

Special Mobility Strand of the MAYA Project
**“Sustainable agro-ecosystem management and mitigation strategies in relation to
climate change”**
Sassari, 17-22 June 2019

Venue: University of Sassari

Objectives

The Special Mobility Strand is foreseen for supporting and complementing the training of teachers on the integrated management of water, agriculture and environmental resources.

The 30 Tunisian teachers that will follow the online training courses will spend 5 days at the EU partners in order to discuss with peers, reach a deeper understanding of the new methods and technologies proposed by the European partners and receive support to analyse Tunisian case studies with the new methodologies and techniques. According to their background, the Tunisian teachers will be divided in 3 subgroups that will follow diverse technical issues in 3 different European Countries:

- 10 teachers at NRD-UNISS to discuss on sustainable agro-ecosystem management and mitigation strategies in relation to climate change;
- 10 teachers at AUTH to deepen technical topics on water resources management and policy;
- 10 at UdG to focus on water quality management in agro-ecosystems to prevent environmental pollution.

Sending and receiving Institutions will take advantage from the mobility period. In fact, during these days, an exchange of expertise and experiences will be promoted and new possible contacts and scientific collaborations could arise. Furthermore, Tunisian teachers will take seminars in each HEI so that also EU students will benefit from the knowledge and expertise of the invited staff.

SMS SCHEDULE

DAY 1 International Conference: “World day to combat desertification and drought”

Location: University of Sassari, Department of Agriculture, Viale Italia 39, Sassari, Aula Barbieri

9.00-9.20 Registration of the participants

9.15-9.25 Welcome message, **Pier Paolo Roggero** Director of NRD

9.25-9.35 Security and international cooperation: a new BSc degree@UNISS
Quirico Migheli, UNISS

9.35-9.50 MAYA and ILHAM-EC Project: internationalisation and capacity building opportunities
Luciano Gutierrez, UNISS

9.50 -10.10 WADISMAR Water harvesting and Agricultural techniques in Dry lands: an Integrated and Sustainable model in MAghreb Regions, **Alberto Carletti, UNISS**

10.10-10.30 Pathways to promote innovative farming systems to face water shortage in dry land area: The Beqaa - Lebanon case study **Salem Darwich, Lebanon** University

10.30-10.50 The dry spells during the rainy season in Northern Tunisia: temporal variability and impact on cereal production **Sami Charfi, University of Sfax**

10.50-11.10 Soil and groundwater salinization risks, approaches and modelling **Rachida Bouhlila, University of Tunis El Manar**

11.10-11.30 *Coffee Break*

11.30-11.50 Climate Change in the Context of Water Stress: Risks, Impacts and Resilience of the Agricultural Sector in Tunisia **S. Jomaa, R. Hammam, Y. Zahar. University of Carthage**

11.50-12.10 Global wheat production with 1.5 and 2.0°C above pre-industrial warming **Pierre Martre, LEPSE, Montpellier**

12.10-12.30 Sardinia strategy for Climate change adaptation: A methodological approach for climate change risk assessment **Serena Marras, UNISS; Antonio Trabucco CMCC**

12.30-12.50 The role of Strategic Environmental Assessment in addressing climate change adaptation” **Elisabetta Di Cesare, UNISS**

12.50-13.10 Impacts, adaptive capacity and responses to climate change in Sardinian cropping systems **Laura Mula, Laura Altea UNISS**

13.10-13.30 *Open discussion*

15.00-17.45 Visit to Ottava Experimental field

18.30-20.30 Tomorrow, a film by: Cyril Dion and Mélanie Laurent
Cinema Cytplex Moderno Viale Umberto I, 18, Sassari SS

DAY 2 Educational Visits

9.00-10.00 *Travel to Macomer*

10.00-12.00 Educational visit of the pilot site of the network TreeDivNet¹

Simone Mereu, UNISS

12.00-13.00 Educational visit of the pilot site of AGER ²iGral project at Azienda S. Antonio

Antonio Pulina, UNISS

13.00-13.45 *Travel to "Elighes Uttiosos" Farm, S.Lussurgiu*

13.45-15.00 *Lunch at Agriturismo "Elighes Uttiosos"*

15.00-17.15 Educational visit of the pilot site of LIFE-Regenerate³ project at Elighes Uttiosos Farm, S.Lussurgiu

Antonio Pulina, UNISS

17.15-18.15 *Travel to Sassari*

¹ These experiments investigate questions related to biodiversity in trees, for example the effect of specific mixtures on yield, complementarity, and environmental stress. The scientific goal is to identify some of the mechanisms through which species interact to promote co-existence, increased functioning, or tolerance to stress. Our objective also is to translate that knowledge into relevant guidelines for the management of forests and plantations, as well as conservation efforts.

² iGRAL - INNOVATIVE BEEF CATTLE GRAZING SYSTEMS FOR THE RESTORATION OF ABANDONED LANDS IN THE ALPINE AND MEDITERRANEAN MOUNTAINS. The iGral project aims to develop innovative beef cattle pastoral systems based on rustic breeds (Highland and Sarda) breeding, which are suitable for grazing in the current Alpine and mediterranean contexts, characterized by high levels of grazing areas abandonment and degradation. In different areas of Piedmont and Sardinia, sustainable and low cost pastoral practices will be tested, using attractive points, such as salt and water points, to improve the spatial distribution of grazing cattle and the consumption of low quality forage. During the project the impacts of management on vegetation, bioindicator as insects, and quality of the obtained grass fed meat will be evaluated.

³ LIFE Regenerate. Revitalizing multifunctional Mediterranean agrosilvopastoral systems using dynamic and profitable operational practices. LIFE Regenerate's (<http://regenerate.eu/en/>) main objective is to demonstrate that farms of the Mediterranean silvopastoral systems can become self-sufficient and profitable based on resource efficiency principles and incorporating added value products, both at a demonstration and a larger scale. The project has the following specific objectives: 1. Combat the loss of natural regeneration and soil degradation in 100 ha of degraded silvopastoral areas by providing effective, mosaic landscape management procedures and improving soil quality 2. Recover the practice of multi-species rotational grazing, adapted to improve natural capital and optimize commercial advantages 3. Recycle biomass waste within the farm, reducing external input of fodder and creating alternative sources of income 4. Replicate the project's best practices to 5,000 ha in Spain, Italy & Portugal, proving it is a representative, effective model 5. Integrate new technologies and monitoring of project advances 6. Influence policy-making and involve external stakeholders to promote replication and long-term sustainability.

DAY 3 Educational Visits

8.00-9.30 *Travel to Arborea*

09.30-11.30 Educational visit of 3A Cooperative⁴

Casula, 3A Cooperative and Pier Paolo Roggero, UNISS

11.30-13.00 Consorzio di Bonifica di Oristano: visit of the pumping plants⁵

Serafino Meloni and Roberto Sanna, Consorzio di Bonifica dell'Oristanese

13.00-13.10 *Travel to Il Gallo Bianco Arborea, OR*

13.10-14.15 *Lunch at Il Gallo Bianco Arborea*

14.15-16.15 Cooperativa Produttori Arborea and Pilot Site of the Project RE-LIVE WASTE⁶

Marco Peterle Cooperativa Produttori Arborea and Pier Paolo Roggero, UNISS

16.15-17.15 Visit of the Farm Fratelli Sardo

Simone Sardo

17.15-18.15 *Travel to Sassari*

⁴ The 3A Cooperative was founded in the mid-50s by the union of members holding farms located throughout Sardinia (today 226). It is the main dairy production center in the island and collects about 90% of the cow's milk produced in Sardinia. With the milk, which comes from specialized and selected farms with about 50,000 Friesian and Brown Swiss cattle breeders, excellent products are produced daily distributed and sold in Sardinia and in the rest of Italy in ever-increasing quantities in the GDO.

⁵ The activity of the Consortium is regulated by the Statute and consists mainly in the design, construction, management and maintenance of public reclamation and irrigation works in a territory of 85,000 hectares in the province of Oristano.

⁶ RE-LIVE WASTE tests pilot plants which transform livestock waste into organic high-value commercial fertilizers, contributing to smart and sustainable growth and to the creation of new business and market opportunities.

DAY 4 Educational visit and seminars

9.30-12.30 Educational Visit to Regional Agency for the Protection of the Environment ARPAS
Andrea Motroni ARPAS

12.30-14.00 *Lunch*

14.25-14.40 Graphene/iron oxides nanocomposites for water remediation
Stefania Mura, UNISS

14.40-15.00 Sinergie di partenariato transnazionale e locale per far fronte alla crisi idrica e sanitaria dell'Africa centrale e orientale. Le opportunità con l'utilizzo di tecnologie a basso impatto
MA Dessena, ENAS

15.00-15.20 RE-LIVE WASTE Improving innovation capacities of private and public actors for sustainable and profitable REcycling of LIVEstock WASTE
Laura Chessa, UNISS

15.25-15.45 FLOWERED Project: Advancing hydrogeological knowledge in the East African Rift Valley;
Alberto Carletti, UNISS

15.50-16.10 MENAWARA Non Conventional Water Re-use in Agriculture in MEditerranean countries
Alberto Carletti, UNISS

16.15-16.25 SUSTAIN COAST Sustainable coastal groundwater management and pollution reduction through innovative governance in a changing climate
Pier Paolo Roggero, UNISS

16.25-16.50 Impact of rainfall structure on modeling solute leaching in soil and groundwater
Emna Gargouri, University of Tunis El Manar

16.50-17.15 Energy Recovery from Anaerobic Co-Digestion of Wastewater Treatment Sludge and Agricultural Biomass
Jomaa Samir, University of Carthage

DAY 5 Educational Visit and seminars

9.30-12.30 Educational Visit of the Istituto di Igiene e Medicina Preventiva⁷ dell'Università degli Studi di Sassari

Antonio Azara, UNISS

12.30-14.00 Lunch

14.00-14.30 Elements of hydrology for the mastery of water in Tunisia in a context of climate change
Yadh Zahar, University of Carthage

14.30-15.00 The potential of wheat breeding strategies to develop new varieties better adapted to climate change

Rifka Hammai, University of Carthage

15.00-15.30 Fluoride contamination of food crops in the East African Rift Valley

Margherita Rizzu, UNISS

Characterization of water and paraCurriculum in Crop Productivity of the Ph.D. Course in Agricultural Sciences (University of Sassari)

15.30-16.00 Developing mitigation options for fluoride contamination in Agriculture Soils from early stage of plant development till maturity

Sarah Chahine, UNISS-Lebanon University

Characterization of water and paraCurriculum in Crop Productivity of the Ph.D. Course in Agricultural Sciences (University of Sassari)

16.00-16.30 From ancient to modern durum wheat: a change in genotypes, the types of cultivars grown, and their management

Marina Mefleh, UNISS-Lebanon University

Characterization of water and paraCurriculum in Crop Productivity of the Ph.D. Course in Agricultural Sciences (University of Sassari)

16.30-17.00 Water, drought and climate change: experiences from Tunisia

University of Sfax

⁷ Testing lab for water quality and analysis. Characterization of water and parameters.