RegioneEmilia-Romagna

Direzione Generale Ambiente e Difesa del Suolo e della Costa

Presentation of measures implemented at regional level

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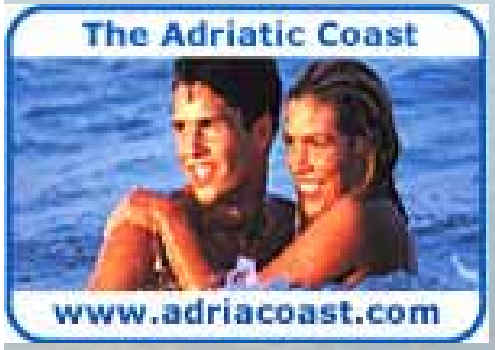
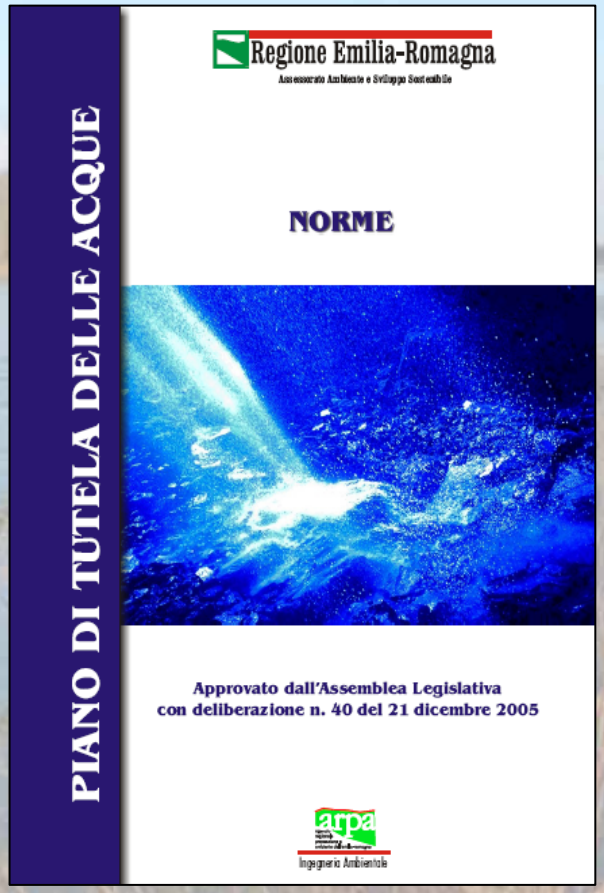
Regione Emilia-Romagna

- 4.223.585 inhab/07;
- 30.000 euro GDP per head (€) ;
- Unemployment rate 3.4%;



Integrated Regional River Basin Management Plan (WFD)

- Regional Council Approval on 2005
- The Plan represents the tool to achieve the qualitative objectives defined by the Italian Law, very close to the European Directives (2000/60/EC)
- through an integrated approach



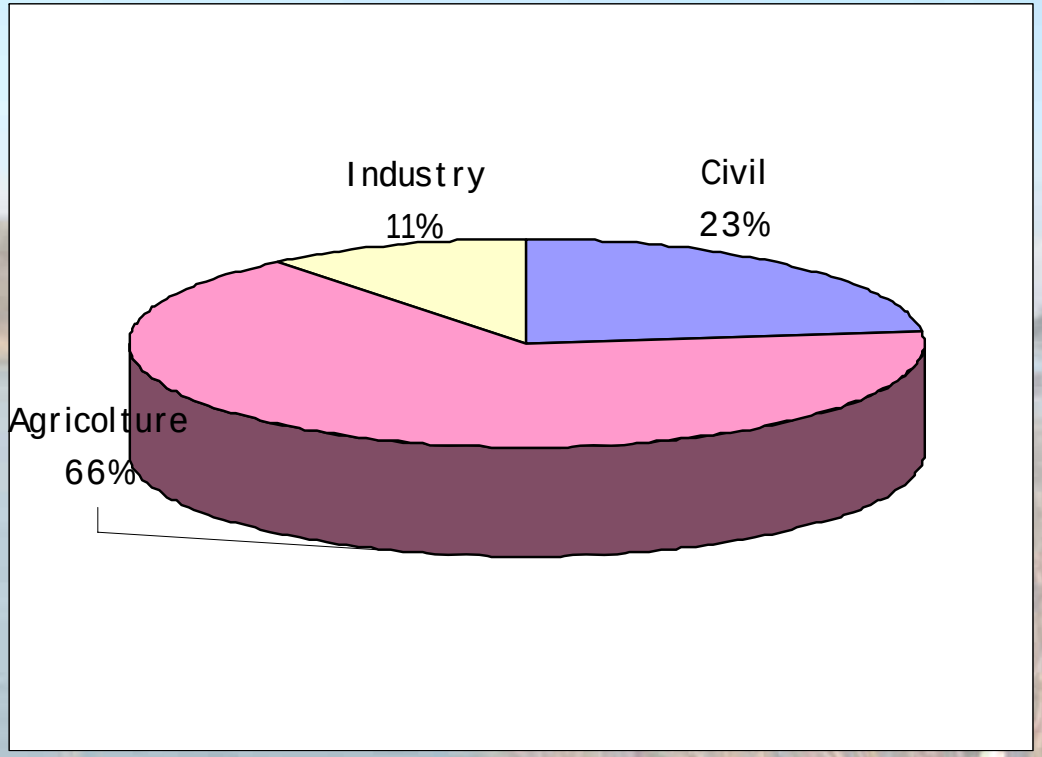
- Quantitative ⟷ Qualitative

The ER strategy
WATER DEMAND MANAGEMENT

- **A drastic review of water use is necessary to meet the objectives on 2015**
- Improving effectiveness and sustainability of existing drinking water, industrial process and irrigation systems: first priority in the option assessment process
  - Conservation, saving, recycling, interconnection, flexibility, optimization…….new infrastructures
- The newly-released strategy reflects the demand for a more balanced approach in which better management of existing resources is complemented by investment in priority water infrastructure (*twin-track*)
- The Water Conservation Programme (WCP) plays a key role
- WCP also includes guidelines for a Drought contingency Program

Emilia-Romagna water withdrawal

- **Agriculture**: 1425 Mm^3/y (66%);
- **Civil**: 487 Mm^3/y (23%);
- **Industry**: 233 Mm^3/y (11%)



Consumption:

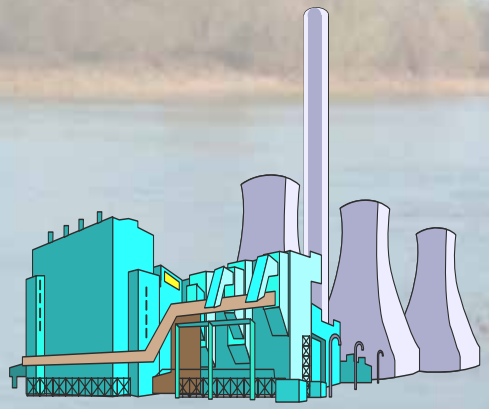
Civil 249 l/p/d **Domestic** 170 l/p/d

Avg Water Losses in drinking distribution systems 26%

Overall water withdrawal: 2125 Mm^3/y

Water consumption trends in 2000

Increase



Decrease

Stable or low>

Within 2015, 10% demographic growth

The regional water stress

Groundwater Deficit(Mm^3/y)

Provinces	Deficit (overdraft)
Piacenza	-3
Parma	-7
Reggio-Emilia	-1
Modena	-2
Bologna (**)	-9
Ferrara	-0
Ravenna	-2
Forlì-Cesena	-0
Rimini	-1
Whole regional territory	-25

The deficit due to the application of the environmental flow is around 45 Mm^3 (apparent and real leakages from civil networks 123 Mm^3)

total water stress

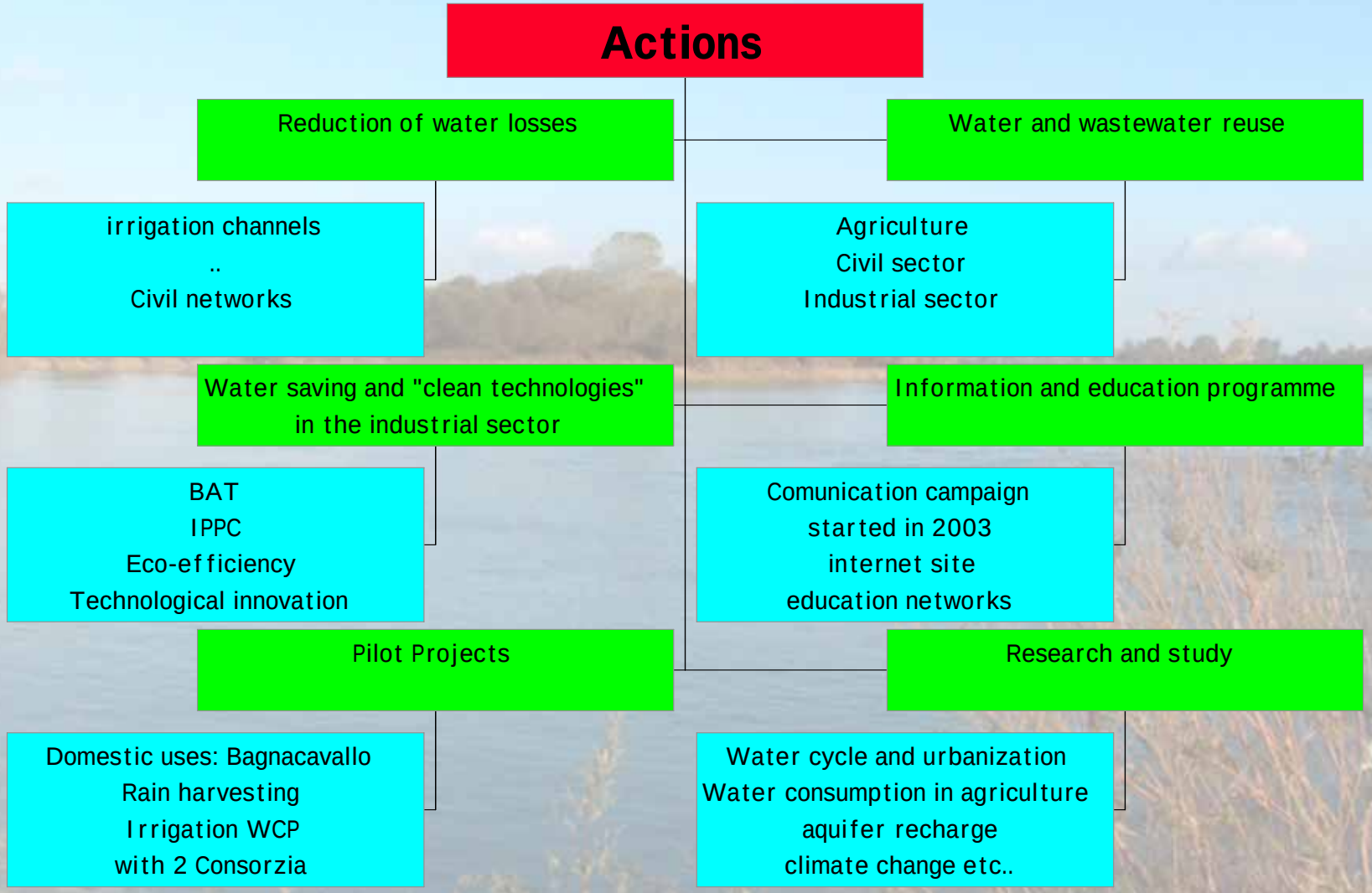
25+45=70 Mmc/y

The Water Conservation Program WCP

The Program is based on different levers:

- Regulatory and Legislative tools
- Economic tools
- Actions

The Water Conservation Program of Emilia-Romagna



Programme of measures for irrigation systems

- Increase of the efficiency of the irrigation distribution systems up to 70-80% in 2016 (actual 60-50%)
- Optimisation of the existing irrigation schemes (interconnection)
- On farm efficient irrigation systems
- Wastewater reuse and recycling (24 large treatment plants) in agreement with civil water companies
- Multi-objectives low impact basins (flood prevention and irrigation, e.g. flood storage basins, mining basins, etc.)

Undergoing actions- Irrigation

- Cooperation with irrigation consortia on WCPs (dual tariff –irrigated area + volume - case studies)
- Subsidies to improve highly efficient irrigation systems
- Irrigation practices supported by web technologies IRRINET
- Dissemination and exploitation of irrigation best practices
- Coordination with CAP measures (Rural Development Programme thematic axes)

In 2006, water saving up to 24% of the overall irrigation demand

IN 2007 IRRINET WATER SAVING ESTIMATED in 50 Mmc/y

Programme of measures – Drinking water saving

- From 170 to 150 within 2016 (12% reduction)
- 249-**219 (12%)**
- Water losses 26%-18%

Measures: Drinking water saving

- Water losses research programs by regulatory agencies (ATO) and implemented by water companies
- Water saving devices (exploiting the Bagnacavallo pilot project)
- Water saving information and education (public campaigns)
- Land Planning and building construction regulation
- Water tariffs that provide adequate incentives (also to the water companies) to use water resources efficiently

BAGNACAVALLO

- 9.370 tap flow reducers e 3.046 for showers to 1.921 families in Bagnacavallo (4.974 inhab.)
- 1 year monitoring campaign from end of 2003 to beginning of 2005
- Comparison of consumptions in a “reference” sample (nearby municipality without reducers)
- Result: **10% water saving**
- **Certified energy savings 45 TOE (from Energy Authority)**
- **In 2006-2007, around 4 million flow reducers have been distributed by WC**

Water saving educational campaigns

- **2004**: First campaign “Acqua, risparmio vitale” (*Water, vital saving*)

- **2008**: New edition “Mezzo pieno o mezzo vuoto?” (*Half full or half empty? Whatever you think save water!*)

What the people do to save water	2002	2005
Use full load dishwasher	**1,4%**	**72,7%**
not to leave the tap running while washing teeth, shaving or washing hands	**11,1%**	**45,5%**
Install water efficient taps or tap aerators	**2,2%**	**38,5%**
Use water saving toilet	**2,8%**	**29%**

Video

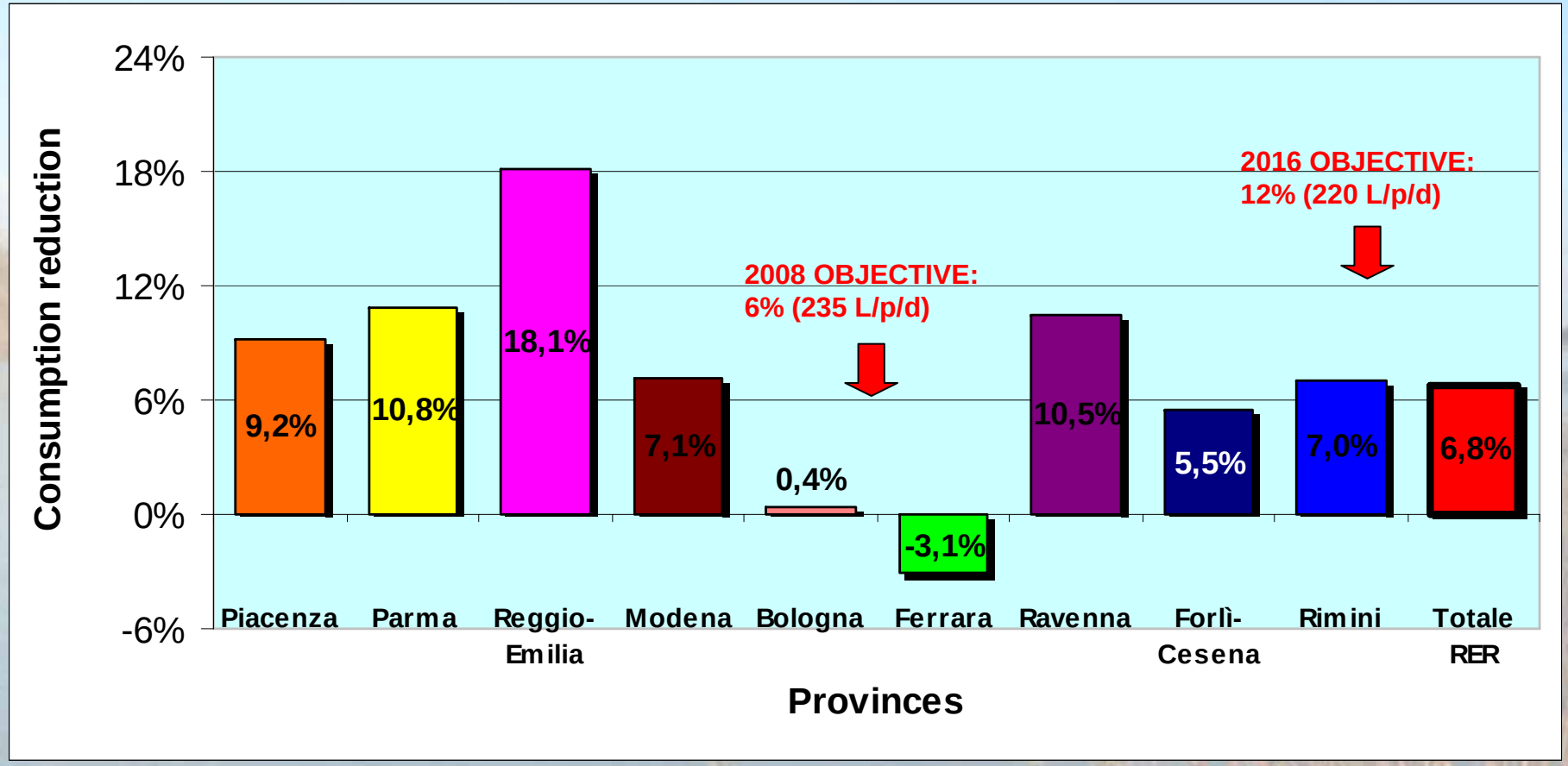
The ER new tariff system

- The actual tariff covers the cost for drinking water, sewerage and treatment (1.3 Euro/m3, based on consumption)
- Growing tariff charge with increasing consumption
- What is needed it’s a tariff working either on demand side and on supply perspectives
- The policy option is to decouple the WC' revenues from the amount of water they sell.
- The new regional tariff gives them an incentive to increase the efficiency of water usage rather than to sell extra water
- Regional Decree N. 49/2007

Quality and saving incentives

- To foster water saving: adding to the normal tariff an Overall Performance Factor (OPF)
- OPF is intended to be an incentive mechanism based on a composite index of performance. The OPF provides an adjustment of the tariff between +0.5% (incentive to the Water Company WC) and –1.0% (as penalty to the WC)
- The key areas are:
  - water and sewerage service (interruptions to supply, sewer incidents)
  - customer service
  - environmental impact (water loss indicators and consumer water saving)
- "Social" tariff for putting the right price on water and to allow private households, irrespective of their available financial resources, to adequate water provision.
- Pro-capita tariff for large families
- First applications, we're looking forward for successful results

Some results (2006)



From 249 L/p/d (2000) to 233 L/p/d (2006)

Conclusions and further perspectives

1. In spite of the clear success of the Water Demand Management (WDM) policy, high pressure for large infrastructures (dams) as response to drought periods (2003, 2006)
2. It is crucial to develop technology, regulation and communication integrated strategies: only in this way, the results can consolidate and remain, we need EC help and support
3. Relevance of Stakeholder involvement – proactive participation
4. We need to extend to all sectors (agriculture), WFD economic analysis
5. Finally, water management - energy relationship needs to be more investigated, since the water sector is one of the higher energy consumer (California: 19% electrical, 32% gas) therefore water saving strategy also means multi-sectoral contribution to tackling climate change and Kyoto Protocol objectives