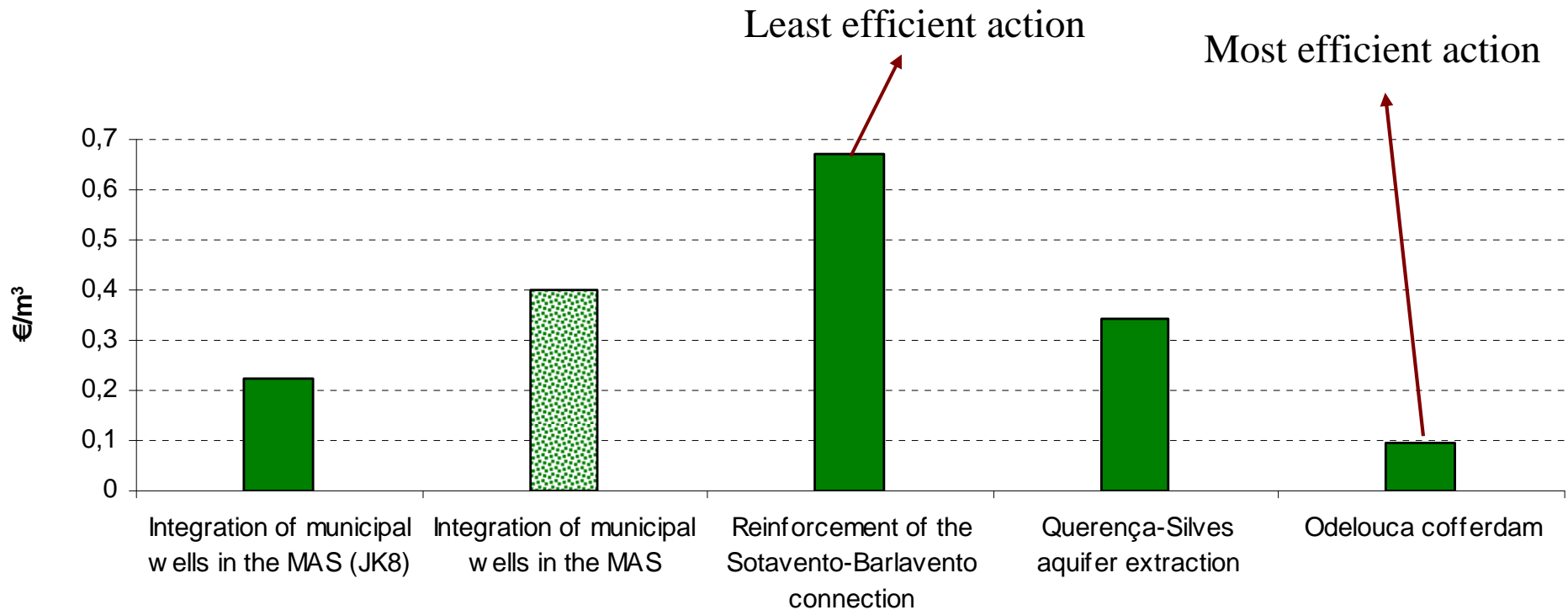
Some of the short term measures:

- Reuse of treated wastewater;
- Use of water stored in the reservoir created by the Odelouca cofferdam;
- Reinforcement of the Sotavento-Barlavento connection;
- Studies of an alternative catchment from the Guadiana river;
- Studies on potential for desalinisation;
- Reduction of distribution network losses;
- Study on the protection of the Querença-Silves aquifer.

Planned Investments vs Volume reinforcement



Investment Cost vs Flow Rate Reinforcement



Conclusive Remarks (1/2)

- Águas do Algarve, S.A. (AdA) developed, and is currently implementing, actions for volume reinforcement of the supply system, especially those involving a lower investment;
- AdA carried out a study on the assessment of the Guadiana river salinity and an environmental impact study on the connection to the Santa Clara dam in addition to preliminary studies on the implantation of Barlavento and Sotavento desalinators;
- All the short/medium term measures developed and currently being implemented by AdA are those presenting lower costs (including environmental), but simultaneously providing lower volume reinforcement;
- The lowest benefit measure – Sotavento/Barlavento connection – enables a greater flexibility of the system and increases its reliability in long term.

Conclusive Remarks (2/2)

Future measures

- Protection of the Querença-Silves aquifer will guarantee a strategic reserve and the preservation of water quality;
- Use of municipal wells and its integration in the bulk system;
- A study in collaboration with LNEC on demand assessment with the prospect of efficient use and eventual reduction of losses.