

# West-Crete, Greece

## Study site details

West-Crete covers the southwestern part of the Chania prefecture and is characterized by a variety of landscapes, with soils formed on limestone, shale, marl, conglomerates and alluvial deposits.

- **Coordinates:**  
Latitude: 35°27' – 35°55' N  
Longitude: 23°60' – 24°02' E
- **Size:** 720 km<sup>2</sup>
- **Altitude:** 0 – 2453 m
- **Precipitation:** 627 mm (mountains +30%)
- **Temperature:** 18.7°C (annual mean)
- **Land use:** scrublands, rainfed (olives) and irrigated agriculture, forests, and natural pastures
- **Inhabitants:** ~50,000
- **Main degradation processes:** water erosion, soil and water salinization, water stress
- **Major drivers of degradation:** EU and national policies, financial markets, inappropriate land management (burning)

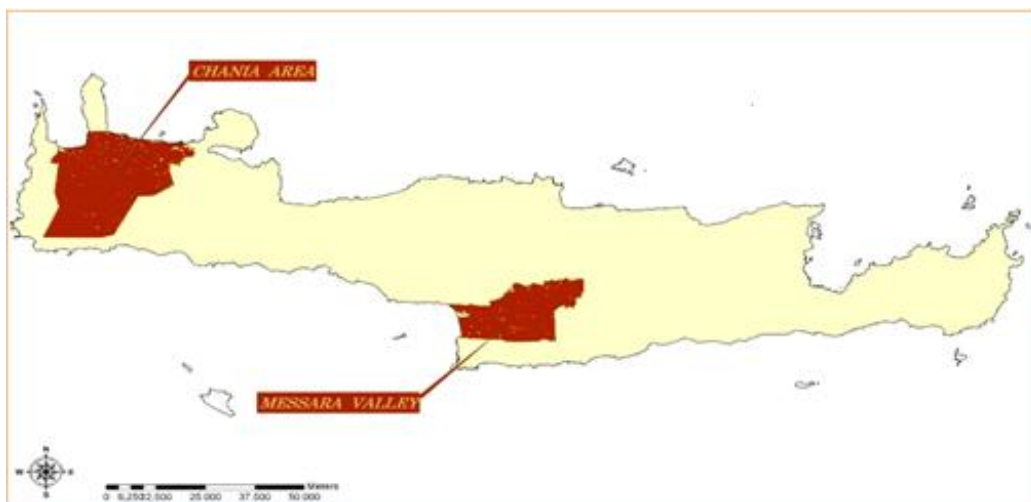


Figure 1: Study site location (Chania represents the West-Crete study area).

## Overview of scenarios

1. Baseline Scenario: PESERA baseline run
2. Technology Scenario: No tillage with and without herbicide application

# West-Crete, Greece

## Baseline Scenario

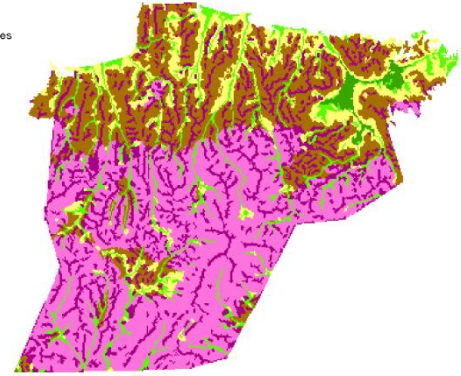
### PESERA baseline run

The baseline erosion map shows most high erosion rates confined to mountain slopes. Hillslopes, footslopes and valleyfloors are generally associated with lower erosion rates but there are some exceptions. PESERA simulations for West-Crete focused on soil erosion.

#### Legend

- Ridges
- Mountain slopes
- Hillslopes
- Footslopes
- Valleyfloors
- Plains

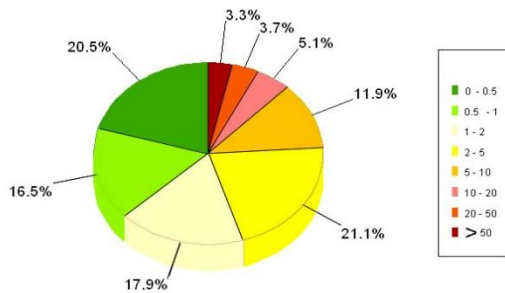
#### Landforms



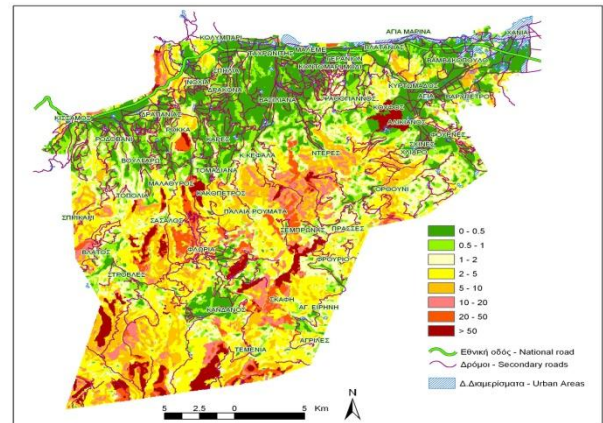
10 5 0 10 Kilometers

## Soil erosion

#### Existing condition



#### Erosion



Source: Karavitis et al. (2008)

# West-Crete, Greece

## Technology Scenario:

### No tillage with or without herbicide application

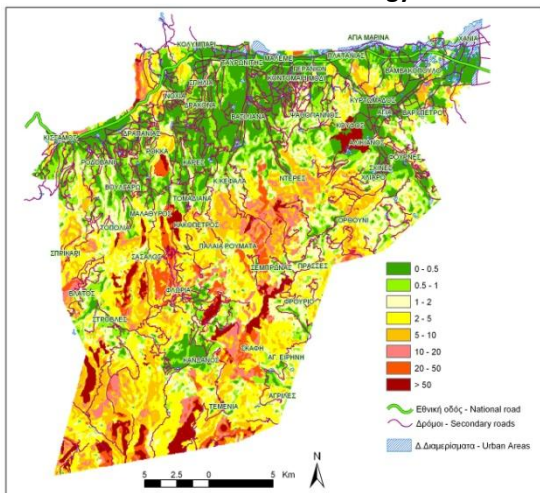
Olive groves in hilly areas under the land management practice of no-tillage is considered the best for environmental protection since olives:

- High protection of soil from raindrop impact
- High resistance to drought
- Low fire risk
- High protection of soil from erosion

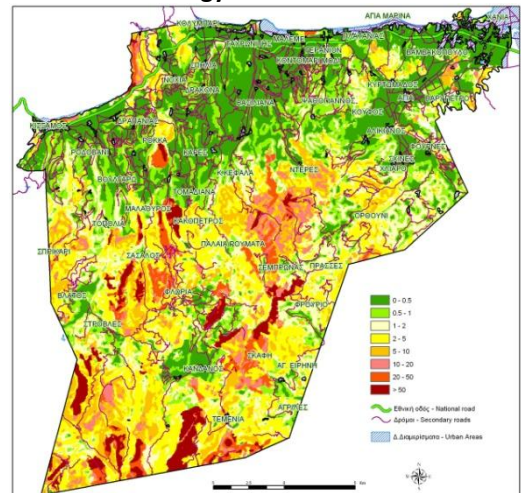


## Biophysical impact: soil erosion

### Without technology

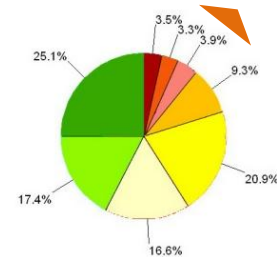
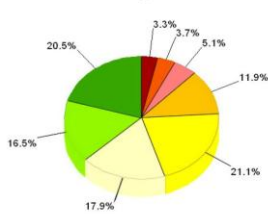


### With technology – no herbicides

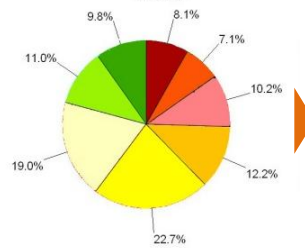


Source: Karavitis et al. (2008)

### Existing condition

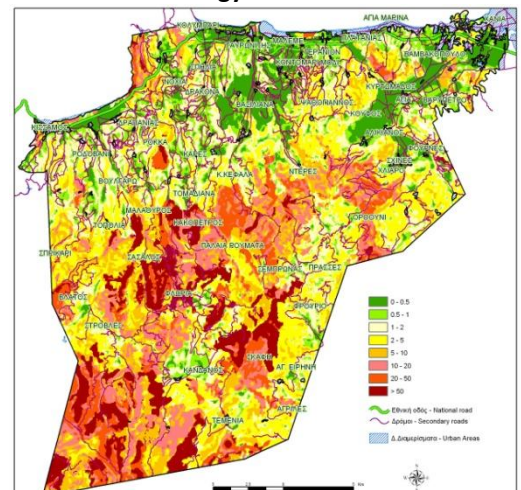


### No tillage



Removal of annual vegetation under Olive groves

### With technology – herbicides



Source: Karavitis et al. (2008)