

Information system for assessment and evaluation of biomass and organic waste potential for the production of green products in Region of Central Macedonia.



The Problem

Biomass and organic waste play an important role to the application of circular economy in Greece. A fully integrated information system, enclosing an up-to-date database, could meaningfully contribute to the monitoring of the available stocks of biomass and organic waste. The Biomass RCM e-platform will connect various stakeholders of the market and promote secondary markets for biomass, biogas, and green products. Finally, the project will promote a pioneer system for the continuous feed of biomass to an anaerobic digestion reactor and develop an optimization methodology for the quality of the feed to produce high quality compost.

BiomassRCM Overall Objective

Biomass RCM is aiming at the development of an IT system and methodologies to aid the decision makers in choosing the appropriate methods regarding biomass exploitation, as well as biogas and green products production. This will provide a competitive advantage for stakeholders in terms of positive publicity, the creation of an attractive company image that complies with the principles of circular economy and first access to an up-and-coming tool market.

Also, the project will aid in the development of green products based on residual biomass and livestock farming waste and secondary markets to manage the available residual biomass and organic waste in the region of Central Macedonia.

Finally, the project aims at the commercialization of the methodologies and IT system developed for the recording and monitoring of the available biomass and organic waste in this project as Software as a Service (SaaS). Also, subscribed costumers will have access to databases for available by-products. The acquired knowledge from the research entities will be capitalized through actions and synergies with other research entities and companies. This will lead to the increase of competitiveness of the stakeholders and provide growth for the national economy.

The Project

Biomass RCM will support the implementation of an IT system to identify, monitor and trade available biomass and organic waste in the region of Central Macedonia. The project will also optimize biogas and green products production from biomass and organic waste and explore the usage of residual waste from anaerobic digestion reactors as soil improver.



Figure 1. Region of Central Macedonia.



Figure 2. Wheat field, potential for biomass production.

The Approach

BiomassRCM's aim is twofold; the development of an IT system to estimate and assess available biomass and organic waste in the region of Central Macedonia (RCM) and the exploitation of farm waste and biomass residue to produce green products. An overview of biomass and organic waste types and the current legislature regarding best alternative practices for organic waste is made.

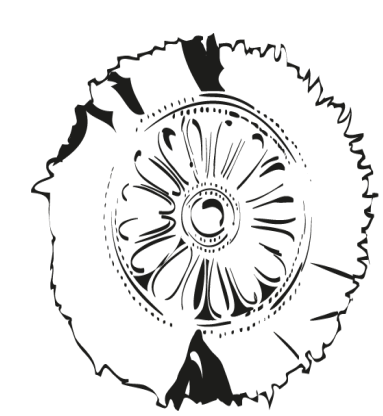
Data sources for available biomass in RCM and external stakeholders are identified. A methodology for estimating and evaluating the potential for biomass and organic waste as well as the potential for biogas production from every biomass type is developed. This methodology will be applied in the study area to create a knowledge base.

The project will also develop a methodology to optimize the input feed to maximize biogas production. The residual waste will be used as a substrate for continuous-operation anaerobic digestion reactors. The compost produced will be used in pilot cases as soil improver. Finally, the environmental impacts of these procedures will be examined.

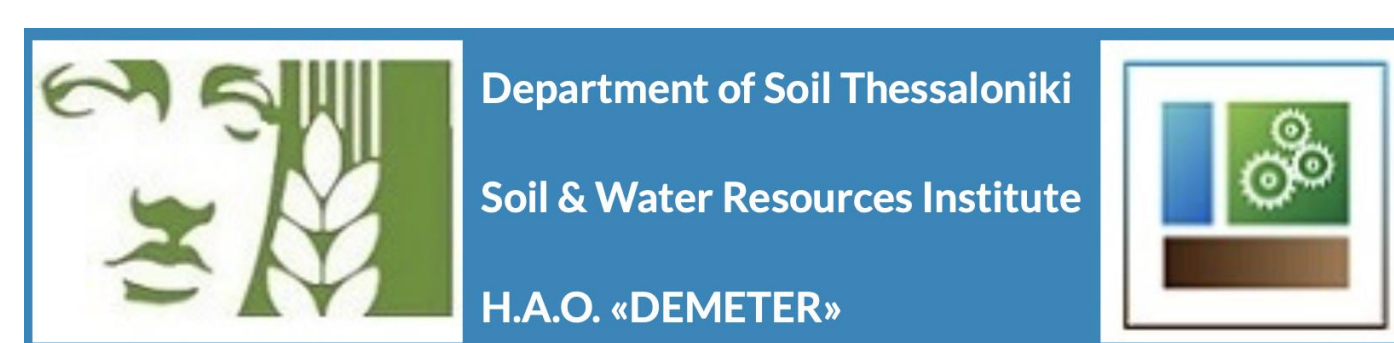
Expected Impacts

- knowledge base for the available biomass and organic waste in the region of Central Macedonia. Categorization of biomass and organic waste according to type
- IT system that will provide supply/demand functionalities for interested parties. Design of interactive map. The system will support decision makers for the alternative exploitation of biomass and organic waste
- Methodology for categorizing biomass and organic waste, maximizing biogas production from biomass, and producing soil improver from output of anaerobic digestion reactors
- Potential for growth of secondary market for green products.

The Project Partners



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