MILANO 2015

Feeding the planet, energy for life

Wednesday, 17June 2015 - From 09:30 to 13:00

Location: EXPO - EU Pavilion (tbc)

INTRODUCTION

One of the more immediate effects of Climatic Change is the increasing water scarcity in many regions of the World, with negative consequences for food production. In this scenario, population growth, demographic changes and urbanization represent the most pressing challenges for agriculture, which in many areas relies on fresh water supply.
By 2025, it is estimated that half of the world's population will be living in water-stressed areas. Already now, most of the European and African countries are using an increasing amount of the available fresh water for irrigation, to cope with the increasing demand for food. However, the current intensive irrigation practices pose a series of problems, such as salinization and soil erosion that need to be weighed against the benefits, the first of which is the increased productivity per hectare.
Wiser and more efficient use of water in agriculture is becoming a strategy of paramount importance for food security. Different options and alternatives for water sources to be used for irrigation need to be explored, to decrease the unsustainable pressure on groundwater extractions.
Climate change is already affecting water availability in the most climate-sensitive European and African regions, and result in greater fluctuations in available and harvested rainwater. Better management of fresh water resources, as well as innovative tools and techniques, are needed to improve water use efficiency at farm level and ensure food security.

DESCRIPTION OF THE EVENT

Open workshop

The workshop target audience is composed by agriculture and water relevant stakeholders, such as researchers, irrigation specialists and companies, water basins managers, policy makers, as well as farmers and the general public attracted by the subject.
The overall common goal of the six projects presented is the improvement of water monitoring, water management and the efficient use of fresh water in European and African irrigated agriculture.
One speaker from each project will present the activities carried out and will highlight the main results obtained and gaps identified in the course of their projects.
After each speaking session the floor will be open for a moderated discussion with the audience.
Videos produced by some of the projects will be broadcasted in TV screens outside the room, to attract the attention of the EU pavilion visitors (tbc).

Workshop Title: Coping with climate change and water scarcity in Africa and Europe: improving monitoring and water use-efficiency in agriculture

Main aim: Dissemination event. Presentation of activities and results of selected EU-funded projects addressing water scarcity and water-use in crop production

Target audience: Stakeholders and general public

Projects: CLIMAFRICA, WAHARA, EAU4FOOD, MARS, GLOBAQUA, FIGARO

DRAFT AGENDA

- 09:30 – Welcome & Introduction, **Massimo Burioni** *(DG Research & Innovation, European Commission)*
  - **Africa session**
- 09:40 - **Prof. Riccardo Valentini**, CLIMAFRICA coordinator *(UNITUS, IT)*
- 10:05 - **Dr. Cecilia Borgia**, WAHARA partner *(MetaMeta, NL)*
- 10:25 - **Dr. Jochen Froebrich**, EAU4FOOD coordinator *(WU, NL)*
- 10:50 - First round of Q&A (Moderator, tbc)
- 11:00 - Coffee break
  - **Europe session**
- 11:15 - **Prof. Dr. Daniel Hering** (tbc), MARS coordinator *(UDE, DE)*
- 11:40 - **Prof. Damià Barceló**, GLOBAQUA coordinator *(IDAEA-CSIC, ES)*
- 12:05 - **Dr. Lior Doron** (tbc), FIGARO coordinator *(Netafim, IL)*
- 12:30 - Second round of Q&A (Moderator, tbc)
- 12:40 - Conclusions (by the Moderator, tbc)

SHORT DESCRIPTION OF THE PROJECTS

CLIMAFRICA – Improving our understanding of climate trends and impacts in Africa

ClimAfrica is conceived to respond to the urgent international need for the most appropriate and up-to-date tools to better understand and predict climate change, assess its impact on African ecosystems and population, and develop the correct adaptation strategies.
The African continent is already under a heavy pressure from climate stresses and due to its current low adaptation capacity, it is highly vulnerable to the impacts of climate change. Therefore stakeholders need the appropriate and most up-to-date tools to better understand and predict climate change, assess its impact on African ecosystems and population, and evaluate and undertake the correct adaptation strategies. In this respect there is an urgent need to i) develop improved climate predictions on seasonal to decadal climatic scales in Sub-Saharan Africa, ii) evaluate climate change impacts on water and agriculture, iii) improve early warning systems from short to medium-long term predictions and iv) propose new and feasible adaptation strategies, especially fitted for the weakest communities.
Project website: www.climafrica.net

WAHARA - Water Harvesting for Rainfed Africa

Water harvesting (WH) presents highly adapted, flexible, easy to understand and implement, low-cost solutions to the productivity, climate adaptation and water security challenges, primarily by building water buffering capacity. WH technologies include centuries-old systems developed by local knowledge but also innovative new approaches. Together, these approaches hold great potential to boost economic development and sustain livelihoods in rainfed Africa. However, to unlock this potential, and despite the fact that WH has over the years received substantial interest from the research community, there is still considerable need for further advancement of knowledge.
WAHARA will contribute to fill the knowledge gaps, as it will study local WH solutions in 4 study sites throughout Africa from a transdisciplinary perspective that takes into account not only bio-physical aspects, but also socio-economic aspects and political conditions. The project will work closely together with local stakeholders, to make sure that selected solutions are really meeting their needs. The effectiveness of WH technologies will be assessed under different environmental and socio-economic conditions, and will be modeled for various scenarios, considering drivers such as population growth, urbanisation and climate change. By combining results from the 4 sites, the potential of WH for the whole of Africa will be assessed.
Project website: www.wahara.eu

EAU4Food - European Union and African Union cooperative research to increase Food production in irrigated farming systems in Africa

To facilitate the successful adoption of innovations in irrigated agriculture in Africa, EAU4Food utilizes a true transdisciplinary approach, which involves the active participation of all stakeholders, including farmers, water managers, retailers, policy makers, NGOs, in all relevant disciplines, like biophysics, economy, sociology and agronomy. The project develops, tests and implements locally-appropriate, robust and affordable innovations for improved farm performance in irrigated areas, building on

existing and traditional practices and irrigation strategies driven by farmers and key stakeholders.
EAU4Food is executed in four irrigated zones in Africa representing the Southern hemisphere (Mozambique and South-Africa), the Northern hemisphere (Tunisia), West Africa (Mali) and East Africa (Ethiopia), to fully benefit from the potential of cross distributing promising strategies and innovations. At each site, key indicators, farm strategies and biophysical parameters are monitored for identification of current constraints to food production, and to evaluate agro-ecological and socio-economic impacts of improved practices and/or innovations after implementation.
Project website: www.eau4food.info

MARS - Managing Aquatic ecosystems and water resources under multiple stress

The aim of MARS is to investigate how multiple stressors affect rivers, lakes and estuaries. Formerly, rivers and lakes were impacted by strong, single stressors, e.g. by organic pollution or acidification, now replaced by a complex mix of stressors resulting from urban and agricultural land use, water power generation and climate change.
In field experiments address the effect of extreme climate events such as heavy rainfall, heat waves and water scarcity, and the effects of environmental flows.
In 16 river basins throughout Europe MARS models the effects of water scarcity and flow alterations (Southern Europe); hydrology, morphology and nutrient stress (Central Europe); and hydrology and temperature alterations (Northern Europe).
Using Europe-wide data sets the project will identify relationships between stress intensity, status and service provision, with a focus on large transboundary rivers, lakes and fish as direct providers of ecosystem services.
The results will help implementing European directives: the Water Framework Directive, the Floods Directive and the Blueprint to Safeguard Europe's Water Resources.
Project website: www.mars-project.eu

GLOBAQUA - Managing the effects of multiple stressors on aquatic ecosystems under water scarcity

The main aim of GLOBAQUA is to achieve a better understanding on how current water management practices and policies could be improved by identifying their main drawbacks and alternatives.
GLOBAQUA WILL assess the effects of water scarcity on aquatic ecosystems by focusing on six river basins (Ebro, Adige, Sava, Evrotas, Anglian and Souss Massa). These basins encompass a rich set of socio-ecological conditions and a wide geographic coverage, and focus on a specific set of stressors to illustrate different management scenarios.
Project website: www.globaqua-project.eu

FIGARO - Flexible and Precision Irrigation Platform to Improve Farm Scale Water Productivity

The project aim is to increase water productivity in major water-demanding crops and develop a cost-effective precision irrigation platform. FIGARO focuses on significantly reducing the use of fresh water on farm level through developing a cost-effective, precision irrigation management platform. The European-wide consortium aims to develop a holistic and structured precision irrigation platform, which will offer farmers flexible, crop oriented

management tool with DSS (Decision Supporting System) module to optimize irrigation and fertilizers dosing.
The project will also contribute to the sustainable use of natural resources and adaptation of agriculture to climate change.
Project website: www.figaro-irrigation.net