

# GREECE



Source: esri

## General

Greece - officially the Hellenic Republic - is located in Southern and Southeast Europe. The country is located at the crossroads of Europe, Asia and Africa. Situated on the southern tip of the Balkan Peninsula, it shares land borders with Albania in the Northwest, the Republic of Macedonia and Bulgaria in the North and Turkey in the Northeast. The Aegean Sea lies East of the mainland, the Ionian Sea in the West, the Cretan Sea and the Mediterranean Sea in the South. Greece has a large number of islands, of which 227 are inhabited. The country consists of nine geographic regions: Macedonia, Central Greece, the Peloponnese, Thessaly, Epirus, the Aegean Islands, Thrace, Crete and the Ionian

Islands. The country has an area of 13.2 Mha (million hectares) with, in 2022, a population of 10.4 million, or 0.79 persons per ha (Wikipedia and United Nations, 2022).

## Climate and geography

The climate of Greece is primarily Mediterranean, featuring mild, wet winters and hot, dry summers. This climate occurs at all coastal locations, including Athens, the Cyclades, the Dodecanese, Crete, the Peloponnese, the Ionian Islands and parts of the Central Continental Greece region. The Pindus mountain range strongly affects the climate of the country, as areas west of the range are considerably wetter on average than the areas lying east of the range (source: Wikipedia).

Eighty percent of Greece consists of mountains or hills, making the country one of the most mountainous in Europe. Western Greece contains a number of lakes and lowlands. Extensive plains are primarily located in the regions of Thessaly, Central Macedonia and Thrace. They constitute key economic regions as they are among the few arable places in the country (source: Wikipedia).

## Existing polders

Schnitter (1994) and Violet (2007) describe that Lake Copais north-west of Athens at 95 m+MSL (mean sea level) is fed by runoff from rainfall and by the Kephissos River. Natural grottos are used to drain excess water from Lake Copais to the sea. The water of Kephissos River, previous flowing into the lake, was detoured to an underground passage through a 25 km long canal. The land reclaimed by emptying of the lake was itself drained, surrounded by dikes, and brought under cultivation. Figure 1 shows the situation of about 1300 BC, when the system came in operation. The Group Polder Development (1982) states that the area of Lake Copais of 20,000 ha was reclaimed in 1886-1887. This should have been an improvement of the existing polder area.

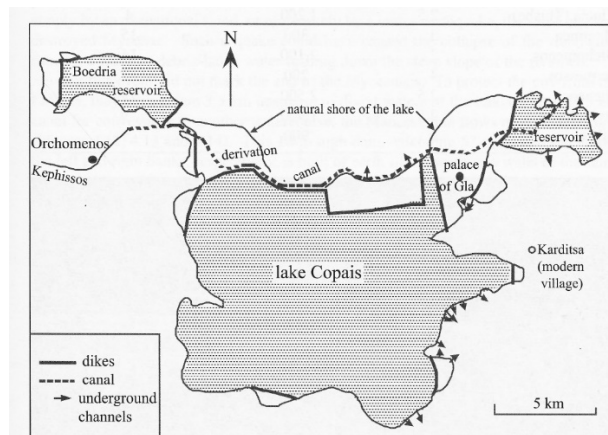


Figure 1. Hydraulic developments and reclamation of Lake Copais from the Mycenaen era, situation around 1300 BC (Viliot, 2007, after Schnitter, 1994)

Violet (2007) also states that the same techniques as described above were used to reclaim marshy valleys in many other locations. Typically there are dikes surrounding a reservoir-lake fed by rainwater and snowmelt, the dikes also serving to protect dry areas that are drained into grottos or caverns.

For the envisaged Mesolongi Polder, a pilot polder had been made (Figure 2) (NEDECO, 1969 and Group Polder Development, 1982). Based on the paper by Malamos *et al.* (2015) and check on Google Earth it can be concluded that since then the whole polder (probably 2,640 ha) has been made.

In the Lesini area a polder of 5,000 ha existed. An extension of approximately 750 ha was planned (Group Polder Development, 1982).

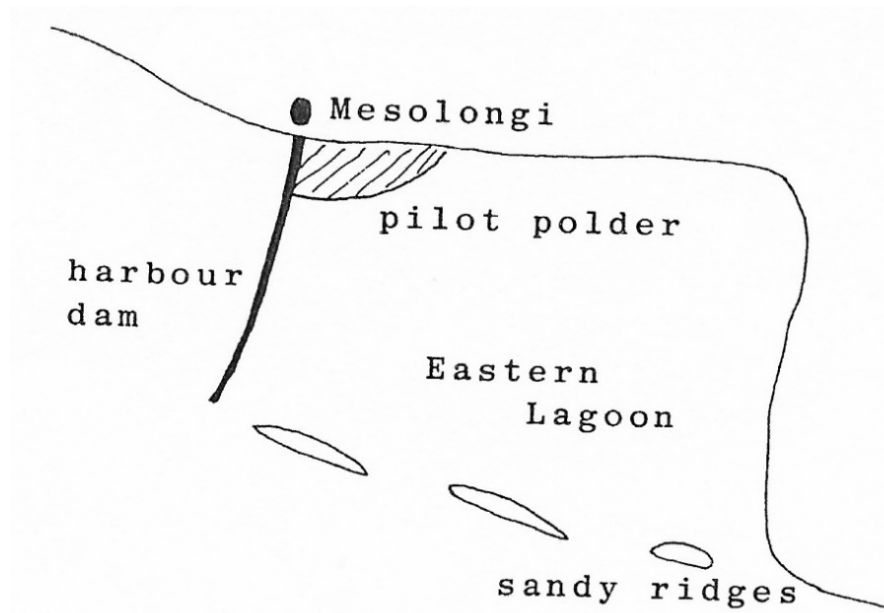


Figure 2. Mesolongi Pilot Polder (NEDECO, 1969 and Group Polder Development (1982)

General characteristics of the polders in Greece are shown in Table I.

### Proposed polders

In addition to the polders as mentioned above several other polders were under study (Group Polder Development, 1982). These are:

- the Grontmij (1951-1952) has done a study on the technical and economic possibilities of draining and cultivation of lagoons and marshes. The study focused on the following regions: lagoons of Mourgia and Agoulinitza near Pyrgos, lagoons in the Delta of Sperchios River, lagoons of Roïda and Logarou in the Arta Plain, the Concession of Lesini, Lake Vistonida, lagoons of Splantza and Valanidorachi and the lagoons between the mouths of the Acheloos and Evinos rivers near Mesolonghi (Figure 3). The report can be seen as a detailed preliminary study for the options of land reclamation in the studied areas. There was a general proposal for the reclamation in each of these areas. At Google Earth it can be observed that polders in the Lagoon of Muria, in the Delta of Sperchios River, the Concession of Lesini, Lake Vistonida, Lagoon of Splantza and Valanidorachi and the Lagoons near Mesolonghi have indeed been implemented;
- *Arta Plain*. This plain consists of 15,000 ha of lowlands, marshes and lagoons. A pilot polder of 230 ha was planned;
- *Delta area west of Thessaloniki*. In this area there is quite some sedimentation and reclamation was considered.

### Location of the polders in Greece as shown on the World polder map

The location of the polders in Greece is shown in Figure 4.

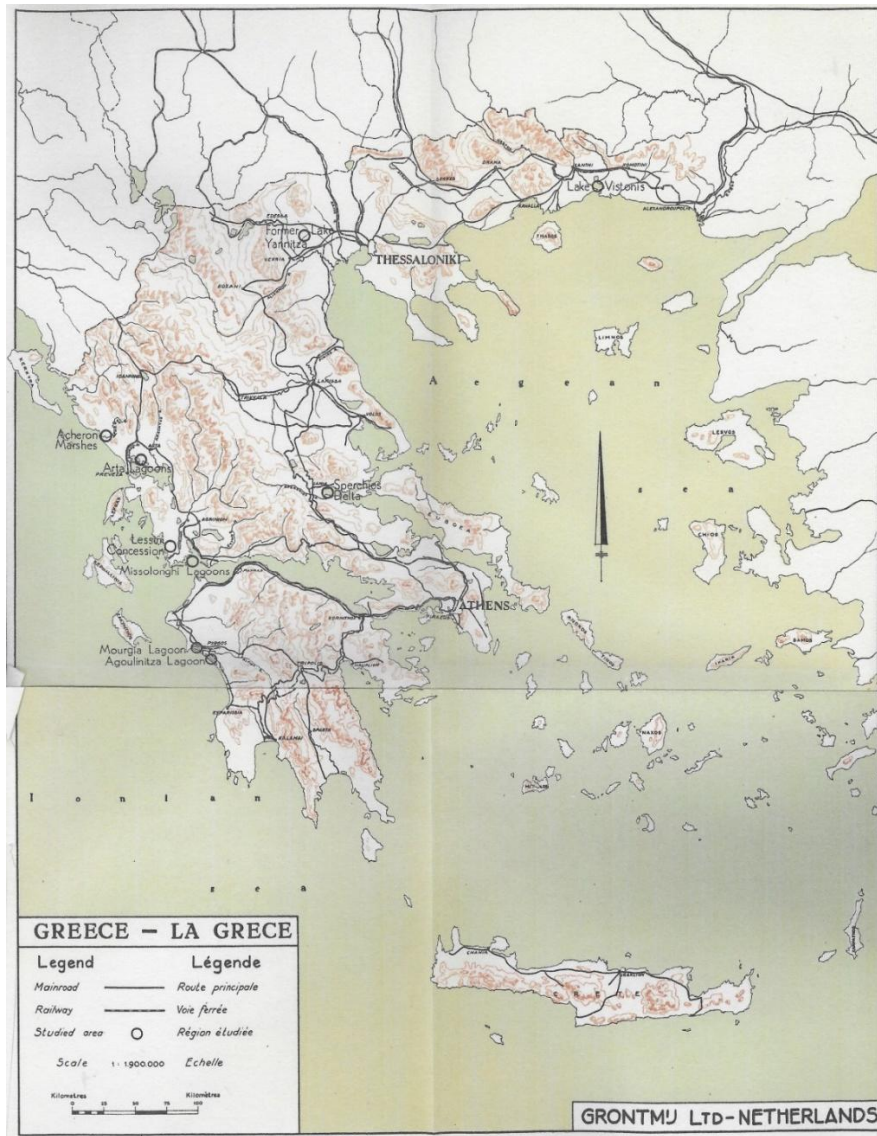


Figure 3. Locations of the study on the technical and economic possibilities of draining and cultivation of lagoons and marshes (Grontmij, 1951-1952)

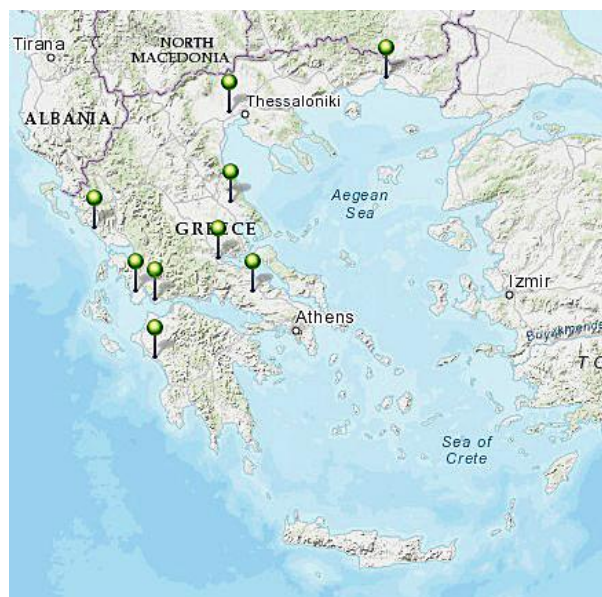


Figure 4. Location of the polders in Greece (source: esri – Batavialand)

## References

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Table I. General characteristics of the polders in Greece

| Name   | Reclamation           | Area in ha | Type *) | Latitudes | Longitudes | Elevation in m+MSL | Land use    |
|--|-----------------------|------------|---------|-----------|------------|--------------------|-------------|
| <i>Existing polders</i>                              |                       |            |         |           |            |                    |             |
| Lake Copais  | 1300 BC and 1886-1887 | 20,000     | DL      | 38° 26' N | 23° 5' E   | 95                 | Agriculture |
| Lesini area  |                       | 5,750      | LGS     | 38° 26' N | 21° 11' E  | -2                 | Agriculture |
| Mesolonghi Polder                                    | 1960-                 | 2,640      | LGS     | 38° 22' N | 21° 29' E  | 1                  | Agriculture |
| Polders in the Delta of Sperchios River              |                       |            | LGS     | 38° 51' N | 22° 30' E  | 1                  | Agriculture |
| Polder in the Lagoon of Mouria                       |                       |            | LGS     | 37° 36' N | 21° 31' E  | -1                 | Agriculture |
| Polders in the Lagoons of Splantza and Valanidorachi |                       |            | LGS     | 39° 14' N | 20° 31' E  | 2                  | Agriculture |
| Polders in the Lagoons near Mesolonghi               |                       |            | LGS     | 38° 21' N | 21° 30' E  | 0                  | Agriculture |
| Polders near Lake Vistonida                          |                       |            | DL      | 41° 03' N | 25° 12' E  | 3                  | Agriculture |
| Polders in Tessanian Plain                           |                       |            | RLL     | 39° 35' N | 22° 41' E  | 12                 | Agriculture |
| Total  |                       | 28,390     |         |           |            |                    |             |
| <i>Proposed polders</i>                              |                       |            |         |           |            |                    |             |
| Polder in Arta Plain                                 |                       |            |         |           |            |                    |             |
| Delta area west of Thessaloniki                      |                       |            |         |           |            |                    |             |
| Total  |                       |            |         |           |            |                    |             |

\*) RLL = reclaimed low-lying land; LGS = land gained on the sea; DL = drained lake