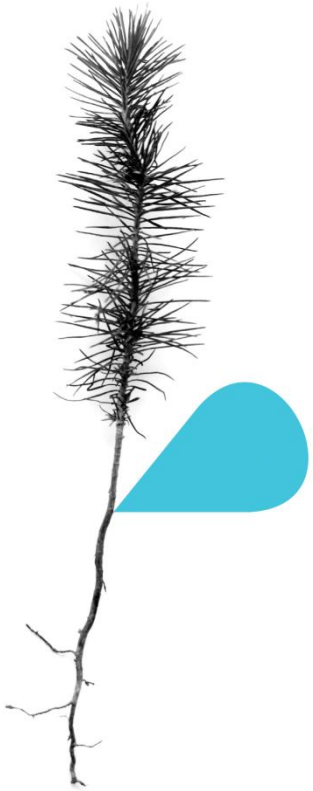
Mayors in Action-Webinar Series

Municipal Integrated Actions involving citizens

Clara Presa Marisa Fernández



ZINNAE

3 March 2016

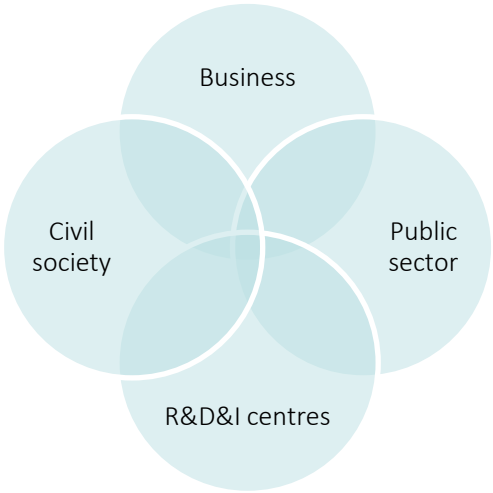
Who we are

ZINNAE
Clúster para el uso eficiente del agua

The **cluster for water efficiency – ZINNAE** involved most of actors in the region that operate in the sector of water management and efficiency.

ZINNAE is comprised of 34 members, of with 60% are business entities, together with dedicated research and higher education institutions, local and supra-regional public authorities as well as other relevant stakeholders around water sector in Aragon region (Spain).

ZINNAE is a cluster following the quadruple helix collaboration approach, with multiple possibilities for multi-disciplinary collaborative projects among its members.



Recognition and trajectory

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- In the register for cluster of the Spanish Industry Ministry since 2010
- We are participating from 2013 on the WE@EU (FP7 32007) project with other five European regions with which we have a Joint Plan to promote innovation in water management
- We are part from 2015 of the European Strategic Cluster Partnership "Energy and water" formed by seven European clusters in five different countries (United Kingdom, Denmark, Netherlands, Spain and France) that bring together SMEs working on water and energy efficiency.
- We are a key agent in Aragon's Smart Specialisation Strategy, which designates the efficiency of water and energy as one of the three strategic lines of work for our regional government.

GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA, ENERGÍA Y TURISMO
SECRETARÍA GENERAL DE INDUSTRIA Y DE LA PEQUEÑA Y MEDIANA EMPRESA
DIRECCIÓN GENERAL DE INDUSTRIA Y DE LA PEQUEÑA Y MEDIANA EMPRESA
AEI minetur agrupaciones empresariales innovadoras
SEVENTH FRAMEWORK PROGRAMME
Supported by the European Union Seventh Framework Programme

What we do?

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Clúster para el uso eficiente del agua

Expertise areas

1. Smart water management: monitoring systems and ICT applications
2. Solutions for efficient use of water from buildings and dwellings and urban green areas
3. Solutions for efficient management of water and energy associated in industry
4. Solutions for efficient management of water and energy associated in agriculture

- We promote innovation projects
- We promote cooperative business between members
- We organize events to promote networking and visibility

Objectives for today

Presentation of Zaragoza initiatives to save water and energy.

- Water conservation programme

  1. Modernisation plan of the infrastructures related to water management
  2. Byelaw implementation in relation to efficiency in water usage and tariff system
  3. Awareness raising campaign: Zaragoza, water saving city

- ZINNAE projects: Zaragoza living lab.

  1. Smart monitoring project o combined sewer overflows
  2. Test bench for water-saving products

- Other ZINNAE project: Sustainable management of Integral Water Cycle in low-technified urban areas

Some figures

Zaragoza, with a water consumption of 82.6 hm3 in 1994, **fixed an objective for 2010 of 65 hm3/year**, a goal that was reached in 2006.

Year	Hm^3/year	L/hab/day
1979	106,39	507
1990	87,12	396
2001	79,69	344
2005	68,19	277
2009	59,90	228
2014	58,81	218

Source: Zaragoza City Council, Infraestructure Department

Some figures

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Reduction of invoiced household water consumption

Year	Hm^3/year	L/hab/day
2001	30,15	133
2003	30,23	129
2005	29,86	124
2007	28,58	115
2009	26,77	105
2011	25,68	100
2014	24,92	97

Source: Zaragoza City Council, Infraestructure Department

Quality improvement and water management plan (2002-2010)

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Objectives of the Plan:

- Achieving a high rate of renewal of facilities and outdated networks and in poor condition.
- Greater control over the flow rate supplied.
- More uniformity in chlorine level.
- Reduction of the consumption of water from the city to 65 hm^3/year

Approved in March 2002.

Investment € 104 M.

Source: Zaragoza City Council, Infraestructure Department

Quality improvement and water management plan (2002-2010)

Main actions.

1.- Facilities.

- Reinforcement of chlorination stations.
- Improvement of the use of active carbon filtration.
- Coverage and adequacy of deposits.
- New pumping.
- Recovery water consumed in drinking water.

2. - Distribution network.

- 192 km renewed
- 3 Km rehabilitated

Source: Zaragoza City Council,
Infraestructure Department

Photovoltaic plant in cover of water deposits

Bylaw implementation in relation to efficiency in water usage and tariff system

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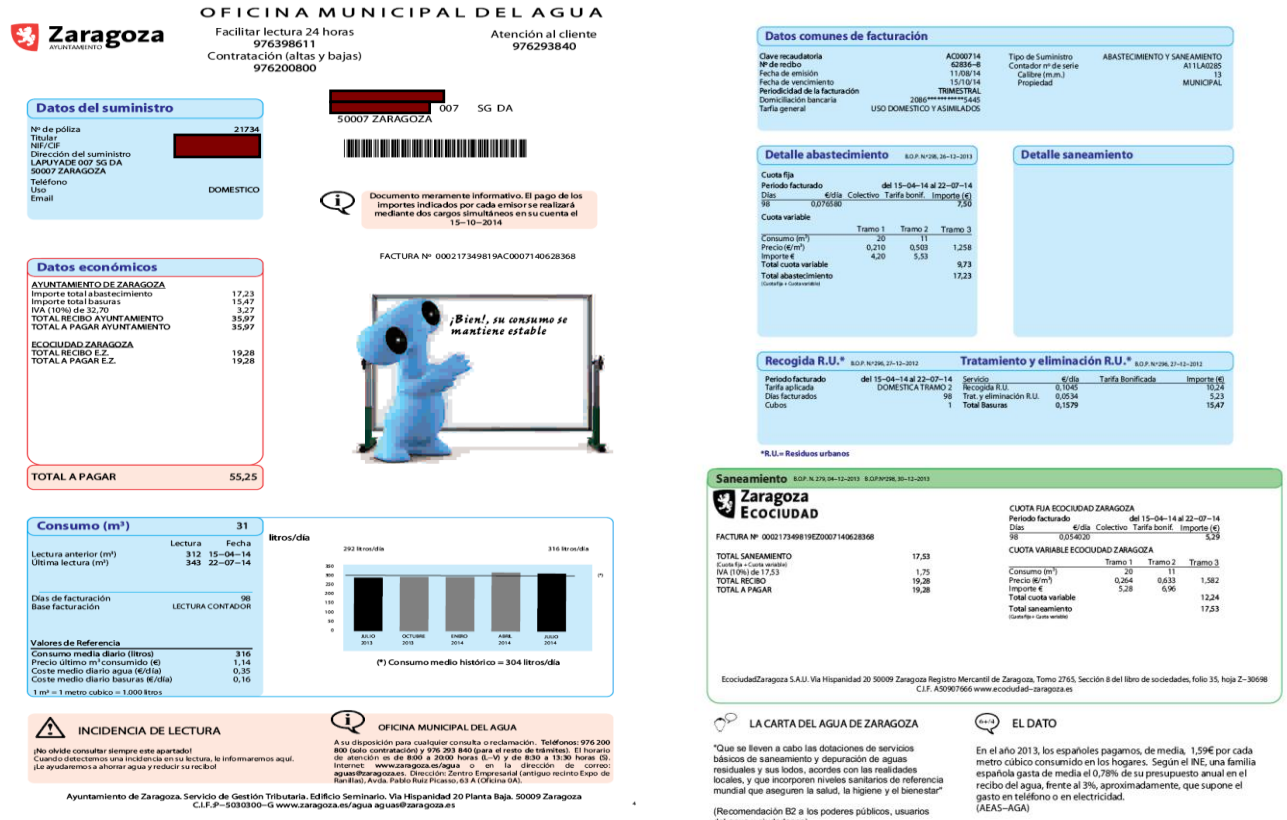
Efficient use of water through water saving devices and a progressive billing.



OFICINA MUNICIPAL DEL AGUA

Zaragoza
AYUNTAMIENTO

Facilitar lectura 24 horas
976398611
Contratación (altas y bajas)
976200800

Atención al cliente
976293840

Datos del suministro

Nº de póliza	21734
Titular	[redacted]
NIF/CIF	
Dirección del suministro	
LAPUYADE 007 SG DA	
50007 ZARAGOZA	
Teléfono	
Uso	DOMESTICO
Email	

[redacted] 007 SG DA
50007 ZARAGOZA

Documento meramente informativo. El pago de los importes indicados por cada emisor se realizará mediante dos cargos simultáneos en su cuenta el 15–10–2014

FACTURA Nº 00021734981 9AC0007140628368

Datos económicos

AYUNTAMIENTO DE ZARAGOZA	
Importe total abastecimiento	17,23
Importe total basuras	15,47
IVA (10%) de 32,70	3,27
TOTAL RECIBO AYUNTAMIENTO	35,97
TOTAL A PAGAR AYUNTAMIENTO	35,97
ECOCIUDAD ZARAGOZA	
TOTAL RECIBO E.Z.	19,28
TOTAL A PAGAR E.Z.	19,28

TOTAL A PAGAR 55,25

Consumo (m³) 31

	Lectura	Fecha
Lectura anterior (m³)	312	15–04–14
Última lectura (m³)	343	22–07–14
Días de facturación	98	
Base facturación	LECTURA CONTADOR	

Valores de Referencia

Consumo media diario (litros)	316
Precio último m³ consumido (€)	1,14
Coste medio diario agua (€/día)	0,35
Coste medio diario basuras (€/día)	0,16

1 m³ = 1 metro cubico = 1.000 litros

litros/día

(*) Consumo medio histórico = 304 litros/día

INCIDENCIA DE LECTURA

¡No olvide consultar siempre este apartado! Cuando detectemos una incidencia en su lectura, le informaremos aquí. ¡Le ayudaremos a ahorrar agua y reducir su recibo!

OFICINA MUNICIPAL DEL AGUA

A su disposición para cualquier consulta o reclamación. Teléfonos: 976 200 800 (solo contratación) y 976 293 840 (para el resto de trámites). El horario de atención es de 8:00 a 20:00 horas (L–V) y de 8:30 a 13:30 horas (S). Internet: www.zaragoza.es/agua o en la dirección de correo: aguas@zaragoza.es. Dirección: Zentro Empresarial (antiguo recinto Expo de Ranillas). Avda. Pablo Ruiz Picasso, 63 A (Oficina 0A).

Ayuntamiento de Zaragoza. Servicio de Gestión Tributaria. Edificio Seminario. Vía Hispanidad 20 Planta Baja. 50009 Zaragoza
C.I.F.P–5030300–G www.zaragoza.es/agua aguas@zaragoza.es

Datos comunes de facturación

Clave recaudatoria	AC000714	Tipo de Suministro	ABASTECIMIENTO Y SANEAMIENTO
Nº de recibo	62836–8	Contador nº de serie	A11LA0285
Fecha de emisión	11/08/14	Calibre (m.m.)	13
Fecha de vencimiento	15/10/14	Propiedad	MUNICIPAL
Periodicidad de la facturación	TRIMESTRAL		
Domiciliación bancaria	2086********6445		
Tarifa general	USO DOMESTICO Y ASIMILADOS		

Detalle abastecimiento B.O.P. Nº298, 26–12–2013

Cuota fija

Periodo facturado	del 15–04–14 al 22–07–14			
Días	€/día	Colectivo	Tarifa bonif.	Importe (€)
98	0,076580			7,50

Cuota variable

	Tramo 1	Tramo 2	Tramo 3
Consumo (m³)	20	11	
Precio (€/m³)	0,210	0,503	1,258
Importe €	4,20	5,53	
Total cuota variable			9,73
Total abastecimiento (Cuota fija + Cuota variable)			17,23

Detalle saneamiento

Recogida R.U.* B.O.P. Nº296, 27–12–2012

Tratamiento y eliminación R.U.* B.O.P. Nº296, 27–12–2012

Periodo facturado	del 15–04–14 al 22–07–14
Tarifa aplicada	DOMESTICA TRAMO 2
Días facturados	98
Cubos	1

Servicio	€/día	Tarifa Bonificada	Importe (€)
Recogida R.U.	0,1045		10,24
Trat. y eliminación R.U.	0,0534		5,23
Total Basuras	0,1579		15,47

*R.U.= Residuos urbanos

Saneamiento B.O.P. N. 279, 04–12–2013 B.O.P.Nº298, 30–12–2013

Zaragoza ECOCIUDAD

FACTURA Nº 00021734981 9EZ0007140628368

TOTAL SANEAMIENTO (Cuota fija + Cuota variable)	17,53
IVA (10%) de 17,53	1,75
TOTAL RECIBO	19,28
TOTAL A PAGAR	19,28

CUOTA FIJA ECOCIUDAD ZARAGOZA

Periodo facturado	del 15–04–14 al 22–07–14			
Días	€/día	Colectivo	Tarifa bonif.	Importe (€)
98	0,054020			5,29

CUOTA VARIABLE ECOCIUDAD ZARAGOZA

	Tramo 1	Tramo 2	Tramo 3
Consumo (m³)	20	11	
Precio (€/m³)	0,264	0,633	1,582
Importe €	5,28	6,96	
Total cuota variable			12,24
Total saneamiento (Cuota fija + Cuota variable)			17,53

EcociudadZaragoza S.A.U. Vía Hispanidad 20 50009 Zaragoza Registro Mercantil de Zaragoza, Tomo 2765, Sección 8 del libro de sociedades, folio 35, hoja Z–30698 C.I.F. A50907666 www.ecociudad–zaragoza.es

LA CARTA DEL AGUA DE ZARAGOZA

"Que se lleven a cabo las dotaciones de servicios básicos de saneamiento y depuración de aguas residuales y sus lodos, acordes con las realidades locales, y que incorporen niveles sanitarios de referencia mundial que aseguren la salud, la higiene y el bienestar"

(Recomendación B2 a los poderes públicos, usuarios del agua y ciudadanos)

EL DATO

En el año 2013, los españoles pagamos, de media, 1,59€ por cada metro cúbico consumido en los hogares. Según el INE, una familia española gasta de media el 0,78% de su presupuesto anual en el recibo del agua, frente al 3%, aproximadamente, que supone el gasto en teléfono o en electricidad. (AEAS–AGA)

Source: Zaragoza City Council, Tax Department

Zaragoza, saving water city

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Objective of the programme.

The goal of the project was to demonstrate the possibility of resolving water scarcity problems by employing approaches that were cheaper, more environmentally friendly and that avoided social conflict: By increasing the efficiency of water use Zaragoza would become the example to follow.

Zaragoza, saving water city. Project Summary: Main Phases

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Phase 1: Zaragoza, Water Saving City. Small steps, major solutions.

Technologies providing long-lasting savings without losses in comfort were explained.

Phase 2: Zaragoza, Water Saving City. 50 Good Practices.

To overcome resistance to the introduction of the technologies, promotion of the spread of examples of efficient water use in the city: 50 Examples of Good Practice as regards Technology and Habits in parks and gardens, public buildings and industry so as to create reference points and models to be copied by their peers in each sector.

Phase 3: Zaragoza, Water Saving City: 100,000 commitments.

During the last phase we set the goal of bringing together and certifying 100,000 citizen commitments to correct water use to legitimize Saragossa as the city organizing an international exhibition focused on water and sustainable development.

Zaragoza, saving water city. Target public

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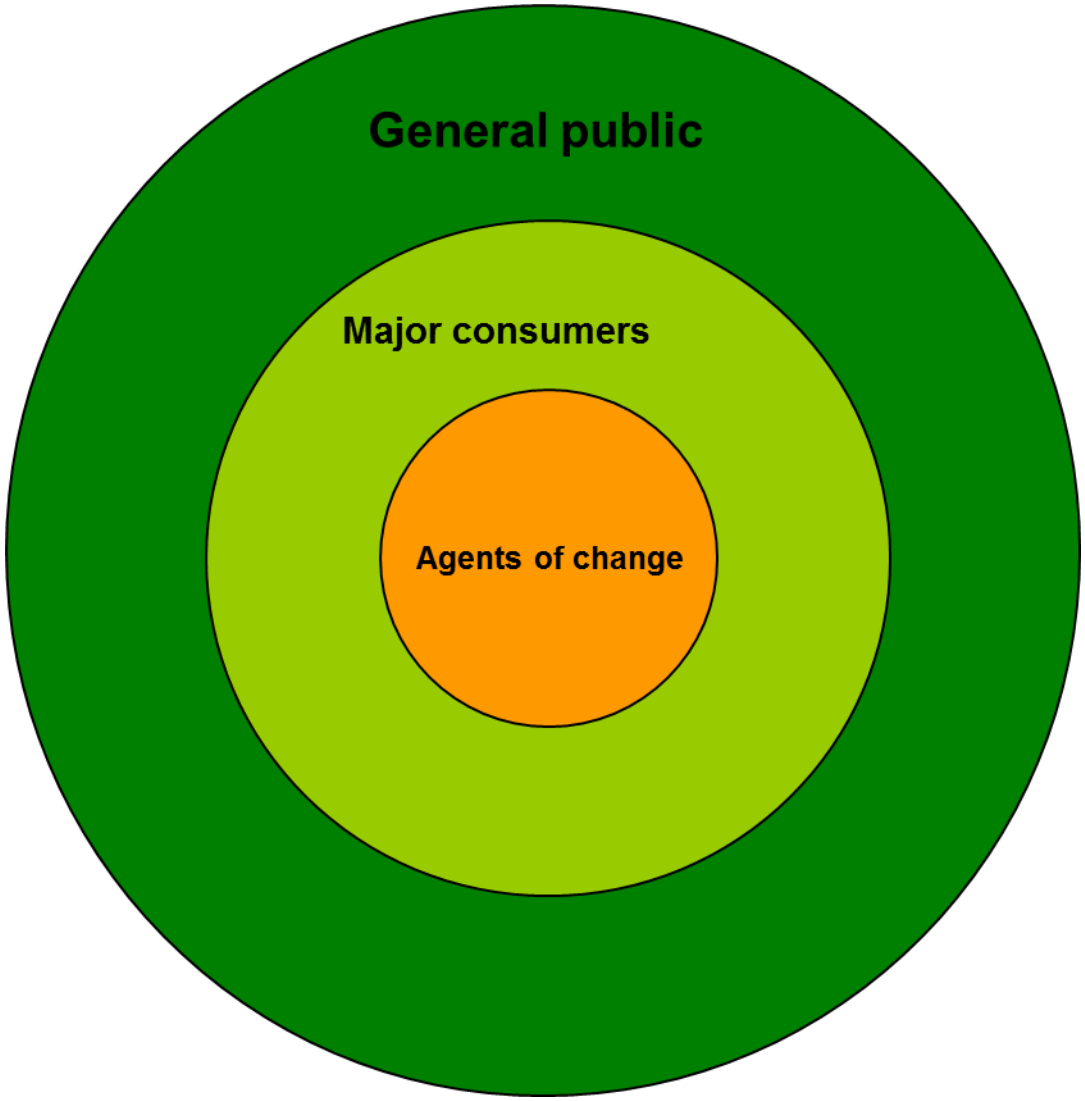

Zaragoza, Water Saving City. Small Steps, Major Solutions. (1997-2000)

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Savings in one year of 1,176 million litres in the city of Saragossa, equivalent to **5.6% of the city's annual domestic consumption**.

Increase in awareness of water saving measures: the number of citizens unaware of any measure fell from 60% to 28%.

65% of retail outlets for plumbing, bathroom and sanitary fittings, washing machines and white goods, and installation of water meters actively **participated** in the project.

69% of the city's schools participated in an activity promoting the efficient use of water.

Zaragoza, Water Saving City. Small Steps, Major Solutions. (1997-2000)

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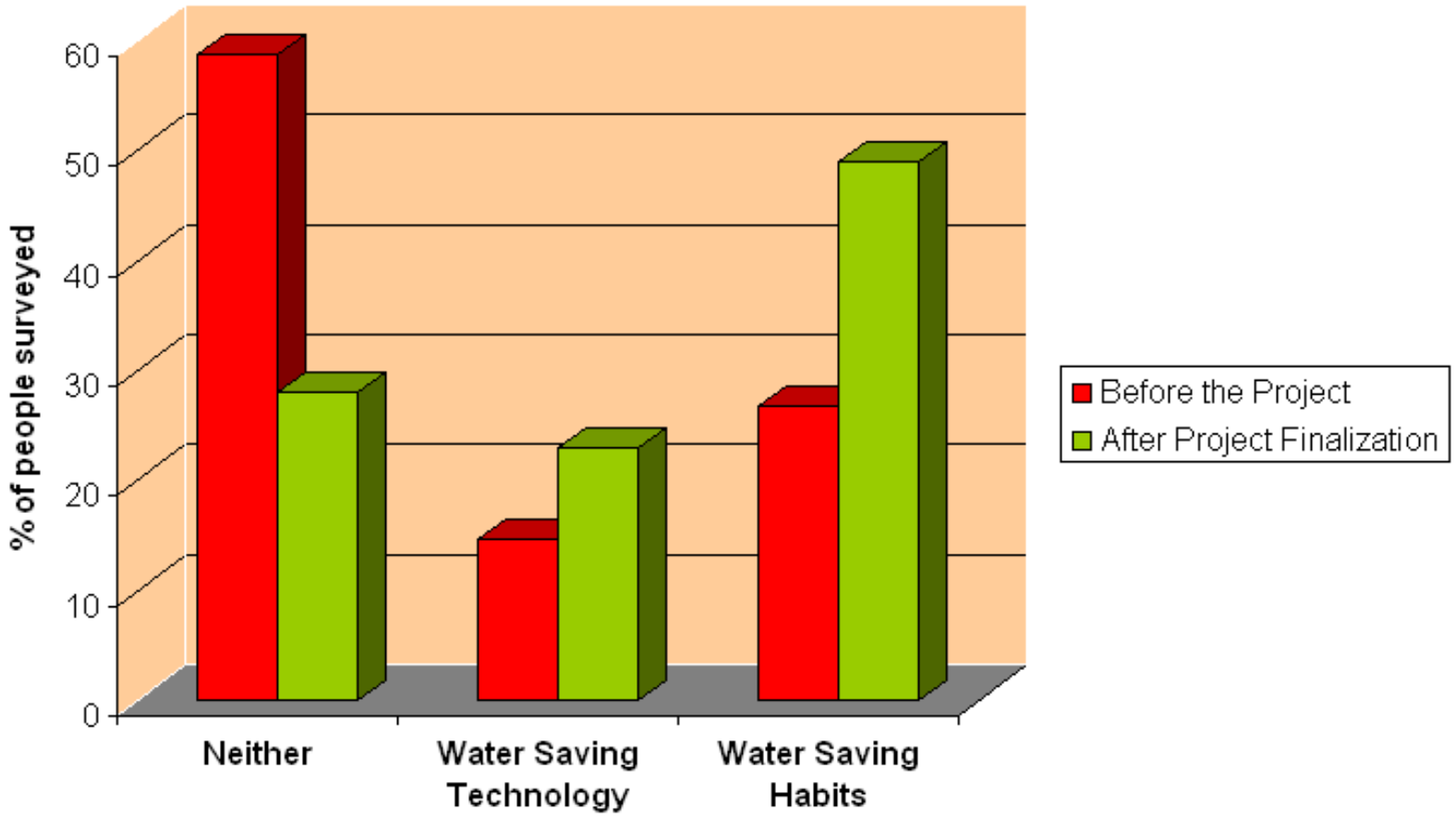

Zaragoza, Water Saving City. 50 Examples of Good Practice (2000-2006)

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SUPPORTING EACH SECTOR'S MOST DYNAMIC AND ACTIVE MINORITY in order to stimulate a process of imitation in their peers.

Prior surveys on the consumption of water in the sectors involved (schools, hotels, residences, parks and gardens, industries, etc.)

Free audits in centres that voluntarily wished to make a commitment and become an example of good practice in water management.

Zaragoza, Water Saving City. 50 Examples of Good Practice (2000-2006)

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Secondary School

- Installation of taps with timers.
- Installation of urinals with timers.
- Installation of water-saving toilets.
- Some green areas were planted with plant species adapted to drought conditions, other gardens were equipped with automatic watering systems that monitor consumption.
- The quantity of water consumed per user per day following installation was 5 litres and the cost per user per year 2.3 euros. These figures are respectively 2.4 and 2.8 times less than the average figures in Zaragoza schools.

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Hotel 5*

- During a year, it drew up a wide-ranging study that provided the centre with all the information necessary to undertake the changes with guarantees of success.

- Systems for saving water in the rooms had not been introduced for fear of reducing the quality of services. A practical study was therefore carried out with water saving devices and individual meters in four rooms, the guests were surveyed on the perceived quality and no complaints were made.

- During the study, a 19% hot water saving was made and a 27.6% saving in cold water compared to consumption in traditional rooms.

Zaragoza, Water Saving City. 50 Examples of Good Practice (2000-2006)

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Information dissemination process

- Practical Guide on water saving technologies for homes and public services
- Self-Diagnosis Guides on water use for hospitals, offices, schools, hotels, bars, cafes and restaurants.
- Pocket Guides on Good Practices for hairdressers, carwashes, offices, restaurants, bars and cafes, hotels, sports centres and shopping centres. Circulation among 10,000 users.

Zaragoza, Water Saving City. 100,000 Commitments. (2006-2008)

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Project based on:

- A citizen participation process…
- to make a commitment…
- the goal of which is saving water and responsible consumption.

Making Commitments

- more than 170,360 commitments
- 30,412 committed citizens
- 312 committed organizations

Zaragoza, Water Saving City. Lessons learnt

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1.- Understand existing consumption levels and prioritize activities with a higher potential for savings:

Zaragoza City Council had set up the modernisation plan of the infrastructures related to water management and bylaw implementation in relation to efficiency in water usage and tariff system with incentivizing rates: Zaragoza rates in progressive bands that award savings

2.- The Public Sector as an example to the rest:

Municipal sports centres in Saragossa have managed to reduce their water bills by 19% (2007)

3.- Support for the most innovative minorities:

Backing with technical/auditing consultancy those users that show a desire to consume water more efficiently: 50 Examples of Good Practice

Zaragoza, Water Saving City.
Lessons learnt

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4.- Civic Participation: Any project aiming to work to improve water efficiency in cities must strive for the complicity and participation of consumers

5.- Integrated Planning: Constructing a social revolution around efficient water use in Spanish cities will only be the result of linking together a range of different solutions. This is the objective of the integrated plans for the management of water demand.

Creation of a working group from the services and departments of Saragossa Town Hall involved in water management (treasury, infrastructure, environment, parks and gardens, sports centres, etc.)

Zaragoza, living lab: collaborative innovation

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Smart monitoring project of combined sewer overflows

Partners: Research centre (Polytechnic school), an utility (SUEZ group), an SME and municipal society responsible for city`s network management.

Innovation solution: Quantification of combined sewer overflos (CSOs) a sewer chamber of Zaragoza network through **a real time monitoring** of discharges duration, frequency and their quantitative and qualitative characterization measuring temperature, level and flow estimation and turbidity.

Living lab in the city: the measures of the sensors are kept in real time. With the results taken from the project, we expect to know and properly evaluate the impacts produced on the environment by the alleviations originated in case of heavy rains.

Zaragoza, living lab: collaborative innovation

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Test bench for water-saving products

Partners: Research centre (Zaragoza university) and two business entities.

The test bench for water-saving products is based on the launching of an Open Innovation Space focused on the innovation of products linked to the efficient use of water, based in the Living Lab researching concept.

The pilot phase has consisted of the selection of a sample of dwellings for the evaluation of water-saving toilets. For continuous monitoring a clever water consumption meter has been designed. This device can store flow data and analyse consumer standards.

Comparison of the performance of toilets with discharges capacities up to 10 l against ecological toilets with a discharging capacity of 2,6-4 litres. The toilet`s replacement enables a reduction of the daily consumption per home (31%).

ZINNAE: Promoting water innovation solutions in small villages

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Sustainable Management of the Integral Water Cycle in low-technified urban areas

Partners: Research centre (Zaragoza university) and two business entities (SMEs).

Innovation solution: developing an efficient water management software tool in towns currently experiencing difficulties for the lack of financial, human and technical resources.

The needs met by management tools are: upstream supply (tank levels monitoring, pumping an regulatory requirements); leakage checking in distribution network and compliance with regulatory requirements of quality of water supply and sewage service.; supply and sewage cost control and monitoring and communication towards supra-municipal agents, responsible for the integral water cycle and users.

Main benefits: Cost saving, security of supply, legal compliance and decision support.

Contact

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