

Session Partnerships: April 11th 15.45 hrs

4s1: The circular food systems network: exploring opportunities for food security by circularity in different regions in the world

A partnership for achieving carbon neutral and resilient Mediterranean agro-food systems through circular management of organic resources

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The Mediterranean region is home to 480 million inhabitants. It is characterized by dry climatic conditions marked by a chronic water shortage affecting photosynthetic biomass production. The situation is expected to worsen as the region is under massive pressure from human activities and climate change-related water and thermal stresses. Also, an estimated 8.3 million ha of agricultural land is vulnerable to loss due to urbanization and land degradation. The situation is acute, mainly in the southern Mediterranean. Conversely, the exploitation of harvested crop biomass to meet the demands of the burgeoning urban population creates a massive drain on organic carbon sinks on agricultural lands. The projected increase in urban populations is expected to enhance urban food demand leading to further increases in soil nutrients and carbon exports from farmlands to urban areas. While health benefits of the Mediterranean diet have been proven, evidence of potential circularity and associated greenhouse gas (GHG) emissions

remain scant. Cognizant that food waste management practices influence diet-related GHG emissions, the Mediterranean Circular Food Systems (Med-CiFoS) network systematically evaluates organic waste management practices that increase the sustainability of the Mediterranean diet and create green sources of biofertilizers, livestock feed and bioenergy. Through its activities, the Med-CiFoS network is increasing the visibility of waste management options promoting circular management of urban households and olive oil milling organic waste in four different Mediterranean countries (Greece, Morocco, Spain, Tunisia). These waste streams were chosen because of their importance in a region characterized by an increasing urban population and responsible for over 95% of all olive oil production globally. Key drivers and attitudes responsible for organic waste generation are documented through a combination of desktop studies and surveys, and potential solutions to valorize/make better use of these wastes are identified. Our results will inform national waste and GHG emission reduction strategies and reduce agriculture's dependence on external inputs.

Keywords: circular management, climate change mitigation, household, olive oil, organic waste