



## **EMEG (Euro-Mediterranean Expert Group)**

### **3<sup>rd</sup> EMEG meeting**

#### **“A FRAME FOR A COMPREHENSIVE UNDERSTANDING OF WATER - ENERGY - FOOD NEXUS”**

##### *Rationale*

### **Introduction**

Global projections indicate that demand for freshwater, energy and food will increase significantly over the next decades under the pressure of population growth and mobility, economic development, international trade, urbanisation, diversifying diets, cultural and technological changes, and climate change (Hoff, 2011).

As demand grows, there is increasing competition for resources between water, energy, agriculture, fisheries, livestock, forestry, mining, transport and other sectors with unpredictable impacts for livelihoods and the environment (FAO, 2011).

The problem could be exacerbated by the climate change and its ecological consequences, and by fast changing socio-economic boundary conditions, including global redistributions of wealth and power, as well as changing flows of people, resources and knowledge (Schmidhuber and Tubiello, 2007; Hanjra and Qureshi, 2010).

In this context, the Water-Energy-Food Nexus has emerged as a useful concept to describe and address the complex and interrelated nature of our global resource systems, on which we depend to achieve different social, economic and environmental goals (FAOa,b, 2014).

A nexus approach can support a transition to sustainability, by reducing trade-offs and generating additional benefits that outweigh the transaction costs associated with stronger integration across sectors. Such gains should appeal to national interest and encourage governments, the private sector and civil society to engage.

### **Background**

During the Davos Summit, The Global Risks 2011 report, issued by the World Economic Forum, brought to political attention, and for the first time, the risk correlation between the water, energy and food sectors. Later on, the interdependencies between water, energy and land resources became the focus of many global and regional conferences and meetings held in preparation for the United Nations Conference on Sustainable Development (Rio+20 held in June 2012). In particular, the Bonn 2011 Nexus Conference (held in November 2011), “The Water Energy and Food Security Nexus – Solutions for the Green Economy”, organized by the Federal Government of Germany, was a major milestone to place the nexus perspective on the international agenda.

More recently, the Bonn 2014 conference, "Sustainability in the Water-Energy-Food Nexus", emphasized the need for coherence of cross-sector policy efforts and cross-border cooperation for jointly improved efficiency as a successful strategy to achieve environmental sustainability.

The conference called for the following Actions:

- 1) Responsible governance of natural resources;
- 2) Broad involvement of stakeholders to collaboratively work toward sustainable development;



3) Need to expand financial, institutional, technical, and intellectual resources for nexus research.

### **MedSpring and the Nexus**

MedSpring project is aligned with the ideas, the debate and the engagement on the Nexus expressed in the international fora. In fact, over the last two years MedSpring, engaging the scientific community as well as the civil society, has gained an insight into the Nexus by investigating the relationship between research and innovation and the real needs of the civil society in the frame of the three societal challenges water-food-energy.

Specifically, the main goal of the 1<sup>st</sup> EMEG Meeting (Lisbon, 2013) was to identify research topics leading to results, solutions and market opportunities to enhance sustainable development and create opportunities for new jobs in the region. The work was underpinned by the inputs of the open consultation launched before the meeting and addressed to the civil society (researchers, SMEs, NGOs, citizens... etc.) and WEB communities.

The 2<sup>nd</sup> EMEG Meeting (Sousse, 2014), aimed to identify ways and means to address (or re-address) policy and policy dialogue, particularly regarding objectives and expected impacts, taking into account the current scenarios in Research and Innovation cooperation. This work led to the identification of new (or renewed) objectives and expected impacts of Euro-Mediterranean R&I policy dialogue and cooperation expressed in the following cross-cutting paradigms:

*“Research in water, food and energy in the Mediterranean region has cross-border dimension and can be successfully tackled only in the frame of mutual EU-MPC co-operation with participation on equal footing. Addressing the nexus among water, food and energy to satisfy human needs within the limits of natural resources, implying the development of creative integrated policy and politics.”*

*“Euro-Mediterranean research and innovation policy should be given a clear orientation through a process of generating joint problem awareness, and by participation of stakeholders beyond business. Euro-Mediterranean R&I policy will have to orient the prioritisation of research toward nexus problems, based on sustainability including trans-disciplinarity, integrating science in society, gender mainstreaming, stakeholders co-ownership.”*

These paradigms seem to anticipate the content of the "Call for Action" developed in the Bonn Conference later on.

In January 2015, in Barcelona, an EU-Mediterranean Conference on R&I promoted by MedSpring was held, gathering coordinators of EU-funded project with a focus on water, energy and food. The output of the meeting includes a set of recommendations for joint EU-MPC actions to face the challenges posed by the water-food-energy nexus.

The next 3<sup>rd</sup> EMEG event will focus on the development of a frame for a comprehensive understanding of the water-food-energy nexus. The purpose of this rationale is to describe the methodology used for the analysis and the process leading to the event.



## Objective(s)

The 3<sup>rd</sup> EMEG meeting, according to what required by MedSpring task 2.4, intends to develop a Nexus approach as a new framing for the interdependence of water, energy and food (the societal challenges addressed by MedSpring) and, through a better understanding of the synergies and trade-offs among them, identify the factors research should take into consideration to ensure that demand is met without compromising sustainability requirements.

The meeting will engage in developing a comprehensive, multi-dimensions logical frame, based on a thorough understanding of the interconnectedness of water, energy and food leading to a better Nexus analysis and how it satisfies the sustainability imperatives. The output will be a set of recommendations to support the identification of priorities and guide the EC in the design of ad-hoc initiatives/calls addressing the Nexus.

## Methodological outline

This section provides the methodology for carrying out the EMEG activities.

- a) In preparation to the meeting a preliminary analysis will be carried out by the partners involved in Task 2.2 (April-July 2015). A stocktaking of **Main problems** will be done, based on a drafted list of category-related problems (networking & communication, management and institutional responsibility, financial/human resources & capacity, responsiveness to users' needs) identified during the first and second EMEG meetings, the Barcelona Meeting of the Projects Coordinators Platform (January 2015) and a topic-related literature review..
- b) Subsequently, the main R&I objectives related to the water, energy, food nexus, as emerged in the previous EMEG meetings, will be linked to the above mentioned Main problems. Building on the results of this activity, Nexus Specific Objectives will be identified providing a logic and justified explanation for their identification. They will be related to each Nexus Main Problem. The following step consists in the identification of Actions, both technical and policy related, to fulfil each Nexus Specific Objective..
- c) Definition of a logical frame. EMEG will then develop a multidimensional **logical frame of Nexus Main Problems, Nexus Specific Objectives and Actions** in the EU-Mediterranean area. Experts will work on them in groups, divided according to the societal challenges (W-E-F) and their linkages with the other resources. For each resource (W-E-F) experts will develop a log-frame according to the following table:



Table 1 - Final framework

Nexus Main Problems	Nexus Specific Objectives	Actions
1	1.a specific objective	Action, action
	1.b specific objective	Action, action
2	2.a specific objective	Action, action
	2.b specific objective	Action, action
3	3.a specific objective	Action, action
	3.b specific objective	Action, action
4	4.a specific objective	Action, action
	4.b specific objective	Action, action

The participants are asked:

- To identify Nexus Main Problems, starting from the consideration of the challenges, trends/scenarios in the EU-Mediterranean area. (1<sup>st</sup> day – Exercise 1).
- To define Nexus Specific Objectives, starting from the Nexus Main Problems (1<sup>st</sup> day – Exercise 2).
- To define the Actions (2<sup>nd</sup> day – Exercise 3) for each Nexus Specific Objective. Taking into account the nexus among Water-Energy-Food (WEF), actions can be both technical and policy-related (depending on the type of objectives/expected results)
  - Technical actions
  - Policy/Research & Innovation actions

The Actions will be evaluated considering their effectiveness in satisfying the sustainability imperatives (cohesion, competitiveness, limit throughout).

- d) Overarching recommendations. The 3<sup>rd</sup> EMEG's outcomes will be embodied in **recommendations** to EC, MS/AC, MPC. All the EMEG members will be involved in preparing, selecting and sharing recommendations.
- e) Position Paper. The final document is aimed “to develop an integrated frame for each societal challenge”. The final result will be a comprehensive, multidimensional logical frame of criteria to identify priorities and provide suggestions for complex joint activities of MS, AC and MPC based on an integrated and sustainable approach.

Meeting contents and work will be organized according to the work-flow below.

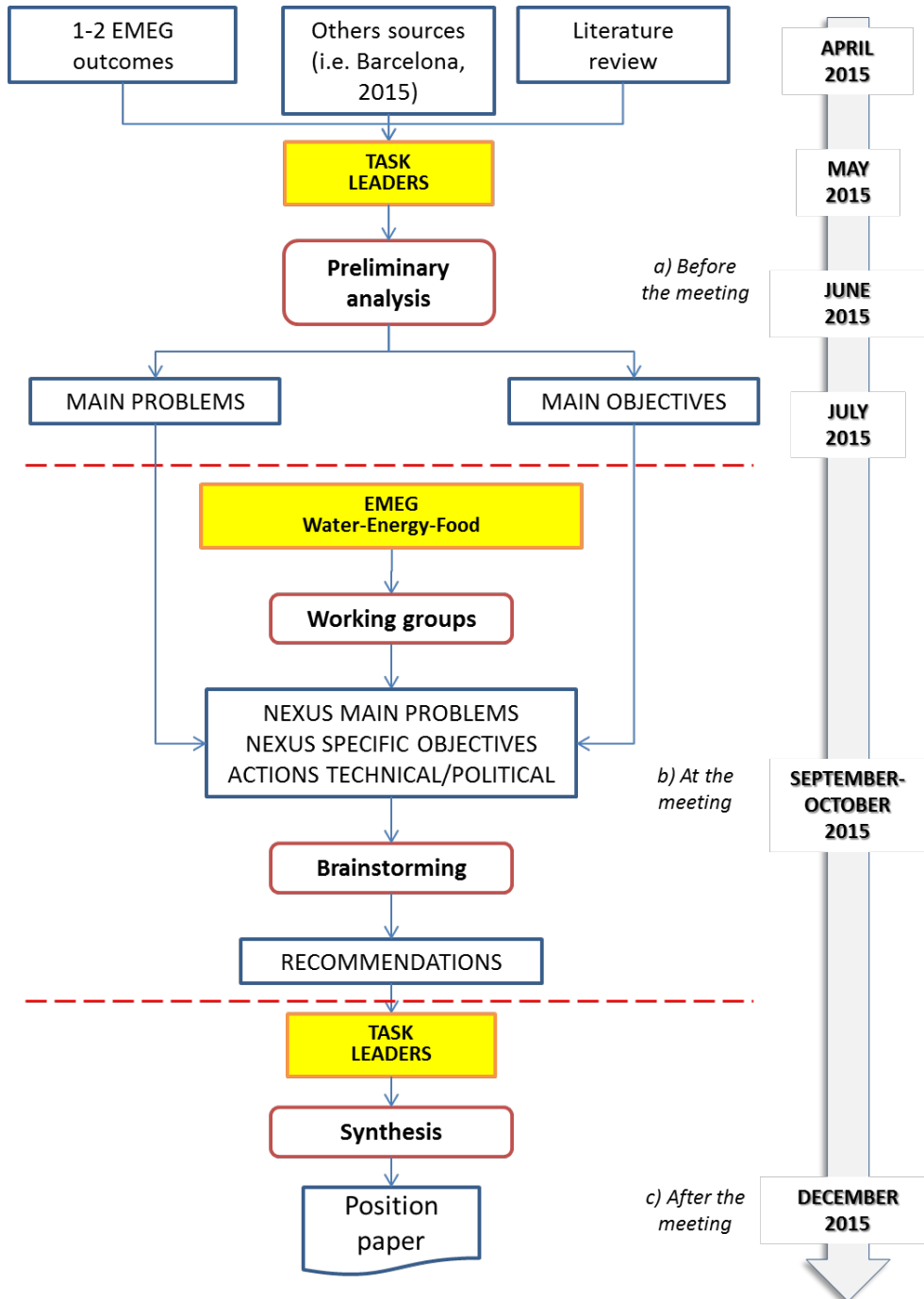


Figure 1 – 3<sup>rd</sup> EMEG methodological approach



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