Joint Seminar

Managing water and energy for sustainable food systems: How can the Italian research community contribute?

30 November 2017 in the Iran room (B-016) at FAO HQ
9.00 AM – 12.30 PM

Objectives

The workshop contributes to the Global Framework for Water Scarcity in Agriculture (WASAG), which was launched during COP23 in 2017. It currently has thirty five partners from research institutions, think tank organizations, global partnerships, the United Nations and international agencies that work collectively on the issues of water scarcity.

The aim of the seminar in particular is to showcase the Water-Energy-Food Nexus-related work of the participating Italian research institutions and to discuss how this work can support progress towards achieving the Sustainable Development Goals (SDGs), specifically Goal 2 on Zero Hunger, Goal 6 on Water, Goal 7 on Energy, and Goal 12 on Responsible Consumption and Production.

During the discussion, researchers and practitioners will explore how Nexus-related research can become more relevant to the international development context.

Background

The concept of the Water-Energy-Food Nexus has featured prominently in the international debate on sustainable development and natural resources management. Academia has been especially interested in the subject, with researchers and academics exploring the theoretical foundations of the concepts and analysing case studies of so-called Nexus interlinkages.

The Nexus concept tackles some of the key challenges of our age: population growth, rapid urbanization, changing diets and economic development are just some of the factors driving increased demand for water, energy and food. Feeding a global population expected to reach 9.8 billion people by 2050 will require a 50 percent increase in food production (compared to 2012 levels). Agriculture is already the largest consumer of the world's freshwater resources, accounting for 70 percent of total global water withdrawals. More than one-quarter of the energy used globally is expended on food production and supply. An estimated 30 percent of global energy consumption occurs along food supply chains.

The Water-Energy- Food Nexus explores the complex interrelationships between water, energy and food systems. At its heart is the recognition that these different resources systems are interdependent: demand for one resource can drive demand for another, and similarly, the cost of one resource can determine the efficiency of production of the others.

Using water to irrigate crops might promote food production, but it can also reduce river flows and hydropower potential. Using water to irrigate bioenergy crops can provide cheap energy and at the same time, increases water withdrawals and may decrease water and land resources available for agricultural production. Converting dryland in irrigated areas can increase food production, but may also result in greater energy uses.

There are already many examples of good practices as well as tools and methods to analysing these interdependencies. Some of these solutions – typically at pilot scale - will be showcased during this seminar by CREA, ENEA and CNR. During the follow-up discussions, we will explore how these solutions can support the development of long-term sustainable solutions that can ensure food security by effectively managing water and using clean energy efficiently, and we will identify opportunities to adjust, elaborate and develop integrated Nexus approaches to soil management, crops improvement, water management and recovery, renewable energy, irrigation systems, water storage, energy efficiency.

Scientific committee

Lucie Pluschke (FAO), Olcay Unver (FAO), Jean Boroto Ruhiza (FAO), Nicola Colonna (ENEA), Patrizia Galeffi (ENEA), Michele Rinaldi (CREA), Mauro Gamboni (CNR). Franco Miglietta (CNR), Federica Rossi (CNR), Filiberto Altobelli (CREA), Alessandro Monteleone (CREA)

Agenda

Time	Activity	Organisation	Facilitator
08:30 - 09:00	*Registration*		
09:00 - 09:10	Opening remarks by **Dr. Ren Wang**, Assistant Director General of FAO's Agriculture and Consumer Protection Department	FAO	**Jean Boroto**, Senior Water Resources Officer, FAO
09:10 - 09:20	Opening remarks by **H.E. Pierfrancesco Sacco**, Permanent Representative of Italy to the UN agencies in Rome	Permanent Representation of Italy to the UN agencies	
09:20 – 09:35	Global Framework on Water Scarcity in Agriculture by **Olcay Unver**, Deputy Director of the Land and Water Division of FAO	FAO	
09:35 –09:50	Water, food and nutritional security, **Ophélie Hémonin**, CFS Secretariat	CFS	
09:50 – 10:10	*Coffee Break*		
10:10 – 10:25	Bioenergy and Water: the GBEP experience **Uwe Fritsche,** AG6 Bioenergy and Water, GBEP	Global Bioenergy Partnership (GBEP)	**Jean Boroto**, Senior Water Resources Officer, FAO
10:25 – 10:40	Eco-efficiency approach for optimizing water, energy and fertilizers inputs in agriculture, **Mladen Todorović**, Principal scientific administrator of CIHEAM-IAMB	CIHEAM-IAMB	
10:40 – 10:50	**Q&A**		
10:50 – 11:05	NEXUS challenges: research experiences for resilient agri-food chains, **Nicola Colonna**, ENEA	ENEA	
11:05-11:20	Water-Food nexus: Crop water productivity and energy-food interaction evaluated at field/farm level, **Michele Rinaldi**, CREA	CREA	
11:20-11:35	Energy, water and crop yields: Biochar as a sustainable solution, **Miglietta Franco**, CNR,	CNR	
11:35 – 12:00	**Q&A and plenary discussion** on how to move from research to applied work to address the Water-Energy-Food Nexus	Speakers from CIHEAM, ENEA CREA and CNR	
12:00 – 12:10	Concluding remarks by **Olcay Unver**, Deputy Director of the Land & Water Division, FAO	FAO	