

USE SWAN eNEWSLETTER

Latest news on University of Seville SWAN team

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Networking, collaboration and mutual learning opportunities between teams, stakeholders and participating research centers involved are essential aims of the SWAN project.



The research leading to these results has received funding from the European Community's Seventh Framework Programme FP7/2007-2013 under grant agreement n° 294947 FP7-INCO-2011-7

Research stays of the USE SWAN Team members in the UMI Center (Tucson, AZ)

The SWAN project is coordinated by the French CNRS (Centre National de la Recherche Scientifique), that created an International Research Centre (UMI "Water, Environment and Public Policy") in collaboration with the University of Arizona in Tucson in 2008. Through SWAN, the UMI aims to broaden its current activities from a bi-national focus to one that incorporates ideas, disciplines and methods from other European SWAN partners.

Networking, collaboration and mutual learning opportunities between participating teams and research centers are essential to the SWAN project. This approach is reinforced through bi-annual project meetings and the promotion of research stays at the University of Arizona of European researchers and SWAN project members.

During the 2012-2013 academic year several members of the USE SWAN team spent time at the University of Arizona. This second issue of the USE SWAN eNewsletter presents the main objectives, developments and achievements of these research stays and the progress made toward the development of a SWAN transatlantic collaborative research framework.

Additionally, other activities carried out by the group members, as well as the outlook for future assignments or events associated with the project is presented.

Planning is underway for the SWAN **International Conference on Key Water Data and Information Requirements for Emerging Water Management Models** that USE SWAN Team is organizing in Seville in June 2014. The goal of this international conference is to build on the results of the January 2013 Workshop ([USE SWAN eNewsletter 1](#)) and advance on knowledge, experience and proposals on the topic of information and data generation, dissemination and applicability, in the context of the current and evolving water management paradigm.



María C. Villarín holds a BS in Geography, and MS in GIS and Environment, and in Territorial Management and Local Development from the University of Seville. She is currently a PhD candidate at the Department of Human Geography of the University of Seville. Her dissertation is titled: "*Factors explaining the urban-household water consumption in the city of Seville*".

She has worked in EMASESA, the Municipal Water Supply and Sanitation Agency in Seville.

She participated in the European IP-Seminar on Geography of Water.

Research stay of PhD candidate **María C. Villarín Clavería**: Building links in urban water research

September 2012 – December 2012

María Villarín's visit took place when the SWAN project was in the initial phase. During her stay, the first meetings that gave shape to the SWAN project took place at the UMI. During these meetings, partners approached positions on specific case studies for all the researchers involved in SWAN.

She had the opportunity to present her PhD research in an open seminar entitled: *Factors explaining domestic demand for water. Microscale Study in Seville*. The chance to receive valuable feedback and suggestions in this seminar and throughout her stay from people with similar research interests allowed her to make significant progress in her research. This is certainly one of the most significant achievements of her stay in Tucson.

Of particular importance were discussions with SWAN members Graciela Schneier (CNRS), Aleix Serrat and Francina Dominguez (University of Arizona, UA), whose research is closely related to María's. As a result she studied the factors involved in urban water consumption in other cities, focusing on a comparison between Tucson and Seville.



Dr. Juan M. Camarillo is an associate professor at the Department of Physical Geography in the University of Seville.

His research is mainly focused on geographical information systems design, drought monitoring, spatial database modeling and spatial pattern analysis for climatic variables.

He has participated in different research projects for the Environmental Agency of Andalusia, the Institute of Cartography of Andalusia and private consulting companies.

Research stay of **Dr. Juan M. Camarillo Naranjo**: Launching the collaborations

November 2012- December 2012

Dr. Camarillo's research visit was instrumental to accomplish several crucial tasks for the initial phases of the SWAN project, specially related to the development of the project website and to advance the collaboration between SWAN partners.

During his stay Dr. Camarillo and other SWAN members met with the website designers to further define requirements and specifications. Progress was made in the structure and the contents of the webpage, which was finally launched in the spring of 2013.

In terms of building collaborative research proposals, Dr. Camarillo met with University of Arizona (UA) SWAN members professor Hoshin Gupta and Dr. Aleix Serrat in order to discuss approaches to analyze the possible application of the IESP drought index (developed in the USE Physical Geography Department) in Africa, where UA SWAN members are working. These conversations resulted in a collaboration agreement between the USE and WP1 UA SWAN teams, which is starting to produce results (see page 5).

In addition to the SWAN activities, he participated in a monthly meeting at the Decision Center for a Desert City in Phoenix. This Center works in the fields of science and policy and their link to IWRM. Around 30 water-management community stakeholders participate in these meetings. The comparison of the themes and perspectives of this debate which those that usually appear in similar debates in the Spanish context was very useful.

Research stays of PhD candidates Violeta Cabello Villarejo and Sergio Segura Calero: Setting up a interdisciplinary case study in Tucson

Violeta → March 2013 – July 2013

Sergio → May 2013 – August 2013

During her stay, Violeta Cabello worked at the Spatial Modeling and Regional Economics Laboratory of the Faculty of Geography, under the supervision of Dr. Sandy Dall'erba. This group is specialized in spatial statistical analysis using *Geoda*. Violeta learned to apply this tool to her data from irrigation communities of the Andarax River in Almería (case study of her PhD). She also gave a seminar on a topic related to her PhD dissertation: "*Societal metabolism of water in rural systems*" at the Vincent and Elinor Ostrom Workshop in Political Theory and Policy Analysis at the University of Indiana-Bloomington

Sergio Segura was interested in contacting experts in Comprehensive Planning in the U.S. He conducted a thorough literature review and consulted relevant US and Arizona legislation. He interviewed planning staff at the City of Tucson and Pima County, as well as other experts to reinforce the fundamentals of his research.

In addition to the work they conducted in relation to their doctoral dissertations, Violeta and Sergio were active members of the "Friday meetings", a weekly gathering of SWAN researchers and faculty from the University of Arizona and other partner institutions, as well as other researchers interested in the collaborative and trans-disciplinary approach that was being developed. The first product of this collaboration was the presentation of a poster with the results of their efforts at the third SWAN Progress Meeting in Tucson in late April.

An important outcome of the Friday meetings has been the development of a framework for a common interdisciplinary work that will serve as the basis for scientific collaboration among the SWAN students and scholars and the development of a common SWAN case study in Arizona. The poster is also serving as the basis for a methodological paper that documents SWAN's transdisciplinary collaborative framework, and attempts to provide an innovative and holistic approach to analyzing the complex dynamics between society and its physical environment.

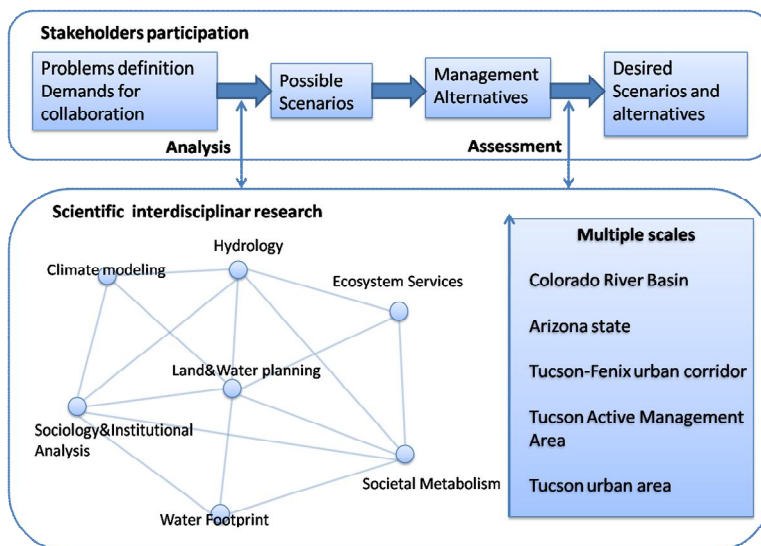


IMAGE: Approach for the case study Tucson basin developed in the Friday meetings.



Violeta Cabello is an Environmental Scientist. She holds an MS in Applied Ecology (Halmstad University, Sweden) and another MS in Integrated Watershed Management (University of Granada, Spain). Her PhD focuses on the Multi-Scale Integrated Analysis of Societal and Ecosystems Metabolism (MuSIASEM) approach to study water use in semi-arid Mediterranean river basins. She studies the complex interaction between socio-economic and ecological processes and aims to develop methodologies to assist participatory multi-criteria evaluation of sustainability of water use.

Since February 2013, she is part of the Executive Board of the Spanish Ecological Economics Association.



Sergio Segura holds a BS in Geography and he obtained his MA in Territorial Management and Local Development, and also his Major in Economic, Demographic And Social Statistics at the University of Seville. He is a PhD candidate funded with a scholarship from the Spanish Ministry of Education. His dissertation looks at spatial planning (monitoring mechanisms and evaluation tools) and integrating river basin planning and spatial planning.

He has participated in the European IP-Seminar on Geography of Water: Sustainable water policies in Europe, during the last three years.

The stays in pictures

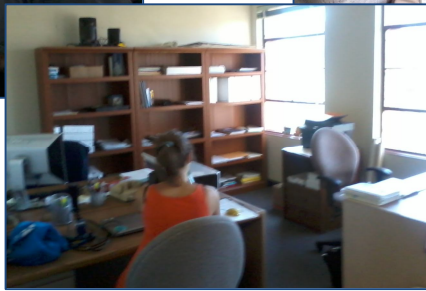
Permanent seminar held



Friday meetings



Second SWAN Progress Meeting in April 2013



Office at the UMI - CNRS

But there was also time for enjoying the USA!



Other recent activities carried out by USE SWAN TEAM

Collaboration with SWAN WORK PACKAGE 1: "Water resources sustainability"

In recent months, the USE SWAN Team prospectively analyzed the **possibility of applying the Pluviometric Drought Standardized Index (IESP) to regions with scarce rainfall data**, specifically to rainfall in Africa, in a **collaborative effort with WP1**.

Initially we considered using the database PERSIANN because it is widely used by WP1. *PERSIANN-GCCS* is a Global high-resolution precipitation software developed by the University of California IRVINE, whose data are estimated from Remote Sensing Information (<http://chrs.web.uci.edu/persiann/>). Prospectively, before applying the methodology to other regions, and in order to calibrate the accuracy of PERSIANN data, we compared PERSIANN daily data for Andalusia with those recorded through the physical rainfall monitoring network, already validated and which is part of the WIS "SISTEMA CLIMA", developed by USE SWAN Team.

For this task, we have linked the two daily databases and have found that the quantitative differences are too high, especially in the days when rainfall is higher and in the areas where there is greater variability.

The reasons that might lead to this big difference could be:

- a) The satellite does not model properly in a climate as variable as the one in Andalusian.
- b) PERSIANN data provided for Andalusia are improperly geo-referenced and incorrectly linked to rainfall stations.

The limitations encountered with the PERSIANN data encouraged us to use a different database to test whether the IESP index is useful for characterizing drought in Africa. The selected datasets are not as complete as PERSIANN but data is measured instead of modeled, to avoid initial complications.

The index seems to work properly and without generating artifacts in Africa and it allows progressively the addition of new series to refine the assessment of the behavior of drought in different climates of the continent.

As PERSIANN and other similar products are currently being improved, the USE SWAN Team will try using the index with the improved data in order to take advantage of their total spatial coverage.

Participation in the EPI-Water Project Workshop and the Royal Geographical Society Annual International Conference

One of the tasks of the USE-SWAN team is to conduct a **comparative analysis of the Water Framework Directive implementation process in Europe, with references and comparisons to similar debates in the USA**. Research about it has already started and in June 2013 the USE SWAN Team member Nuria Hernández-Mora participated in the EPI-Water Project Workshop: "Economic instruments for water management in Spain" (<http://www.feem-project.net/epiwater/>), presenting an analysis of existing informal water markets in Spain and their implications. This work is the result of a collaboration with Dr. Lucia de Stefano, from the Water Observatory of the Marcelino Botín Foundation.

An updated and expanded version of that work was also presented at the UK Royal Geographical Society Annual International Conference, held in London in late August, 2013. USE-SWAN Team members presented a paper entitled "Commoditization processes and debates on water allocation. A case study on formal and informal water markets in Spain", in the context of a special session on Critical Geographies of Water, organized by SWAN partner Dr. Chad Staddon, from the University of West England.

About SWAN

SWAN (Sustainable Water Action): Building Research Links between EU and US, is a four-year International Cooperation Project granted by the European Commission (FP7-INCOLAB -2011).

The project promises to strengthen European research capacity in the USA, promote competitiveness of European research and industry while also informing and involving policy-makers and the general public.

SWAN Consortium & Contact Information

- ❑ Centre National de la Recherche Scientifique, France.
- ❑ National Institute of Geophysics, Geodesy and Geography; Bulgarian Academy of Sciences (BAS-NIGGG).
- ❑ UNESCO-IHE Institute for Water Education.
- ❑ Universidad de Sevilla; Departments of Geography.
- ❑ University of Arizona; Department of Hydrology and Water Resources.
- ❑ University of the West of England, Bristol; The Bristol Group for Water Research at UWE, Bristol (BGWR).



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Forthcoming Events

The SWAN "International Conference on data, information and knowledge for water governance in networked societies" will be held in Sevilla on June 9-11 2014, followed by the Fourth SWAN Progress Meeting (June 12-13). The conference will be organized around three main topic areas:

1. **Power, communication and the policy process.**
2. **Key debates on water management models/paradigms.**
3. **Polycentric information for water governance: Generation, quality control and sustainability.**
4. **Key issues in information visualization, translation to different audiences and dissemination.**



SEVILLE AT NIGHT
 Images by: tripadvisor.es



Grupo de Investigación Estructuras y Sistemas Territoriales

More information about the USE SWAN Team can be found at the web page of the G.I.E.S.T. Research Group:

<http://grupo.us.es/giest/>

SWAN web page:

<http://swanproject.webhost.uits.arizona.edu/>