

Development and implementation of GIS-LIS for waste reuse on soil

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EXTENDED SUMMARY: One of the innovative achievements of the LIFE11 ENV/GR/951 project entitled “Sustainable strategies for the improvement of seriously degraded agricultural areas-The example of *Pistachia vera* L. (AgroStrat)” is the development of a GIS-Land Information System (i.e. GIS-LIS) aiming to assist local/regional authorities and policy makers to design waste management plans and strategies by developing GIS-Land Suitability Maps and estimating the appropriate waste amount to be disposed or reused for agricultural purposes. Doula et al., (2016a, b) described the theoretical base of the GIS-LIS development while Papadopoulos et al., (2015) provided details for the software, namely «Cultivation Management Software-CMS» that has been developed in the framework of AgroStrat project to assist the implementation of the GIS-LIS by stakeholders.

The GIS-LIS was developed for the pilot area of the project, i.e. Aegina island, Greece, however it can be also adopted by and implemented to other areas. Therefore, the present study discusses how local and regional authorities of Mediterranean area can develop their own GIS-LIS and use it through the CMS.

In this context, this study provides guidelines for the development of soil thematic maps, evaluation of soil properties and finally development of land suitability maps.

Also the existing soil data in the different national of European soil data bases like in the Lucas Soil Data Base, the ESDAC Raster Soil Data, the ESDAC Vector Soil Data which can be used are mentioned. Instructions are also given, on how the existing soil data to be evaluated and harmonized in order to become interoperable, and updating or how new data to be produced through pedotransfer functions, multivariate or geostatistical techniques.

Finally, if the GIS-LIS is supported by groundwater vulnerability assessment and Life Cycle Analysis it can offer a holistic approach for agricultural waste management and reuse and thus become a powerful tool towards improvement of sustainability in sensitive and prone to desertification agricultural areas.

References

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