# SWAN 4th PROGRESS MEETING
# Partner Scientific Progress

## University of Seville Team

:


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University of Seville, June 12th, 2014

cnrs umiwater International Joint Center on Water, Environment and Public Policy

swan Sustainable Water ActioN

Universidad de Sevilla

# Presentation contents

**A) Scientific progress in WP3 since PM 3 (November 2013 – June 2014)**

**B) Work program for June – December 2014**

# B) Scientific progress in Work Package 3: November 2013 – June 2014

## Factors explaining urban household water consumption

- **Explanatory factors** that explain the **decrease in domestic water consumption** that the city of Seville has experienced since the mid- 1990s.
- **Study scale**: ***522 census tracts***:
- **Variables and indicators**:
  - *Demographic characteristics* (age distribution, household size, immigration
  - *Building characteristics* (average rateable value, average height, average rateable area)
  - *Indicators* (gross population, net population, housing density, inhabitants per housing).
- **Statistical analysis** to determine the main factors that explain variations in household consumption: bivariate correlations, factor analysis, cluster analysis and multivariate linear regression analysis.
- Some ***preliminary observations***:
  - **Importance of spatial differences and contrasts** → utility of **microscale studies**.
  - Explanatory **relevance of specific variables**: age distribution, housing density and average rateable value.

## Ángela Lara (contracted between July-September, 2013)

## Task 3-1: urban water demand

## Urban water cycle management best practices

- Document review of the main research projects on recent developments in the management of urban water cycle.
- Main results:
  - Systematization of available information on projects, programs and methodologies on planning and designs for management of urban water cycle.
  - Analysis o the main DSS tools used for project design that incorporate the urban water cycle.
  - Identification of past and ongoing research projects that are a reference in terms of good practices for management of urban water cycle.

# Programs and research projects

| PROGRAMAS Y PROYECTOS DE INVESTIGACIÓN (PPI) | | | | |
|---|---|---|---|---|
| Tipo | Clave | Ámbito | Título | Coordinación (Equipo ES) |
| PPI | 01 | GIRH | IHP_Intenational Hidrologic Programme | UNESCO |
| PPI | 02 | GIRH | European Commission Water Policies | DG.MA-CE |
| PPI | 03 | GIRH | MELIA_Mediterranean Dialogue on Integrated Water Managment | Varios (CENTA) |
| PPI | 04 | GIRH | NOVIWAM_Novel Integrated Water Managment Systems. Southern European Regions | CENTA; JA |
| PPI | 05 | GIRH | SWAN_Sustanaible Water ActioN | CNRS (US) |
| PPI | 06 | CUA | Cities of the Future Programme | IWA |
| PPI | 07 | CUA | WaND_Water Cycle Managment of New Development | U. Exeter |
| PPI | 08 | CUA | SWITCH_Managing Water for the City of the Future | UNESCO-IHE |
| PPI | 09 | CUA | TRUST_Transition to the urban water services of the Future | IWW-IWA |
| PPI | 10 | CUA | SANITAS_Sustainable and Integrated Urban Water System Management | U. Girona |
| PPI | 11 | CUA | AQUAENVEC_Evaluación y mejora de la eco-eficiencia del ciclo urbano del agua a través de LCA y LCC | CETaqua-UAB |
| PPI | 12 | SU | EcoCity | WU Wien (Gea 21) |
| PPI | 13 | SU/AB | Energy TIC | COROGEN SPRL (JA) |
| PPI | 14 | AB | Reclaim Water_Tecnologías para la reutilización segura del agua y para la recarga artificial del acuífero | U. Aachen |
| PPI | 15 | AB | WIZ_WaterIZe Spatial Planing | Acque S.p.A |
| PPI | 16 | AP | Day Water_ADSS Hydrópolis | CEREVE |
| PPI | 17 | AP | PREPARED_Prepared Enabling Change | WSSTP |
| PPI | 18 | AP | AQUAVAL_ La gestión eficiente del agua de lluvia en entornos urbanos | Ayto. Xátiva |
| PPI | 19 | AR | NaWaTech | U. Bremerhaven (UPC) |


WaND
water cycle management for new developments
Welcome to the WaND portal. This browser provides information on deliverables (reports, tools and models) developed by the WaND consortium. It also provides resources and a decision support framework for key stakeholders.
EPSRC
http://www.wand.uk.net
The overall aim of the WaND project is to support the support the delivery of integrated, sustainable water management for new developments by provision of tools and guidelines for project design, implementation and management
Sustainability
Key Outputs
About
WaND
Sustainability
Case Studies
Developer
Planner
Water provider
Householder
Exit
Read Me
Contact Us


SS
HYDROPOLIS
Welcome
What's ADSS


SWITCH
Managing Water for the City of the Future
Training Desk
Home
Modules
Español
Português
Case studies
SWITCH resources
Trainer materials
Terms of use
Request for training
Trainer profiles
Training courses
Contact
Archive
Login
What you can find on this website
Summary booklet
SWITCH City of the Future
SWITCH: the city of the future
Target audience

# Programs and research projects – AQUA-RIBA

| BdD: PROGRAMAS Y PROYECTOS DE INVESTIGACIÓN | PPI-xx/ Acrónimo |
|---|---|

| NOMBRE DEL PROYECTO | SUBTÍTULO |
|---|---|
| Coordinación: | Equipo coordinador del proyecto. |
| Financiación: | Institución o programas que proporciona financiación. |
| Organigrama: | Equipos participantes: Universidades, centros de investigación, instituciones o empresas. |
| Periodo: | Fecha inicio-final. |
| WEB | Enlace a la web del proyecto |

| **Descripción del Proyecto:** | |
|---|---|
| Aspectos más relevantes: objetivos generales y particulares, áreas de investigación, propuestas realizadas, etc. | |
| **Aportaciones a la GIAU:** | |
| **Líneas de trabajo:** | Aquellas áreas de trabajo dentro del proyecto que más se relacionan con los objetivos de la Guía AQUARIBA. |
| **Recursos:** | Descripción y enlaces a aquellos recursos (herramientas, documentos, etc.) obtenidos como resultados del proyecto y de utilidad para los objetivos de la Guía AQUARIBA. |
| **Estudios de Caso:** | Selección de estudios de caso realizados en el marco de la investigación, y enlaces a la documentación existente. |
| **Publicaciones:** | Referencias bibliográficas o enlaces a las publicaciones más relevantes fruto del proyecto. |

| **Comentarios:** |
|---|

# Decision Support Systems

| SISTEMAS DE APOYO A LA TOMA DE DECISIONES (SAD) | | | | |
|---|---|---|---|---|
| Tipo | Clave | Ámbito | Título | Organismo |
| SAD | 01 | CUA | ESAT_Environmental Sustainability Assessment Tool | UNSW |
| SAD | 02 | CUA | PAT_Project Assessment Tool | WaND |
| SAD | 03 | CUA | SET_Sustainability Evaluation Tool | WaND |
| SAD | 04 | CUA | CWIS_City Water Information System | SWITCH |
| SAD | 05 | CUA | UWOT_Urban Water Optioneering Tool | SWITCH |
| SAD | 06 | CUA | Urban Developer | e-Water |
| SAD | 07 | AP | SWMT_Storm Water Managment Tool | WaND |
| SAD | 08 | AP | COFAS_Evaluación Multicriterio | SWITCH |
| SAD | 09 | AP | HYDROPOLIS_Adaptative Decision Support System ADSS | DayWater |
| SAD | 10 | AP | Aqua Cycle_Modelización del CUA | e-Water |
| SAD | 11 | AP | MUSIC v5.1 | e-Water |
| SAD | 12 | AR | SENATWAT_Selection Tool for Natural Wastewater Treatment Systems | SWITCH |

**BdD: SAD (SISTEMAS DE AYUDA TOMA DE DECISIONES)** **SAD-xx/Acrónimo**

| **Nombre de la Herramienta** | **Acrónimo** |
|---|---|
| Objetivo | Fines a los que responde. |
| Aplicaciones | Casos de estudios y ámbitos de trabajo para los que resulta de utilidad. |
| Resultados | Conjunto de datos de salida en diferentes formatos que se obtienen de la aplicación de la herramienta a los casos de estudio. |
| WEB | Enlace a los recursos en línea vinculados a la herramienta, incluida la descarga de la aplicación si estuviera disponible. |
| | IMAGEN DE LA INTERFACE DE LA HERRAMIENTA. |

# Data, Information & Knowledge for Water Governance in the Networked Society

## (Task 3-2: web tools/key water data)

- Deliverable 3.1: Key Data & Information requirements in the context of current debates on water management
- International Conference (June 9-11)
  - Four thematic areas
  - 15 speakers from academia, public administrations, private businesses and the non-profit sector
  - 80 participants from 9 countries, including SWAN researchers, speakers, invited experts and water practitioners

# Natalia Limones stay at UMI: Jan- Mar 2014

(Task 3-3: Collaboration with WP1, WP2 and WP4)

## Scientific tasks during the three months

- Developed papers based on her doctoral dissertation (def. June 2013) about hydrological drought modeling.

- Collaborated with Aleix Serrat-Capdevilla (WP1) to apply the IESP drought index to rainfall in Africa → **Paper in progress** focused on developing a proper rainfall database anchoring near real-time products with historical long term datasets.

# Natalia Limones stay at UMI: Jan- Mar 2014

## (Task 3-3: Collaboration with WP1, WP2 and WP4)

### Scientific tasks during the three months

- Participated in weekly Wednesday SWAN meetings → progress of the *Tucson Basin case study*
- Combined the study of groundwater in the area (for the T.B.C.S.) with its use for mining: analysis of groundwater metabolism (flows and their context) of the Tucson (Rosemont) copper mines.
- Attended some Water Resources and Policy Group biweekly meetings organized by Prof. Christopher Scott at the Udall Center of the UofA. The meetings seek to raise interdisciplinary integration between students.

## Nuria Hernández-Mora

## Deliverable 2: Water policy evaluation: A critical review of the WFD implementation process

**Paper 1**: The use of markets for the allocation of scarce water resources: A critical review of the Spanish experience with the Tajo-Segura water markets

- To be submitted in July 2014 to Ecology & Society

**Paper 2**: Information and communication technologies for open water governance: Transformation or consolidation of existing power structures for water management in Spain

- Proposal submitted to Water Alternatives special issue (co-authored with Violeta Cabello, Leandro del Moral & Lucia de Stefano). To be submitted by December 2014 if accepted.

# Task 3-4: Dissemination activities

- http://grupo.us.es/giest/

2014

- PITA LÓPEZ, MARÍA F.; DEL MORAL, L.; PEDREGAL, B.; LIMONES, N.; HERNÁNDEZ-MORA, N. (2014): "Nuevos paradigmas en la gestión de recursos y riesgos hídricos: datos e información necesarios para una Gestión Integrada del agua". *Boletín de la Asociación de Geógrafos Españoles*. Nº65-2014 , Pp: 519-542, ISSN: 0212-9426

- WILLAARTS, B., M. BALLESTEROS Y N. HERNÁNDEZ-MORA (2014) "Ten years of the Water Framework Directive in Spain: An overview of the ecological and chemical status of surface water bodies" in Martínez-Santos P., Aldaya M.M. & Llamas MR (eds), *Integrated Water Resources Management in the 21st Century: Revisiting the paradigm*, CRC-Press, pp: 99-120.

- LIMONES RODRÍGUEZ, N. (2014): "Hydrological drought in the Spanish mediterranean domain. Proposal of implementation of the IESP index on runoff datasets". *Boletín de la Asociación de Geógrafos Españoles*. Volumen: 64. Pp: 549 – 555. ISSN: 0212-9426.

- DEL MORAL, L. & D'O, A. (2014): "Water governance and scalar politics across multiple-boundary river basins: states, catchments and territorial powers in the Iberian Peninsula", *Water International*, vol. 39, num. 3, 333-347.

- DEL MORAL, L. , PITA, M.F., PEDREGAL, B. , HERNÁNDEZ-MORA, N. and LIMONES, N. (Expected 2014) "Current paradigms in the management of water: Resulting information needs", proceedings of the european summer school on the geography of water: *Progress in water geography — Pan-European discourses, methods and practices of spatial water research*, University of Tartu Press.

# Task 3-4: Dissemination activities

- HERNÁNDEZ-MORA, N., L. DEL MORAL, F. LA ROCA, A. LA CALLE, Y G. SCHMIDT (2014) "Interbasin water transfers in Spain. Interregional conflicts and governance responses", in: *Globalized water: A question of governance*, G. Schneider-Madanes (ed). Dordrecht, Springer. Pp: 175-194.

2013

- MORAL ITUARTE, L. y A. DO O (2013) "**A**ctualización del debate sobre la cuenca hidrográfica y las escalas de la gestión del agua. Reflexión desde la experiencia ibérica", Actas del *VIII Congreso Ibérico de Gestión y Planificación del Agua*, Lisboa, 5-7 de Diciembre de 2013. ISBN: 978–989–640–160–3

- LIMONES RODRÍGUEZ, N., DÍAZ CUEVAS, P., MARZO ARTIGAS, J. (2013): "El inventario de los recursos hídricos en la Cuenca. Tratamiento del tema en la planificación oficial vigente". *Actas del VIII Congreso Ibérico sobre Gestión y Planificación del Agua*. Lisboa. 5 – 7 Diciembre 2013. ISBN: 978–989–640–160–3.

- MADRID, C., CABELLO, V., KOVACIC, Z. (2013): "Analizando el metabolismo hídrico de los socio-ecosistemas: fundamentos teóricos y metodológicos", *Actas del VIII Congreso Ibérico sobre Gestión y Planificación del Agua*. Lisboa. 5 – 7 Diciembre 2013. ISBN: 978–989–640–160–3

# Task 3-4: Dissemination activities

- VILLARÍN CLAVERÍA, M.C., CAMARILLO NARANJO, J.M., (2013): "Factores que intervienen en el consumo doméstico de agua en las viviendas unifamiliares del Municipio de Sevilla. Estudio a Microescala". *Actas del VIII Congreso Ibérico sobre Gestión y Planificación del Agua*. Lisboa. 5 – 7 Diciembre 2013. ISBN: 978-84-938966-6-9.

- CABELLO,V., SALMORAL, G., SEGURA, S., BOYANOVA, K., SERRAT-CAPDEVILA, A., BICCA, D., YANG, Z., POUPEAU, F. (2013): "Transdisciplinary Approach For Sustainable Water Action". VIII Iberian Congress on Water Management and Planning: Change of plans: Critical analysis of the first European water cycle planning and expectation of common plans for Spain and Portugal in 2015. Lisboa (Portugal). Web: http://www.congresoiberico.org

- LIMONES RODRÍGUEZ, N. (2013): "El estudio de la Sequía Hidrológica en el Mediterráneo Español. Propuesta de aplicación del índice estandarizado de Sequía Pluviométrica a las aportaciones Hídricas". *Fondo digital de tesis doctorales de la Universidad de Sevilla*. Disponible en red: [ http://fondosdigitales.us.es/tesis/tesis/2034/el-estudio-de-la-sequia-hidrologica-en-el-mediterraneo-espanol-propuesta-de-aplicacion-del-indice-estandarizado-de-sequia-pluviometrica-las-aportaciones-hidricas].

- HERNÁNDEZ-MORA, N. Y L. DE STEFANO (2013) Los mercados informales de agua en España: Una primera aproximación. En: A. Embid Irujo (dir), "Usos del agua. Concesiones, autorizaciones y mercados del agua", Thomson-Reuters, Cizur Menor, pp. 375-407.

- PITA LÓPEZ, M.F., LIMONES RODRIGUEZ, N. Y MARZO ARTIGAS, J. (2013). "Las condiciones meteorológicas que generan la inundación". *Sevilla, la ciudad y la riada del Tamarguillo (1961)*. Editorial Secretariado de Publicaciones de la Universidad de Sevilla. ISBN: 978-84-472-1486-0.

# Work Program for June – December 2014

Complete Water Alternatives Special Issue

Continue with the WFD implementation critical review (Deliverable 3.2)

Collaboration with other Work Packages

Planned stays at UMI: Expected calendar

## Special Issue in *Water Alternatives* (Task 3.2 & 3.3)

- Focuses on two thematic areas: "Power, information and the policy process" & "Polycentric information for water governance"
- 56 proposals received from 20 different countries
- Expected publication date: May 2015
- Belén Pedregal, Leandro del Moral and Nuria Hernández-Mora, Guest Editors
- SWAN funding for open access publishing

# Planned stays at UMI: Tucson basin case study

- Participation of USE team in November progress meeting in Tucson
- Violeta Cabello: November 2014 - June 2015
- Natalia Limones: October –November 2014
- Alba Ballester: November 2014 – March 2015
  - Analyze the role of public participation in informing flood risk policies more environmentally friendly and enhance flood-related ecosystem services.
  - Some questions:
    - What type of participatory processes have been developed for flood risk management in other areas?
    - Is there a potential for collaboration on identification of flood – related ecosystem services and their potential enhancements through alternative flood policies?

# Links with other partners and work packages

"With WP1, collaboration will be on integrative models under climate change scenarios. This activity will encompass: diagnosis of water risks, simulation of water demand behavior under different climate scenarios, identification of the appropriate actors and interlocutors for the risk management process.." (p. 11/30, DOW)

1. Drought index implementation through satellite precipitation data (WP3/WP4)

   MªFernanda Pita, Juanma Camarillo and Natalia Limones, University of Seville

2. Participatory capacity building for flood mitigation (WP1) & WFD-Related public participation processes (WP2)

   Alba Ballester, Autonomous University of Barcelona

3. Water use & water banking in the Tucson basin (WP1). Continuing the collaboration with the case study.

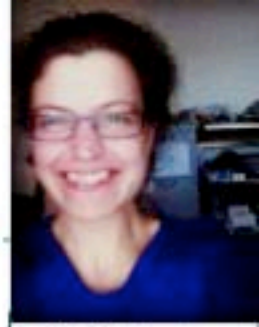
   Violeta Cabello & Nuria Hernández-Mora, University of Seville

# Thank you for your attention

## University of Seville SWAN Team



# II.2. Participatory capacity building for flood mitigation (WP1) [& WFD public participation processes (WP2)]



A. Ballester
Autonomous
UAB & FNCA

## DOCTORAL RESEARCH WORK

- The need and the potential of social capacity building for the adaptation and mitigation of risks is a key issue in natural risk management. The EU Floods Directive (2007) has established obligations for PP in its implementation.
- The principal aim of this project is to explore how public participation can contribute to develop social capacities related to floods hazard. Two case studies in Ebro river basin (Spain): analysis of public participation process on flood risk management (2009-2011) in Arga and Aragón rivers (Navarra) & design and implement a public participation process on flood risk management in the Ebro river (Ribera Alta del Ebro-Aragón).

## PROPOSAL FOR POSSIBLE SWAN COLLABORATIVE RESEARCH

- Analyze the role of public participation in informing flood risk management policies that are less costly, more environmentally friendly and enhance flood-related ecosystem services.
- Some questions:
  - What type of participatory processes have been developed for flood risk management in other areas?
  - Is there a potential for collaboration on identification of flood – related ecosystem services and their potential enhancements through alternative flood management policies?