



## Horizon 2020 Capacity Building/Mediterranean Environment Programme

### *“Best environmental practices in olive mill waste management and new technologies”*

Regional training: 19-21 March 2012, Greece

#### Introduction - *The Horizon 2020 Initiative*

The “**Horizon 2020 Initiative**” aims to de-pollute the Mediterranean by the year 2020 by tackling the sources of pollution that account for around 80% of the overall pollution of the Mediterranean Sea: municipal waste, urban wastewater and industrial pollution.

Horizon 2020 was endorsed during the Environment Ministerial Conference held in Cairo in November 2006 and is one of the key initiatives run under the Union for the Mediterranean (UfM). The H2020 2007-2013 Road-Map focuses on the following four pillars:

- Identification of projects to reduce the most significant sources of pollution.
- Identification of capacity-building measures to help neighbouring countries create national environmental administrations that are able to develop and police environmental laws.
- Use of the EC’s research budget to develop greater knowledge of environmental issues relevant to the Mediterranean and ensure this is shared.
- Develop indicators to monitor the success of Horizon 2020.

H2020 is made up of the following components: monitoring, reporting and research (RMR); investment; and capacity building. Under each component, a project is currently being run. H2020 Capacity Building/Mediterranean Environment Programme (H2020 CB/MEP) is the project aiming at enhancing the capacities to address pollution problems at institutional and society level. In addition, through the H2020 MEP, a Hot Spot Investment Programme (HSIP) for the West Balkans and Turkey - as complementary to the Mediterranean HSIP (MeHSIP) – has been elaborated. The other two projects currently being carried out under the investment and RMR H2020 components are respectively the MeHSIP and the ENPI Shared Environmental Information System (ENPI SEIS).

#### The framework - Horizon 2020 Capacity Building/Mediterranean Environment Programme

Obviously pollution is expected to be substantially reduced through the installation and proper functioning of major infrastructures (e.g. sewage treatment plants), installing pollution reduction technologies in industries, etc. However, this won’t work if institutional and individual capacities are not in place. This is what the H2020 CB/MEP aims to enhance by operating within the existing and developing policy instruments, and supporting the implementation of the commitments undertaken in the framework of the ENP as well as other regional agreements e.g. the Barcelona Convention, while cooperating, coordinating and synergising with all relevant (EU and other) programmes.

#### *Aims and objectives*

The main objective of this project is to support the implementation of Horizon 2020 with a special focus on environmental mainstreaming. It aims to address the following problems:

- low political priority given to the environment;
- insufficient integration of environment in the different sector policies (agriculture, tourism, transport or energy) and lack of inclusion of the different actors from local to international level;
- Insufficient capacities and resources at institutional and civil society level.

More specifically, the purpose is to support the implementation of the Horizon 2020 Initiative Road Map and Work Plan through capacity building and awareness raising activities, and to promote integration of environment issues in other sectors policies.



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## Partners

This project is funded by the European Union and implemented by the National and Kapodistrian University of Athens (NKUA) in consortium with: Mediterranean Action Plan of the United Nations Environment Programme and its Regional Activity Centres and Programmes (UNEP/MAP and its RACs), National Waste Management Agency (ANGEd)/ Regional Solid Waste Exchange of Information and Expertise Network in Mashreq and Maghreb Countries (SWEENet), Umweltbundesamt GmbH – Austrian Environment Agency (AEA), Lebanese Ministry of Energy and Water - the General Directorate of Hydraulic and Electrical Resources (LMoEW), Hellenic Ministry for Environment, Energy and Climate Change, UNESCO-IHE Institute for Water Education (UNESCO-IHE), Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE), Arab Network for Environment and Development (RAED), WWF Mediterranean Programme Office (WWF MedPOL), Association of Cities and Regions for Recycling and Sustainable Resource Management (ACR+), Arab Countries Water Utilities Association (ACWUA).

## Partner Countries

The Partner countries are: Albania, Algeria, Bosnia- Herzegovina, Croatia, Egypt, Israel, Jordan, Lebanon, Montenegro, Morocco, occupied Palestinian territory, Tunisia, Turkey, Syria.

## Course Description - “Best environmental practices in olive oil mill waste management and new technologies”

### Introduction to the training course

This regional training course is organized within the framework of the ENPI Horizon 2020 CB/MEP project. It is organized by the University of Athens and the Regional Activity Centre for Cleaner Production of the Mediterranean Action Plan (UNEP/MAP CP/RAC). Its duration is 3 days and the language of the training course will be English and French. Around 40 participants are expected to attend from relevant public and private entities of all the partner countries (see directly above).

### Target group

The capacity building activity is of an intermediate level and is targeted to:

- Decision makers in the relevant Ministries (environment, agriculture, water, industry, etc.) who are involved in olive mill waste regulation and management.
- University and Research Institute staff in fields related to olive mill waste (and other agricultural products) management and valorisation.
- Representatives of cooperatives and other entities and companies active in the aforementioned sector.

### Learning objective

The Mediterranean is the world’s leader in olive cultivation and olive oil production, consequently suffering also from the environmental impacts of the sector (air, soil and water pollution due to insecticides and other agrochemicals and olive mill waste disposal resulting in considerable pollution of receiving surface and ground waters). However, there has been considerable progress in the techniques available for minimising these negative impacts. Briefly examining other pressures and aspects for sustainable olive cultivation, this training will focus on the waste generation component: **olive mill solid waste and olive mill wastewater**.

The main objectives of the course are thus to strengthen the trainees’ understanding and knowledge on the:

1. Environmental impacts of uncontrolled disposal of olive processing wastes,
2. Legal and institutional frameworks and guidelines in place regulating the management of olive mill wastes,
3. State-of-the-art established and new technologies employed for the management and valorization of olive mill wastes,
4. Relevant research which is in the pipeline with future potential.

### Methodology and Structure

The general structure of the course will be:

- Lectures followed by plenary discussions



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- Case studies
- Workshops
- Presentations by participants

The training hopes to be a pool of Mediterranean “know-how” sharing

*Learning outcomes of the training course*

On completion of this training course, the participants will:

- Have acquired a good understanding of the environmental impacts of olive processing and disposal of olive mill solid waste and olive mill wastewater;
- Be introduced to the relevant EU regulating framework and the status in olive producing non-EU Mediterranean countries;
- Have obtained a better understanding of the actual situation (institutional, legal and economic realities) in the region;
- Enhance their knowledge about good practices in olive mill waste management;
- Be informed on innovative research in the sector;
- Be introduced to certain olive mill waste marketing/opportunities and challenges.

The course will allow sufficient time for clarifications/questions/discussions of emerging topics.

*A preliminary overview of the course is given below:*



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Course schedule/ curriculum			
Day 1: 19 March	Description	Duration	Method/Speaker or Trainer
Session 1	<ul style="list-style-type: none"> <li>Welcome - opening words</li> <li>Introduction of speakers and participants</li> <li>Overview of H2020 CB/MEP</li> <li>Expectations of trainees</li> </ul>	9.00-10.00	Prof. Antonios Calokairinos, Chairman Chemistry Dept., UoA Prof. Michael SCULLOS, H2020 CB/MEP Team Leader Ms. Tatiana HEMA, UNEP/MAP Mr. Frederic GALLO, CP/RAC
Session 2	<ul style="list-style-type: none"> <li>CP/RAC: Working for the Mediterranean environment</li> </ul>	10.00-10.15	Mr. Frederic GALLO, CP/RAC (presentation)
	<ul style="list-style-type: none"> <li>Lessons learned from the "Integrated waste management for olive oil pressing industries in Lebanon, Syria and Jordan" project</li> </ul>	10.15-11.00	Ms. Samar KHALIL, Lebanese Min. of Environment (presentation and discussion)
		<b>Coffee (15mins)</b>	
Session 3	<ul style="list-style-type: none"> <li>Some Effects of Olive Mill Wastewater on Coastal Ecosystems</li> </ul>	11.15-11.45	Ms. Evaggelia T. ANASTASOPOULOU, UoA (presentation)
	<ul style="list-style-type: none"> <li>Institutional, legal and economic realities affecting Olive Mill Waste management in the Mediterranean – Consequences of the change from 3-phases mills to 2-phases mills in Andalusia</li> </ul>	11.45-13.15	Mr. Miguel SOUSA, Andalusian Water Agency, Reg. gov. Andalusia (presentation and discussion)
		<b>Lunch (1 hr)</b>	
Session 4	<ul style="list-style-type: none"> <li>Aerobic and Anaerobic Biotreatment of Olive Oil Mill Wastewater</li> </ul>	14.15-14.35	Prof. Fouad Anesti Daoud HASHWA, Lebanese American University (presentation)
	<ul style="list-style-type: none"> <li>Situation environnementale de l'industrie oléicole en Algérie</li> </ul>	14.35-14.55	Ms. Linda RIZOU BRIBER, Ministère de l'Aménagement du Territoire et de l'Environnement, Algérie (presentation)
	<ul style="list-style-type: none"> <li>Etudes du secteurs des huileries d'olive au Maroc - problématique des Margines et solutions retenues pour le cas du Maroc</li> </ul>	14.55-15.15	Mr. Jamal ABBOD, Ministère de l'Energie et des Mine, de l'Eau et de l'Environnement du Maroc (presentation)
		<b>Coffee (15mins)</b>	
Session 5	<ul style="list-style-type: none"> <li>Process integration for Olive Mill Wastewater treatment: Dos and Don'ts</li> </ul>	15.30-16.15	Prof. Dionissios MANTZAVINOS, Technical Univ. of Crete (presentation)
	<ul style="list-style-type: none"> <li>Implemented technologies for OMW treatment across the Mediterranean basin/The OLEICO+ experience</li> </ul>	16.15-17.00	Prof. Nicolas KALOGERAKIS, Technical Univ. of Crete (presentation)
Day 2: 20 March	Description	Duration	Method/Speaker or Trainer
Session 1	<ul style="list-style-type: none"> <li>Application of Olive Mill Wastewater in olive orchards: An environmentally acceptable and cost effective management method</li> <li>Characterization and treatment for recycling of water used to wash olives</li> </ul>	9.00-11.00	Dr. Kostantinos St. CHARTZOULAKIS, N.AG.RE.F. (presentations)
		<b>Coffee (15mins)</b>	
Session 2	<ul style="list-style-type: none"> <li>High-added value materials production from Olive Mill Wastewater – A technical and economical optimization</li> <li>Triple Helix working groups on best environmental practices in olive oil mill waste Treatment</li> </ul>	11.15-12.15	Assis. Prof. Christakis PARASKEVA, Foundation of Res. and Tech. of Hellas & Univ. of Patras & Assoc. Prof. Vagelis PAPANAKIS, Patras Science Park & Univ. W. Greece (presentations)
		<b>Lunch (1 hr)</b>	
Session 3	<ul style="list-style-type: none"> <li>Energy and geo-environmental applications for Olive Mill Waste</li> </ul>	13.15-14.00	Dr. George M. STAMATAKIS, UoA (presentation)
	<ul style="list-style-type: none"> <li>Pilot scale physicochemical and advanced treatment of Olive Oil Mill Wastewater</li> </ul>	14.00-14.30	Prof. Kadir KESTIOGLU & Assis. Prof. Taner YONAR, Uludag University, Turkey (presentation)
	<ul style="list-style-type: none"> <li>Integrated solutions for olive mill wastewater with sewage treatment plants</li> </ul>	14.30-15.00	Dr. Touma ABOUD, Min. of environmental protection, Israel (presentation)
		<b>Coffee (15mins)</b>	
Session 4	<ul style="list-style-type: none"> <li>Treatment plant for the 2-phase olive kernel</li> </ul>	15.15-16.20	Mr. A. MOCHLOULIS, Perialisi Hellas S.A. (presentation)





	<ul style="list-style-type: none"> <li>• Optimisation de Gestion des margines</li> <li>• Rejet huilleries Tunisie</li> </ul>	<p>16.20-16.40</p> <p>16.40-17.00</p>	<p>Mr. Haikal OUALI, Agence Nationale de Gestion des Déchets, Ministère de l'Environnement, Tunisie (<i>presentation</i>)</p> <p>Mr. Abderrazak MARZOUKI, Ministère de l'Environnement (Direction Générale de l'Environnement et de la Qualité de la Vie), Tunisie (<i>presentation</i>)</p>
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Day 3: 21 March	Description	Duration	Method/Speaker or Trainer
Session 1	• Integrated treatment of Olive Mill Waste	9.00-9.45	<i>Prof. Dimitris VAYENAS, Univ. of Ioannina (presentation)</i>
	• Post-treatment of Olive Mill Waste Water in pilot-scale and full-scale constructed wetlands	9.45-10.30	<i>Dr. Christos AKRATOS, Univ. of Ioannina (presentation)</i>
		<b>Coffee (15mins)</b>	
Session 2	• CP/RAC's activities on olive oil	10.45-11.45	<i>Mr. Frederic GALLO, CP/RAC (presentations)</i>
	• Composting experiences in Andalusia	11.45-12.30	<i>Assis. Prof. Ioannis ZABETAKIS, UoA (presentation)</i>
	• Applied research on Olive Mill Wastewater use in functional aquaculture	12.30-12.45	<i>Mr. Ussama KATTAN, Ministry Of Agriculture, Jordan (presentation)</i>
		<b>Lunch (1 hr)</b>	
Session 3	• Final discussion	13.45-15.45	
	• Course Evaluation		
	• Closing Remarks		
	• Certificates Award		
		<b>Coffee (15mins)</b>	
Session 4	• Departure	16.00	



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