Multi-criteria evaluation tool (NoAW H2020 Project) * . . . . 2019.

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Background

Bearing in mind the terms of the H2020 Horizon NoAW project, based on the near zero-waste society and the promotion of circular economy in agro-waste management, one of the tasks under WP2 is the assessment of terri-torial impacts of the Agro-Waste Management Plan (AWMP) on the envi-ronment in the strategic planning of agro-waste management. The objective of the territorial impact assessment on the strategic planning level is directly connected with the decision-making process. Such processes serve for possible directing of the planning and management of agro waste in the earliest phase of conceptualizing the development possibilities (in the or-ganizational phase that precedes the act of choosing the processing and re-usage technology or the agro-waste elimination technology).

Objectives

The objective of this deliverable is to apply the multi-criteria evaluation method (MCE) in the process of strategic environmental assessment (SEA) for the purpose of devising Agro-Waste Management Plan (AWMP) sup-ported by a Geographic Information System (GIS), i.e. to present one of several environmental impact assessment methods under WP2. This deliv-erable will constitute a part of the analysis of the possible application of different methods of environmental impact assessment and their mutual complementation for the purpose of making optimal decisions on future waste management planning. This objective is in line with the objective re-lated to the contribution in creating hybrid tools for environmental assess-ment to be develop under WP2 on the same case study, that together will open greater possibilities to decision-makers on vineyard waste manage-ment.

Results & implications

As a basis for conceptualizing AWMP propositions, the existing waste man-agement status is assessed at the regional level by means of analyzing data on waste production in VA, processing them in GIS and extrapolating them to the area of Oplenac vineyards. Such an approach in the status analysis is possible to develop further, up to the level of spatial coverage that provides the most economical approach in waste treatment, i.e. in choosing the technology which is financially justifiable. Apart from that, GIS can be used in the monitoring of AWMP implementation, i.e. in the process of waste management on the actual territory (Oplenac vineyards). On the other hand, by applying the MCE method in SEA for AWMP of the VA and the Oplenac wine region, in which VA is situated, it is possible to assess the emerging trends in space and the environment following the implementation of AWMP, and based on that to choose the most favourable waste man-agement option. The implemented MCE method can be further combined with and compared to different methodological approaches developed and implemented within WP2 (TM and LCA). In that manner, MCE could be supplemented with the results of the research within LCA and TM in order to obtain the best results and to find the best solutions, given the sustainability indicators preferences by the user. Application of the planning approach in SEA, in combination with the technically-technologically oriented approaches such as LCA, could give an additional quality (value) in as-sessments for making optimal decisions in waste management.
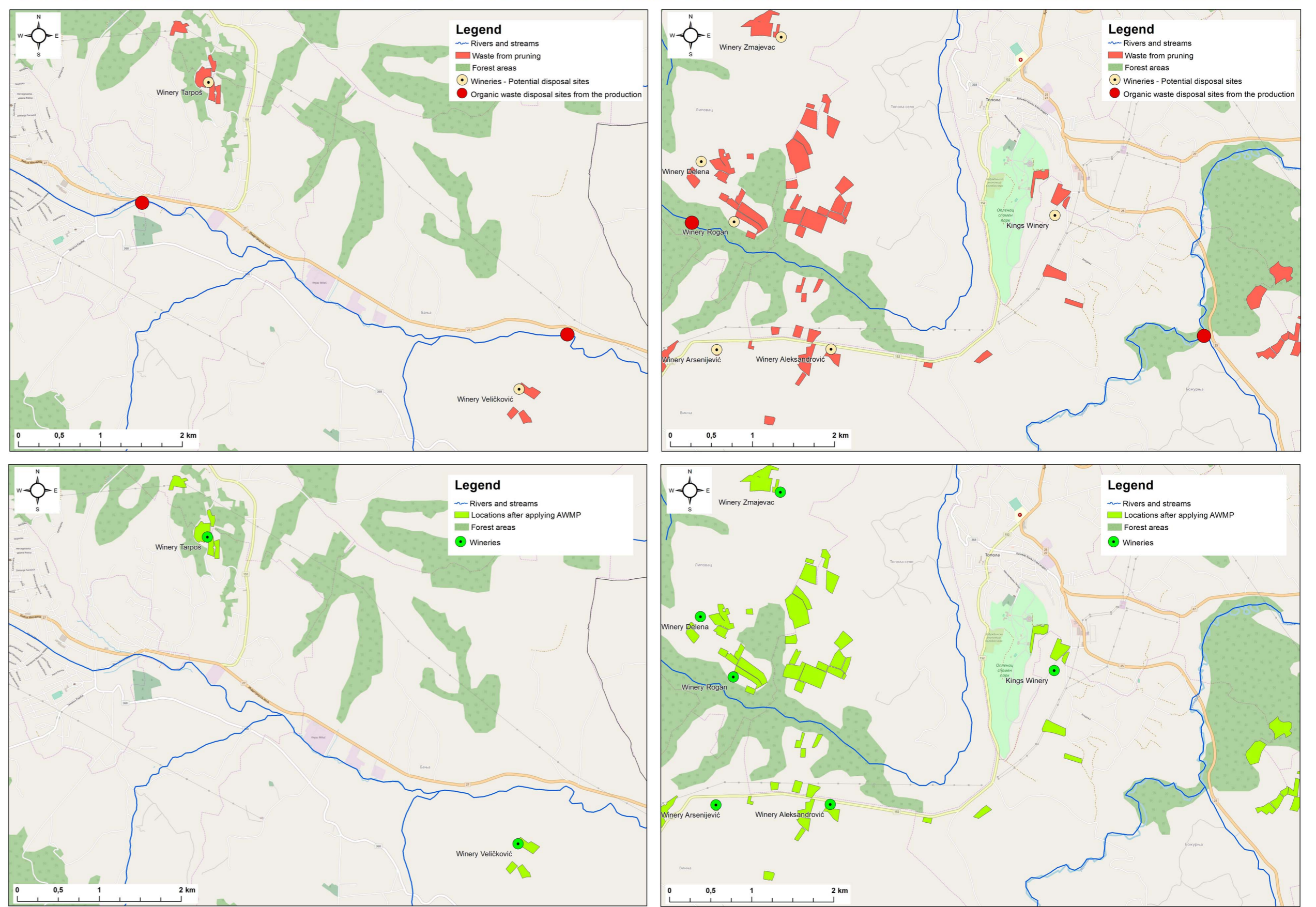
Spatial data	Data type / Usage	Source	File format	Example
Municipality of Topola and Aranđelovac border	Vector polygon/line – base layer	National Geodetic Service	SHP (Shapefile)	
Cadastral municipality border	Vector polygon/line – base layer	National Geodetic Service	SHP (Shapefile)	
Location of Winer-ies facilities	Vector point– base layer	Geographical coordinates of the wineries	Google Earth KMZ/KML file, converted to SHP (Shapefile)	
Vineyard`s	Vector polygon- generic	Cadastral unit/parcel for the Oplenac vineyard	Google Earth KMZ/KML file, converted to SHP (Shapefile)	
General Landuse / Corine Land Cover	Vector polygon- generic	European Environmental Agency, Copernicus	SHP (Shapefile)	
Digital Elevation / Digital Surface Model	GeoTIFF / GRID raster- generic	National Geodetic Service/ EU-DEM Copernicus		
Topographic Map Open Street Map	Raster / Base Map– base layer	Open source, GIS software	GeoTIFF	
Orthophoto / Satel-lite image	Raster / Base Map- generic	National Geodetic Service / Open source, GIS software	GeoTIFF	