



**Strengthening the Scientific Foundation of Water Quality Programs**

Project Number: **LIFE08 ENV /CY / 000460**

Deliverable Number: **D1.3**

Deliverable Name: **Digital Elevation model for Kalo Horio Catchment and Digital land use map compatible with BASINS formats and specifications**

<b>Dissemination Level</b>		
<b>PU</b>	Public	<b>X</b>
<b>PP</b>	Restricted to other program participants (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the Consortium (including Commission Services)	

In order to run the BASINS software, Land use and DEM data should be provided to the working group. The data were based on the various format protocols as described in Deliverable 1.1.

DEM is a Digital Elevation Model or 3-D representation of a terrain's surface created from terrain elevation data. There is no common usage of the terms digital elevation model (DEM), digital terrain model (DTM) and digital surface model (DSM) in scientific literature. In the most cases the term digital surface model represents the earth's surface and includes all objects on it. In contrast to a DSM, the digital terrain model represents the bare ground surface without any objects like plants and buildings

In our project we were able to receive the Digital Elevation Model in a resolution of 5metres. The model can be also described as DSM as described above, since it represents just the bare ground surface.

A snapshot of the DEM follows in Figure 1. The digital file can be located on the CD on Task2 under the name DEMs\_contours\_photo\_5m.



*Figure 1: Digital Elevation Model of the Kalo Horio catchment*

A shapefile stores non-topological geometry and attribute information for the spatial features in a data set. The geometry for a feature is stored as a shape comprising a set of vector coordinates. Because shapefiles do not have the processing overhead of a topological data structure, they have advantages over other data sources such as faster drawing speed and edit ability. Shapefiles handle single features that overlap or that are non-contiguous. They also typically require less disk space and are easier to read and write. Shapefiles can support point, line, and area features. Area features are represented as closed loop, double-digitized polygons. Attributes are held in a dBASE® format file. Each attribute record has a one-to-one relationship with the associated shape record

Since the public services use the ArcGIS software which handles shapefiles it was easier for the team to acquire them in this format. The Basins software that is used for the project also uses shapefiles. The most important thing is that shapefiles should be on the same coordinate system and should cover the project area.

## **CORINE 2006 LAND COVER**

Corine stands for *Coordination of Information on the Environment*. The EC established Corine in 1985 to create pan-European databases on land cover, biotopes (habitats), soil maps and acid rain. Corine Land Cover (CLC) is a map of the European environmental landscape based on interpretation of satellite images and includes 44 standard land cover classes. It provides comparable digital maps of land cover for each country for much of Europe. Corine Land Cover 2006 is the third dataset in a series, the previous datasets corresponding to base years of 1990 and 2000. In this document:

- The CLC 1990 dataset is referred to as **CLC90\_IE**
- The CLC 2000 dataset is referred to as **CLC00\_IE**
- The revised CLC 2000 dataset is referred to as **CLC00rev\_IE**
- The CLC change 2000-2006 dataset is referred to as **CHA06\_IE**
- The CLC 2006 dataset is referred to as **CLC06\_IE**

Ireland's CLC 2006 update is part of a European project to update Europe's land cover maps. This project was coordinated by the European Environment Agency (EEA) in conjunction with the European Space Agency (ESA), the European Commission (including DG Joint Research Centre) and national agencies in Eionet1 member countries. National CLC 2006 activities took place under the umbrella of the overall GMES Fast Track Service Precursor (FTSP) on Land Monitoring. In Ireland, the Environmental Protection Agency (EPA) provided national input into GMES FTSP services. ERAMaptec was contracted by EPA to undertake the technical aspects of the CLC 2006 update. This document is the Final Report documenting the creation of the following CLC 2006 update databases:

- Product 3 - change in CLC 2000 to 2006 - *CHA06\_IE*, and
- Product 4 - CLC 2006 - *CLC06\_IE*

These databases were identified in the implementation plan of the GMES FTSP on Land Monitoring project (EEA, 2006). The *CHA06\_IE* dataset contains changes of at least 5 ha in Corine Land Cover between the base years of 2000 and 2006, and *CLC06\_IE* contains the land cover according to the Corine nomenclature for 2006. The datasets were produced following technical guidelines (Bossard et al., 2000, Heymann et al., 1994, Büttner et al., 2002 and Büttner and Kosztra, 2007) and Corine nomenclature (Büttner et al., 2006).

The Corine land cover datasets are intended to fulfil a primary purpose of enabling inter-country comparisons of land use and land cover across Europe. Due to the characteristics of the Corine methodology the Corine dataset is not considered optimal in representing higher precision land cover variation.

A snapshot of the CORINE Land Cover follows in Figure 2. The digital file\* can be located on the CD on Task2 under the name *Corine\_landuse\_\_2006*.

\*Please note that on the attribute table, the Level2name describe Level 3 name and Level3Name describe Level 2 Name.

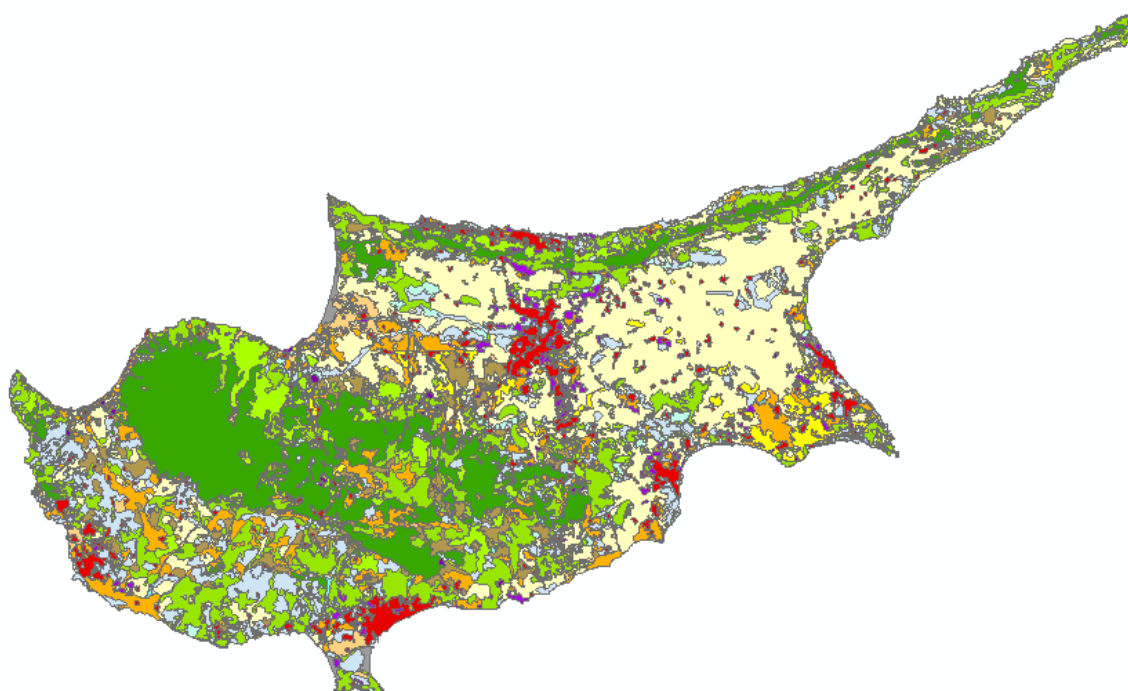


Figure 2: Cyprus Corine Land Cover Map

The table below shows all types of land cover sorted by the 3 different levels.

Level 1	Level 2	Level 3	
1. Artificial surfaces	1.1 Urban fabric	1.1.1 Continuous urban fabric	
		1.1.2 Discontinuous urban fabric	
	1.2 Industrial, commercial and transport units	1.2.1 Industrial or commercial units	
		1.2.2 Road and rail networks and associated land	
		1.2.3 Sea ports	
		1.2.4 Airports	
	1.3 Mines, dumps and construction sites	1.3.1 Mineral extraction sites	
		1.3.2 Dump	
		1.3.3 Construction sites	
	1.4 Artificial non-agricultural vegetated areas	1.4.1 Green urban areas	
		1.4.2 Sport and leisure facilities	
	2. Agricultural areas	2.1 Arable land	2.1.1 Non-irrigated arable land
			2.1.2 Permanently irrigated land
2.1.3 Rice fields			
2.2 Permanent crops		2.2.1 Vineyard	
		2.2.2 Fruit trees and berries plantations	
		2.2.3 Olive groves	
2.3 Pastures		2.3.1 Pastures	
2.4 Heterogeneous agricultural areas		2.4.1 Annual crops associated with permanent crops	
		2.4.2 Complex cultivation patterns	
		2.4.3 Land principally occupied by agriculture with significant areas of natural vegetation	
		2.4.4 Agro-forestries	
3. Forest and semi-natural area		3.1 Forests	3.1.1 Broad leafed forest

		3.1.2 Coniferous forests
		3.1.3 Mixed forest
	3.2 Scrub and/or herbaceous vegetation associations	3.2.1 Natural grassland
		3.2.2 Moors and heathlands
		3.2.3 Sclerophyllous vegetation
		3.2.4 Transitional woodland-shub
	3.3 Open spaces with little or no vegetation	3.3.1 Beaches, dunes, sand
		3.3.2 Bare rocks
		3.3.3 Sparsely vegetated areas
		3.3.4 Burnt areas
3.3.5 Glaciers and permanent snowfields		
4. Wetlands	4.1 Inland wetlands	4.1.1 Inland marshes
		4.1.2 Peat bogs
	4.2 Coastal wetlands	4.2.1 Salt marshes
		4.2.2 Salines