This presentation premiered at WaterSmart Innovations

watersmartinnovations.com

watersmart
INNOVATIONS

Water Efficiency Around The World

Philip Turton, Demand Management Bulletin, U.K.
Paul W. Lander, University of Colorado/dakotaridge partners

water smart innovations october 2014

HTTP://WWW.IWAEFFICIENT.COM/2015/

Research: Performance & Economics: Rainwater Tanks

Dr Shirley Gato-Trinidad, Swinburne University of Technology

Dr Kein Gan, Yarra Valley Water

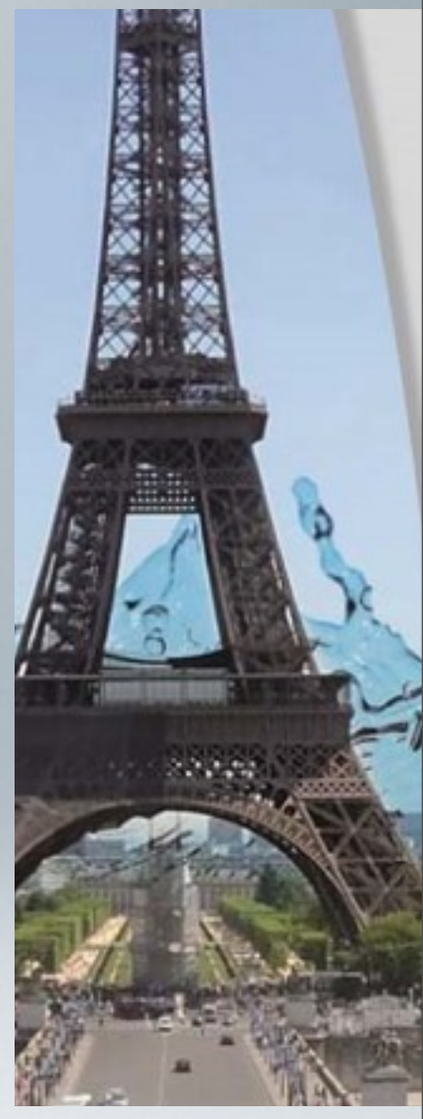
- Payback period: HouseOwners < 20 years
  - Government 1 -12 years
- Size Matters1: Tanks 2300 to 3600L w/o indoor plumbing = highest NPV
- Size Matters2: Program expansion to 4400 households, tank > 4500L =highest NPV
- Installation of rainwater tanks = 42.5% *reduction* in household water consumption.

AUSTRALIA

Tank Size	HH Count	Annual Total,kL	NPV ($)	Savings (%)
All	4391	105		42.5
600 – 1000L	237	74	191,760	36.3
>1000 – 1700L	279	87	272,753	38.3
>1700 – 2250L	855	95	913,426	40.2
>2250 – 3600L	846	102	980,566	40.3
>3600 – 4500L	211	101	247,297	39.8
>4500L	409	139	680,798	45.4
2000 - <5000L T&OR L	507	96	377,338	44.4
>5000L T or L	482	119	303,370	43.6
>5000L T & L	565	122	335,725	50.0

Planning strategies under water deficit in the state of zacatecas, mexico

Jaqueline Lafragua
Benjamín De León



ZACATECAS GOBIERNO DEL ESTADO

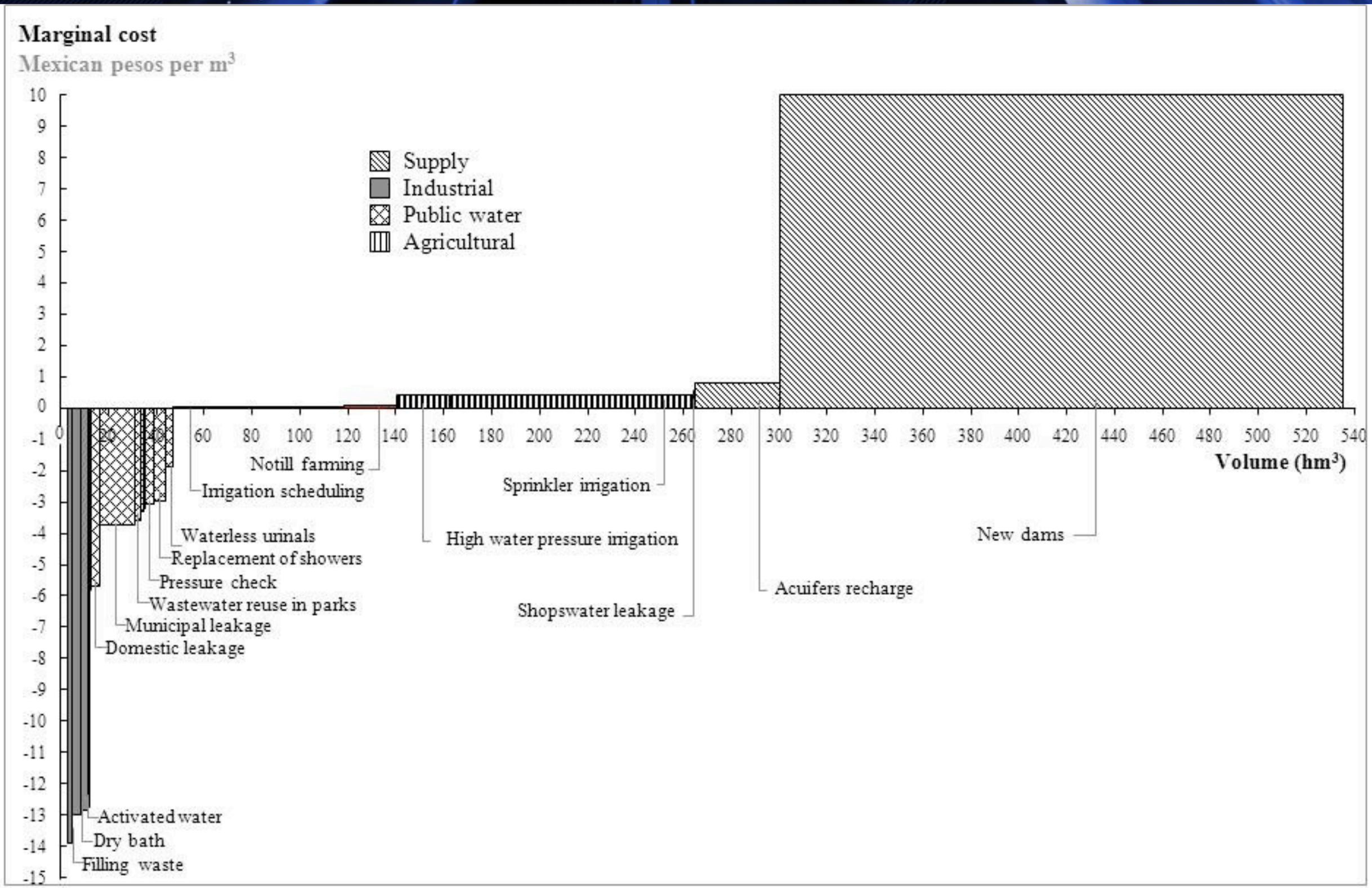
CONAGUA
COMISIÓN NACIONAL DEL AGUA

SEMARNAT

IMTA®
Instituto Mexicano de Tecnología del Agua

MEXICO

Results from the Prospective Technical Anaylisis



Setting Performance Indicators:

Towards new urban wastewater treatment Performance Indicators for life quality improvement: experiences from Italy

- The "Service Objectives": use of appropriate indicators, for monitoring specific objectives over 10 years.
- Medium-term actions for infrastructure development in Districts.
- "Service Objectives" linked to the individual regions and the programming of structural interventions.
- Potential conflicts always problematic, SO
- It is essential that all those actions that could encourage the stakeholder's acceptability are implemented.

S. De Gisi, L. Petta, P. Mulargia, R. Farina

ITALY

ENEA
ITALIAN NATIONAL AGENCY FOR NEW TECHNOLOGIES, ENERGY AND SUSTAINABLE ECONOMIC DEVELOPMENT

Surveys & Baselines:
More regular monitoring of water demand and usage behavior

Rainwater harvesting policies and practices in France: first results from a national survey

Aurélie Gerolin, Charlotte Mucig, CETE de l'Est
Nathalie Le Nouveau, Certu
Bernard de Gouvello, CSTB/LEESU

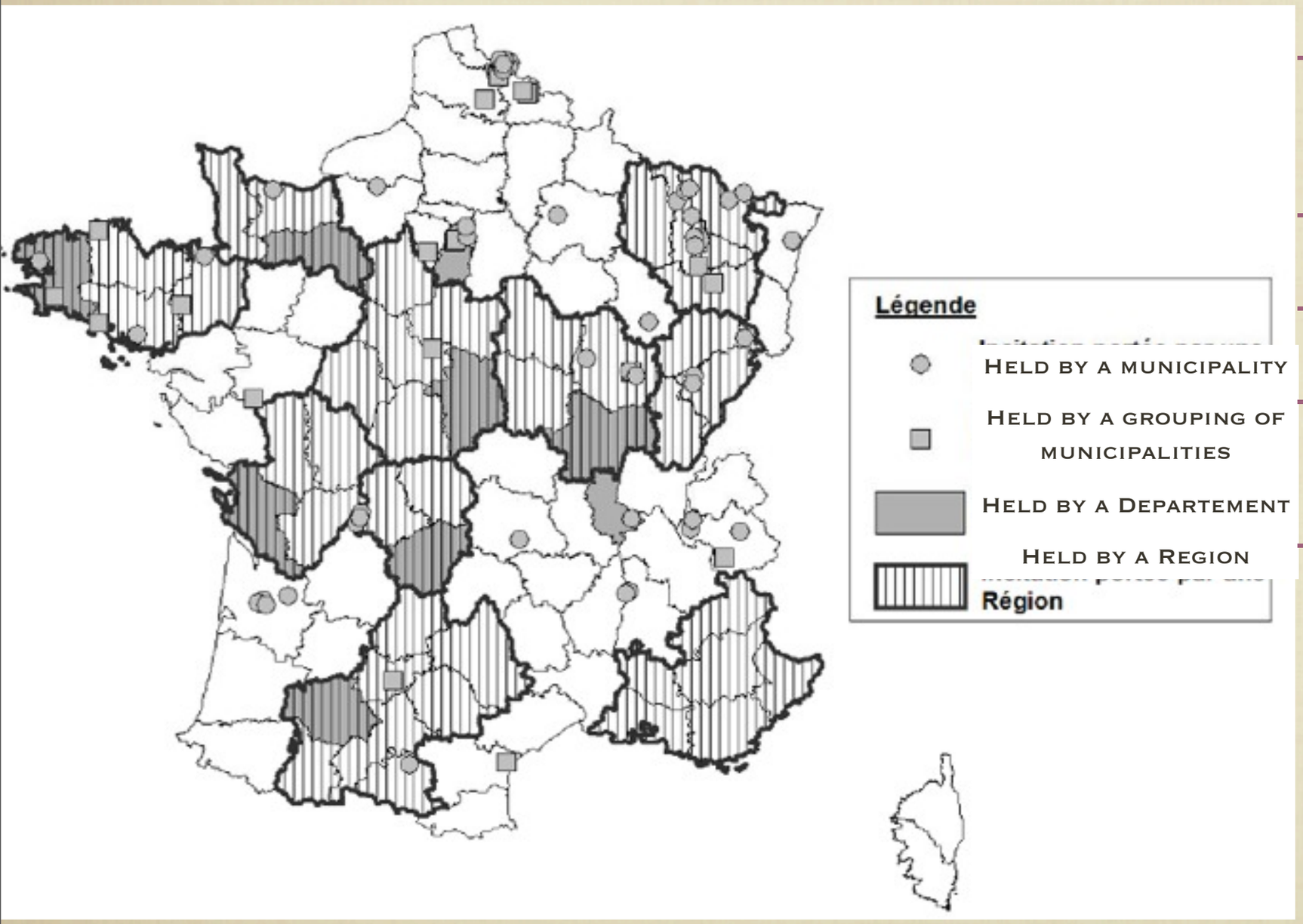
FRANCE

- Sample of 360 projects (nearly 1/3 under preparation) mainly from bibliographical research and press reviews

Type of projects	Category	Sub-total per type of project	Sub-total per category
Multi-dwelling units	Housing *(except from individual housings)*	9	45
Accomodation housings		8	
Housing estates, housing projects		28	
Schools	Buildings open to the public *(except from Housing)*	24	142
Secondary / high schools		57	
Offices		43	
Commercial buildings		18	
Public equipments, community facilities		65	
Public watering, lawns and ornamental plants watering	Watering and cleaning operations *(except from individual housings)*	59	91
Cleaning operations (car fleets, roads,…)		32	
Industrial processes	Other	9	49
Agricultural uses		3	
Other (community gardens, fire-fighting,…)		37	

108 financial incentives at different scales

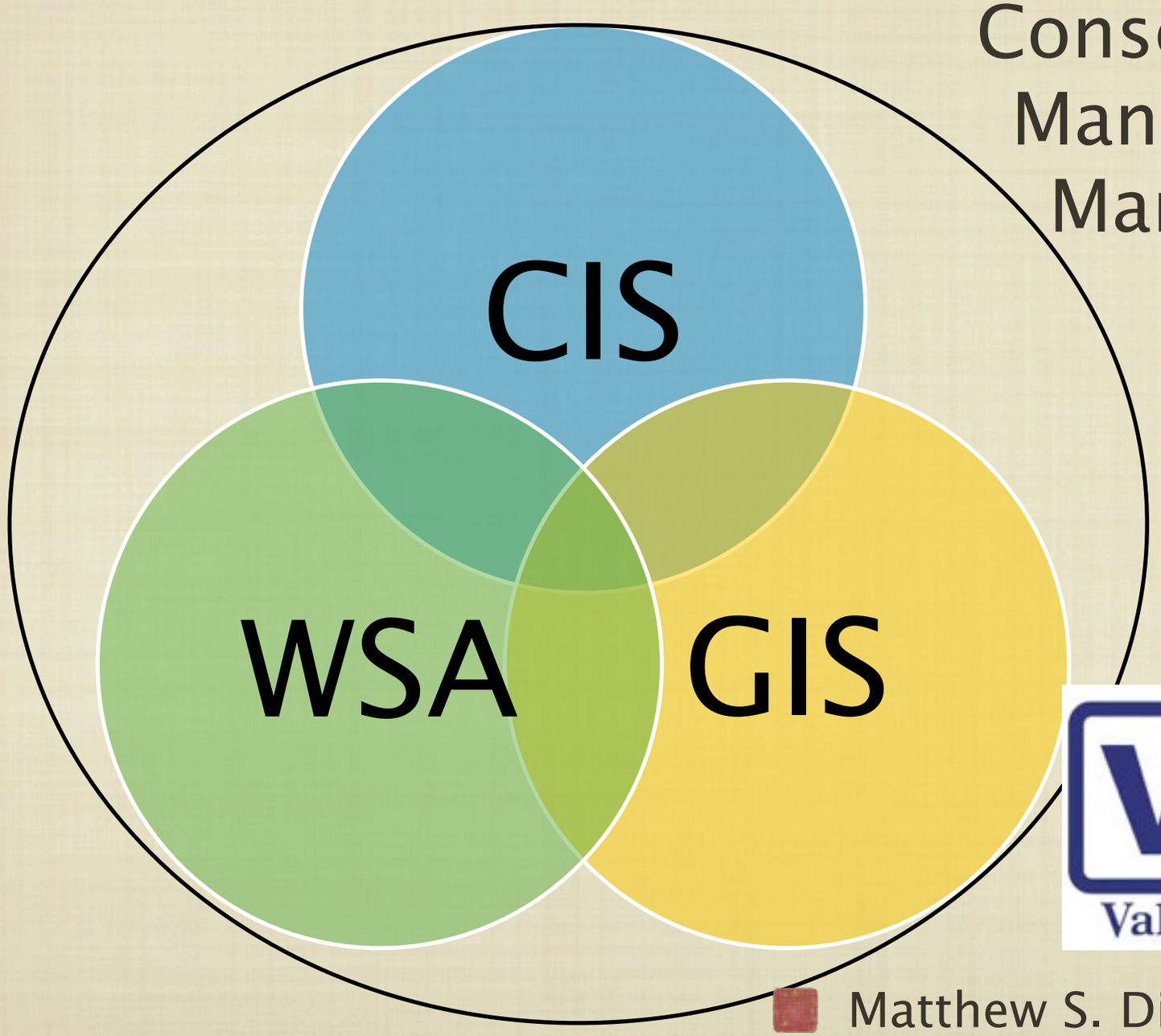
(including Guadeloupe and Martinique)



- Some geographical **concentrations**
- **Peak** in 2007, then a decreas
- Implication of French **Region**
- Also aids from Water Agencie *(not represented)*
- Various **forms** and **eligibility criteria**

Mining Our Own Data: Research to optimize water resources

GIS –CAMM
Conservation Asset Management and Marketing Tool



U. S. A.

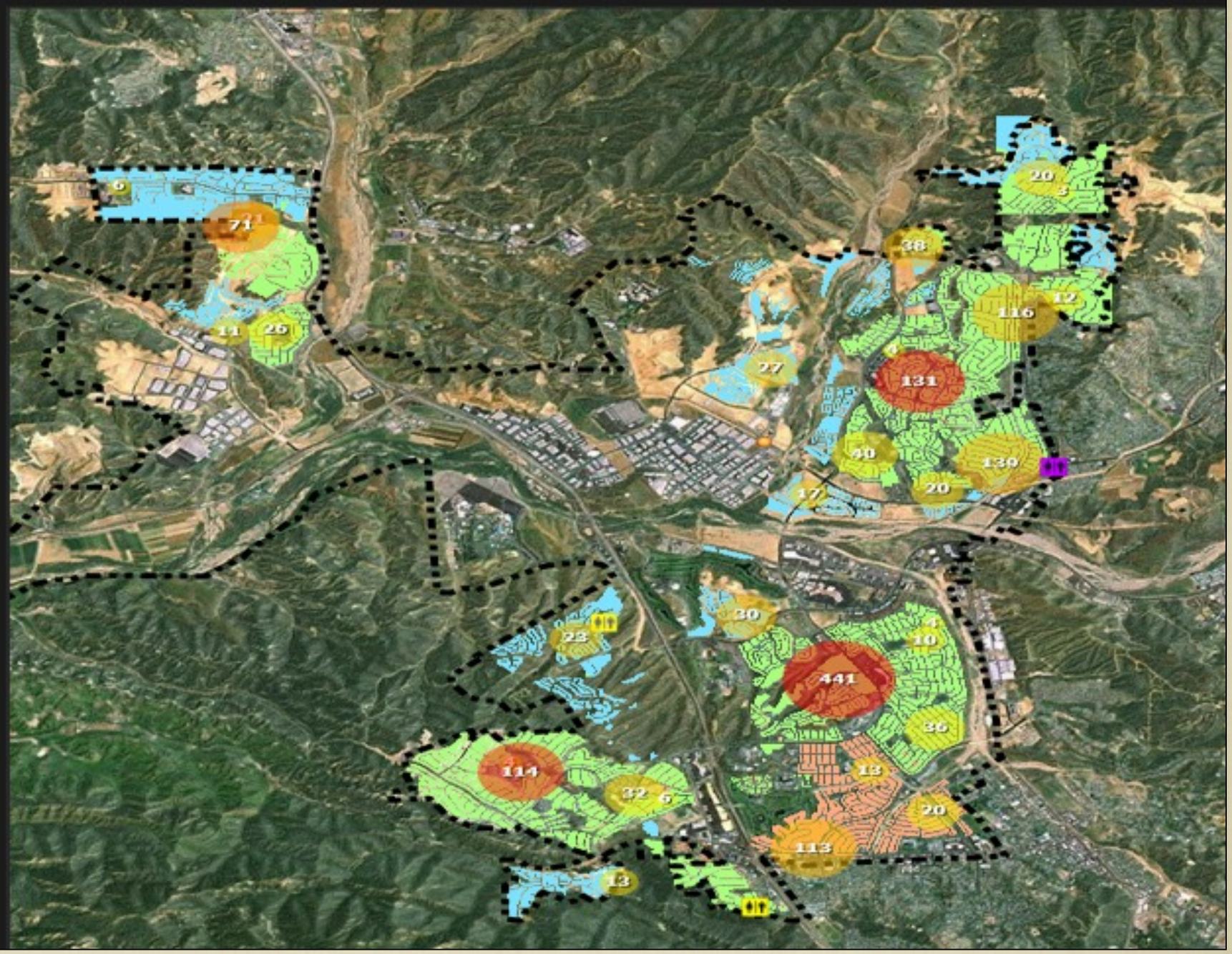
- Matthew S. Dickens
- Resource Conservation Manager

VWC
Valencia Water Company

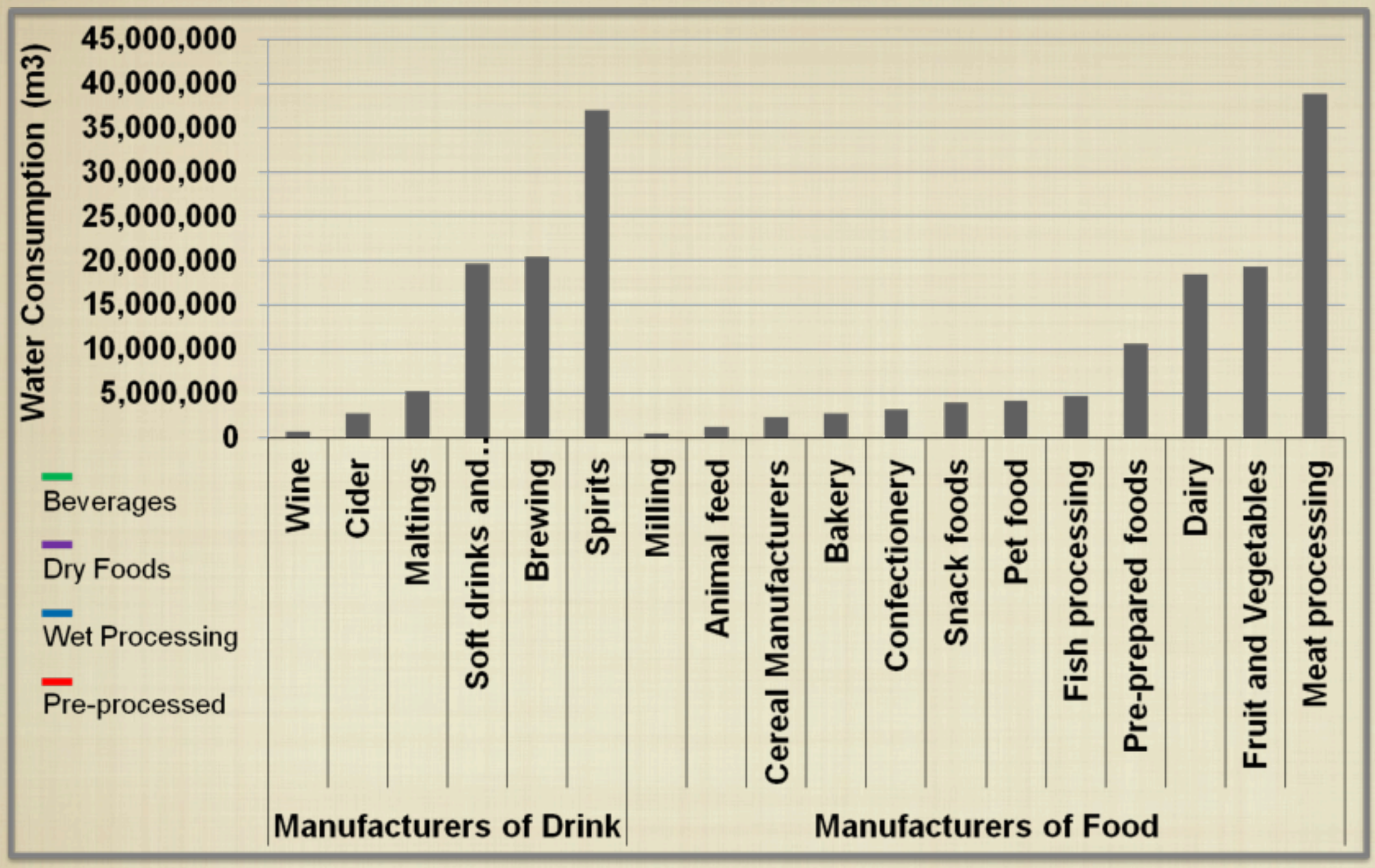
GIS - CAMM (Conservation Asset Management & Marketing) Tool

Map Contents

- ServiceMeter
- Residential Landscape
- Irrigation Landscape
- Home Construction by Year
  - Pre-1980
  - 1980-1994
  - 1994-2013
- VWC Toilet Rebates
  - 2013
  - 2012
  - 2011
  - 2010
  - 2009
  - 2008
  - 6
- CLWA Toilet Rebates
  - 2013
  - 2012
  - 2011
  - 2010
  - 2009
  - 2008
  - 6
- CityLMD
- 2012 Color Infrared (CIR)
- Base Map



Usage Data for Demand Projections

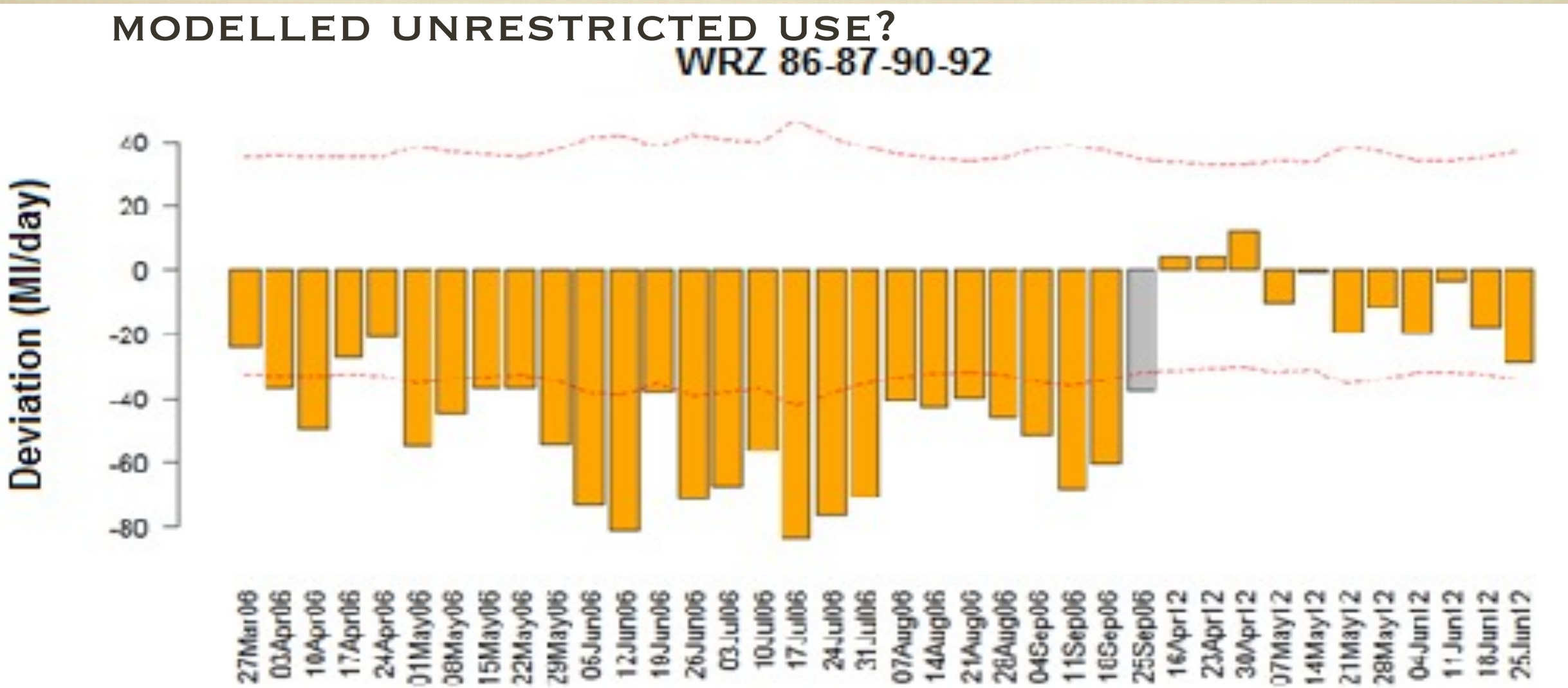


U. K.

Paul Birchall.
Environment & Business Manager, Demand Management

Post-Program Evaluation for Adaptive Management

- Is actual use in restricted periods less than modelled unrestricted use?



Angela Wallis. Senior Advisor, Water Resources, Demand Management. Environment Agency

U. K.

- Increased demand in 2012 was modest; weather meant there was no sustained high usage

- Use in winter 2011/12 appears lower than typical for a number of zones

- Demand was 1-2% lower than forecast during the period of leading up to and during the TUB. This is **not** statistically significant

- In the run-up to the TUB the maximum decrease was 6.5% of forecast. During the TUB this figure increased to 10%

AgAdapt: Adapting water use by the agriculture sector

Global audit of European Reuse Water

Country	Spain			France		Italy		Cyprus			
Site #	1	2	3	4	5	6	7	8	9	10	11
Treatment	Bio Settler UF RO	Bio Filter UV	Bio UV	Bio Lagoon	Bio Lagoon Filter	Bio Filter UV	Bio Filter Peracetic acid	Bio Storage Filter Chlorine	Bio Filter Chlorine Storage	Bio Storage Filter Chlorine	MBR Lagoon
Distribution (km)	-	Channel	25	60	< 10	Channel		35	60	100	-
Irrigated surface (ha)	600 (1800)	1200	250	700 (1500)	10	24,630	3,700	420	-	-	-
Reuse volume (Mm^3/y)	2,0	45	0,5	1,1	0,05	86		1,8	5	2,4	0,9
Main cultures	Grapes	Rice	Fruits	Cereal	Orchard	Rice, Corn, Wheat, Grass		Corn, Clover	Fruits Vegetables	Fruits Lanscape	Fruits
Irrigation devices	Drip	Flooding	Drip	Sprinkling	Drip	Sprinkling & Flooding		Sprinkling & Drip			

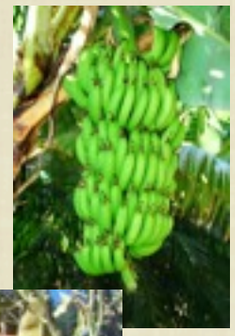
E. U.

Which crop for Which place with What Water ?

Product quality
Production yield
Environment

O&M costs

Workers
Public – Consumers



Specific cultures

Eutrophication

Soil

Agronomic risk

Technological risk

Sanitary risk

Human crops

Non human crops

Non public Landscape irrigation

Crop types
Soil nature

Distribution
Storage
Irrigation devices

Crop types
Irrigation technologies

Regulation
Critical issue

Water quality targets

- Organic matter & Nutrients (N, P)
- Suspended solids
- Micropollutants
- Microbiological indicators
- Salts

Water Impact IndeX

An operational Water footprint indicator

VEOLIA WATER

Speaker : Claire ROUSSELET

Water footprint background

➔ **Water footprint is not just a matter of volume**

The volume is a good indicator to raise awareness ...

Water Impact IndeX : method

the **Water Impact Index (WIIX)** is a

➔ simplified indicator for water footprinting

- The Water Impact IndeX assesses **the impact of a human activity** on the **availability of water resources**
- It illustrates how **the other users** (humans and ecosystems) may be **deprived of this resource**

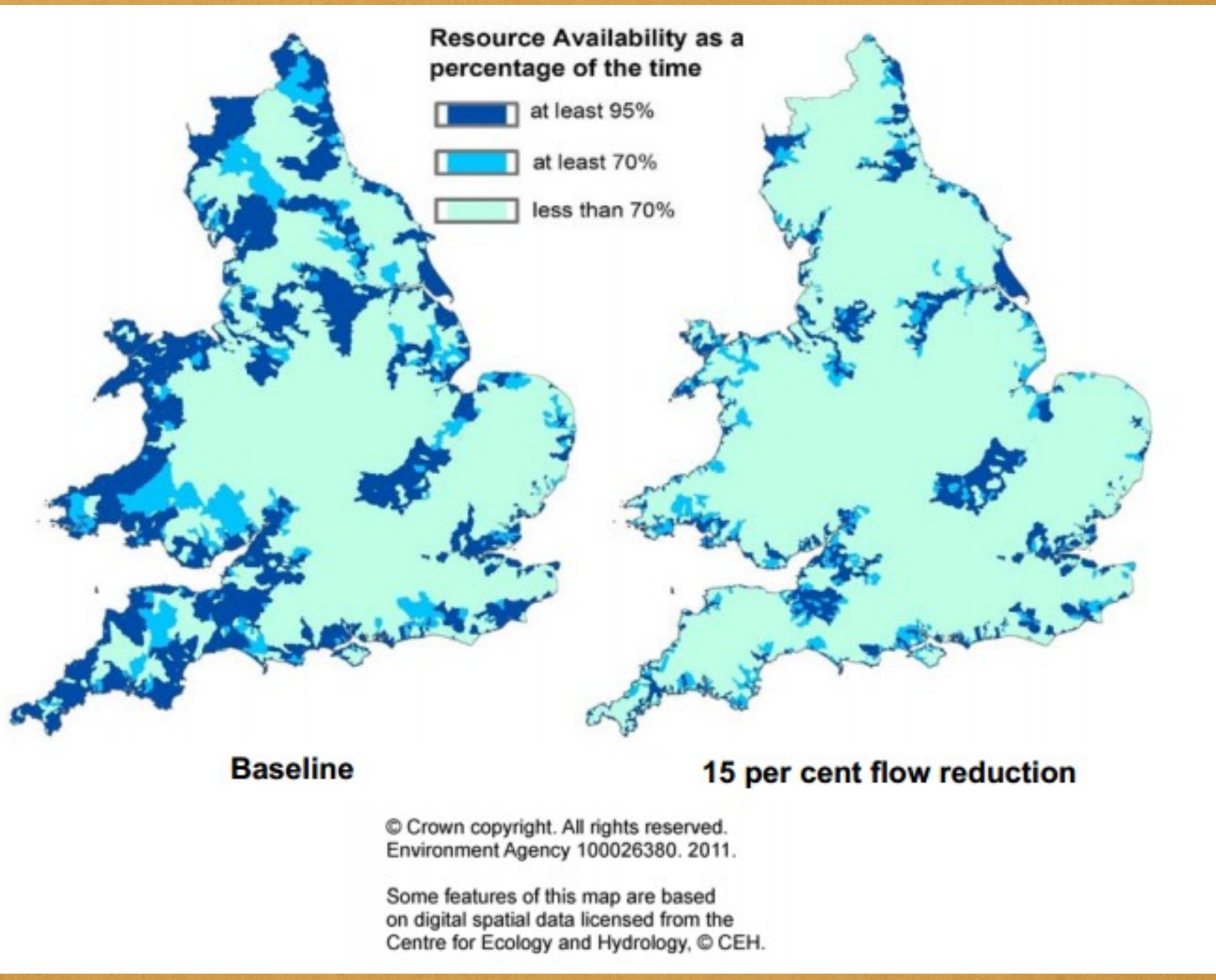
WORLDWIDE

Why water and energy efficiency?

Approx Quarter of domestic CO_2 emissions are form hot water use in the home

CO_2 emissions from hot water use in the home is 5% of UK emissions.

About same as aviation!



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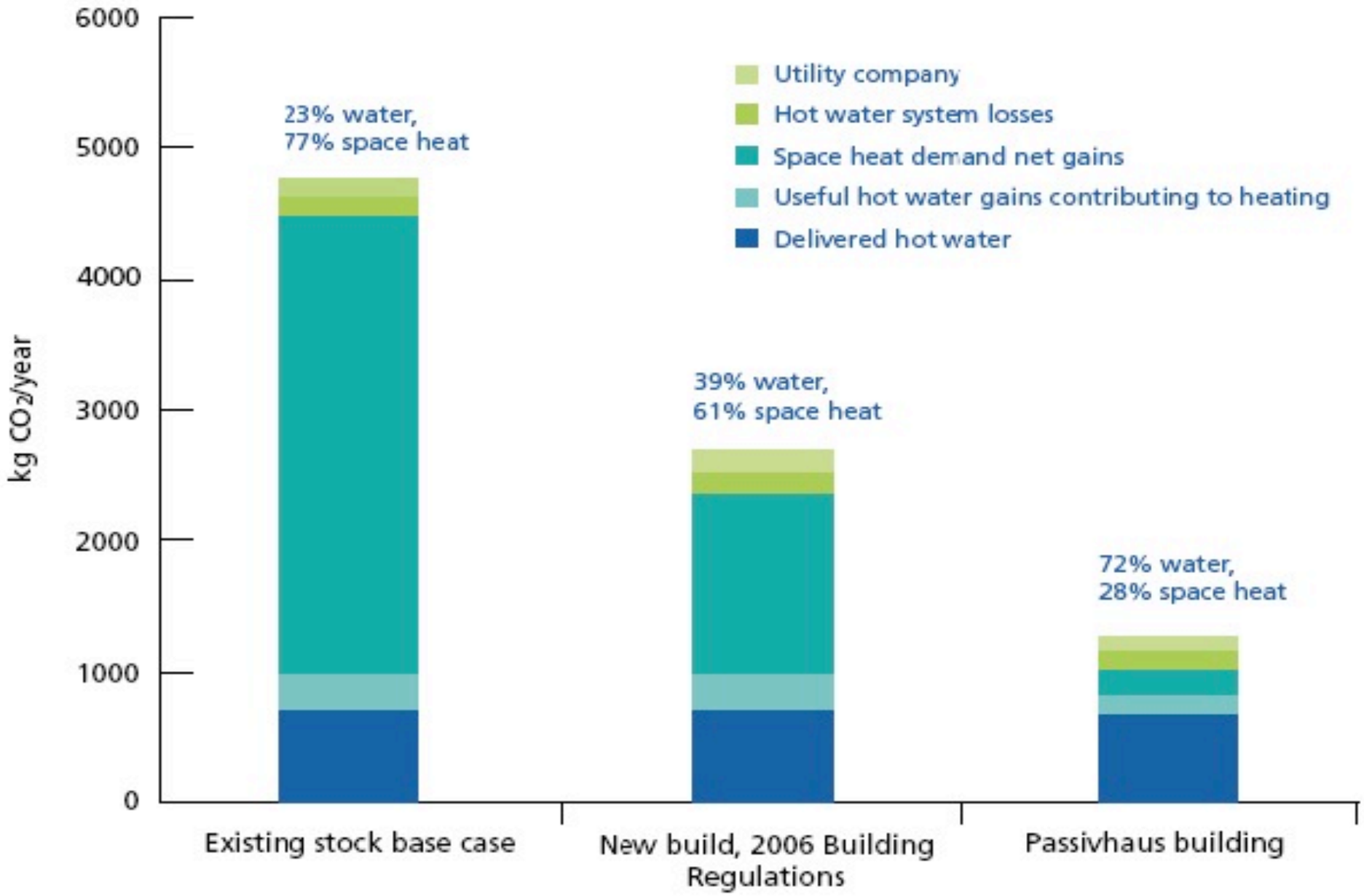
CO_2 emissions from domestic water use in a home with gas heating.



1993: National Demand Management Centre established

Environment Agency

Demand management bulletin

Series 2, Issue 11, July 2014

UK Water Efficiency Awards 2014

The Environment Agency and Waterwise UK Water Efficiency Awards were supported this year by Anglian Water Business and sponsored by AquaFund, Ofwat, Welsh Government, the Consumer Council (Northern Ireland) and the Scottish Government.

The WWF's Living Planet Centre in Woking was the ideal venue for the awards ceremony on the evening of 16 June. In his welcome address, David Nasubaum, WWF CEO, informed the audience how the WWF building is an exemplar for water, energy and carbon efficiency.

In his opening address, Anglian Water Business Director Bob Wilson emphasised the need, given the opening of the water business to retail competition 2017, for water companies to be responsible retailers in supporting water efficiency.

The keynote address was given by Trevor Bishop, Deputy Director of Water Resources at the Environment Agency. He asserted that there had been a 'real shift' in understanding the evidence about water efficiency while using economics to best advantage, as well as winning hearts and minds.

There has been progress across the ground on the water/energy/carbon agenda as well as the affordability issues. Trevor did, though, issue a big warning: *'don't grab defeat from the jaws of victory, build on evidence and best practice and win hearts and minds to do the right thing'*.

Nicci Russell, Director of Parliamentary and Public Affairs at Ofwat, completed the addresses. She saw the continuing need for water companies to build relationships with customers. Ofwat's new four year plan included an emphasis on innovation and on the environment. Nicci said there was a need to engage widely on performance monitoring and cited the *Blueprint for Water* analysis described on page 6.

Waterwise's Jacob Tompkins introduced Environment Agency Board Member, Karen Burrows, to present the awards with him. These included a new special award in memory of Clare Ridgewell. It was given to Brian Hooper for his work at South West Water and then as a consultant *'championing new products and new approaches'*.

Philip Turton, Editor

A happy throng of winners at the awards evening

In this issue

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U. K.

2014-08-03

Water Efficiency Watch is the online newsletter of the Alliance for Water Efficiency, edited by Peter Mayer.

In this issue of Water Efficiency Watch...

U.S.A.

RESOURCES:

E.U.
Demand Management Bulletin, U.K. Environment Agency
TRUST : Transitions to the Urban Water Services of Tomorrow, initiative of the E.U.
UValencia, Spain
U Exeter, U.K.

NAmerica
Water Efficiency Watch/AWE
Pacific Institute, CA
POLIS Project, UVictoria, CAN
Arid Land Institute, CA
CalUrbWaterConsCouncil
Western Resource Advocates, CO

AUS
Swinburne University of Technology
University of Technology, Sydney

pipturton@aol.com
paul.dakotaridge@gmail.com

1. Paris Highlights:
Most of Presentations Focus on Efficient Urban Water Systems (Provider),

While N.Am. focus has been on Effic End-Use (Customer)

rainwater as Reliable Resource

Still large Focus on Program Review (before/after), but no std methodologies

Most data/msrmt still mostly aimed at System Level:
'provision of urban services'; leakage;/Non-Rev Wtr; Pressure Mgmt;WQ; Energy/GHG; Optimization; Better Use of Data-Creating More Responsive Networks
>Rather than end-use efficiency

2. DMgmt Bulletin
   Surveys

3. AWE/ WiserWatch
   Outdoor Res Update- Gap