

Task 4 Watch the video titled 'EU Agriculture-CAP-Produce food' to learn about Common Agricultural Policy <https://www.youtube.com/watch?v=rantzks8fbU>



Excerpt: The European Union Common Agricultural Policy

The European Union (EU) Common Agricultural Policy (CAP) was launched in 1962, and is a partnership between agriculture and society, and between Europe and its farmers. It aims to:

- support farmers and improve agricultural productivity, ensuring a stable supply of affordable food;
- safeguard European Union farmers to make a reasonable living;
- help tackle climate change and the sustainable management of natural resources;
- maintain rural areas and landscapes across the EU;
- keep the rural economy alive by promoting jobs in farming, agri-foods industries and associated sectors.

The CAP is a common policy for all EU countries. It is managed and funded at European level from the resources of the EU's budget. The CAP defines the conditions that will allow farmers to fulfil their functions in society in the following ways:

15 Produce food

- There are around 10 million farms in the EU and 22 million people work regularly in the sector. They provide an impressive variety of abundant, affordable, safe and good quality products.
- The EU is known throughout the world for its food and culinary traditions and is one of the world's leading producers and net exporter of agri-food products. Due to its exceptional agricultural resources the EU could and should play a key role in ensuring food security of the world at large.

Rural community development

- Within our countryside and its precious natural resources, there are many jobs linked to farming. Farmers need machinery, buildings, fuel, fertilisers and healthcare for their animals, also known as 'upstream' sectors.

- Other people are busy in 'downstream' operations – such as preparing, processing, and packaging food, as well as in food storage, transport and retailing. The farming and food sectors together provide nearly 40 million jobs in the EU.
- 30 - To operate efficiently and remain modern and productive, farmers, upstream and downstream sectors need ready access to the latest information on agricultural issues, farming methods and market developments. During the period 2014-20, the CAP is expected to provide high-speed technologies, improved internet services and infrastructure to 18 million rural citizens – the
- 35 equivalent of 6.4% of the EU's rural population.

Environmentally sustainable farming

- Farmers have a double challenge – to produce food whilst simultaneously protecting nature and safeguarding biodiversity. Using natural resources prudently is essential for our food production and for our quality of life –
- 40 today, tomorrow and for future generations.

Extracted from https://ec.europa.eu/info/food-farming-fisheries/key-policies/com-mon-agricultural-policy/cap-glance_en 12 November 2020

Excerpt Task 1 Answer the questions

1. Is the agricultural policy of Greece compatible with the CAP. If yes/no why?

2. Are farmers responsible for protecting the biodiversity? If no, why? If yes, how?

3. How would you explain the downstream operations connected with farming? Do you think these exist in Greece?

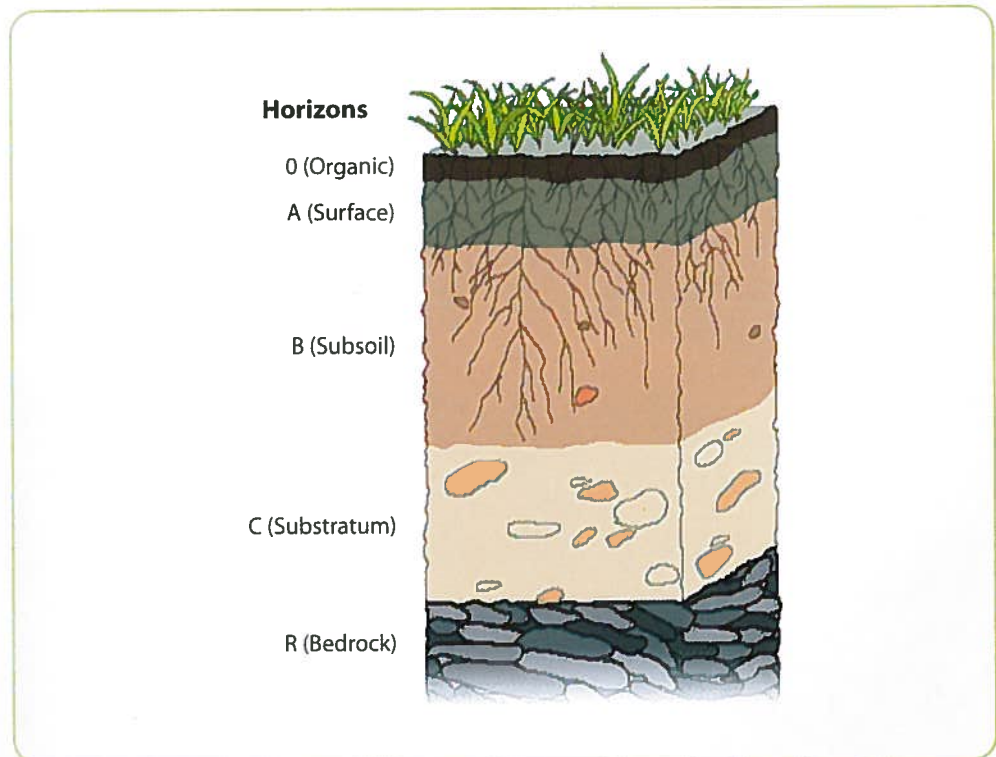
Unit 2

Soil Structure

Everything in agriculture depends on the soil and its productivity. If we wish to continue to live, we must look after our soil and understand it fully in order to produce the most and the best from it.

Soils are arranged in layers or strata just like a sandwich. These strata are called horizons and a mature soil normally has A, B and C horizons. To see the whole soil as it really is, we must look at a soil profile.

The A horizon is the covering layer. It is also called the surface soil, topsoil, or



Soil Horizons

plow layer. It varies from almost nothing to 12 inches deep, according to the nature of the subsoil underneath and the depth of cultivation. It is darker,
10 because it contains organic matter and it is easy to work. It is the real living soil; plant growth and crop production depend on the condition of the shallow layer of the soil.

The B horizon is the next layer down and is called the subsoil. It consists of the rock partly broken down and altered in some way by action from the top of
15 the soil. There is usually no organic matter in it and it is like dead soil. The roots of large plants usually grow in the subsoil. In mature soils the A and B horizons are called the solum.

Beneath the solum we have the C horizon which is the basic or parent material from which the solum has normally been formed. It may be of
20 sandstone, limestone or other hard rock, chalk, sand, silt or clay.

There are though some exceptions in the structure of profiles. An example is the regosol, a group of soils without horizons, which have developed from deep loose rock or from soft rocky deposits.

When we speak of an ABC soil, we mean a mature soil, one having three well
25 defined horizons. An AC soil is usually young or immature.



Exposed Soil Profile

Special Terms

A horizon	the covering layer in a soil profile.
B horizon	the second layer in a mature soil profile, the subsoil.
Chalk	soft, white, fine grained limestone, which is highly fossiliferous.
Clay	soil particles less than 0.002 mm in diameter; the kind of soil used for earthenware.
Horizon	a layer in a soil profile.
Limestone	a rock which consists mainly of calcium carbonate.
Organic matter	matter found in, or produced by, living organisms.
Regosol	a group of soils in which clearly defined soil horizons have not developed.
Sand	soil particles from 2.00 to 0.5 mm in diameter.
Sandstone	a sedimentary rock composed of sand particles bound together by natural cementing materials.
Silt	small, mineral, soil particles ranging from 0.05 to 0.002 mm or 0.02 to 0.002 mm in diameter.
Soil profile	a vertical section of a soil.
Solum	the A and B horizons in mature soils.
Stratum: (pl. strata)	layer.
Subsoil	the B horizon in a mature soil profile.
Topsoil	the A horizon of a soil.

Practice Tasks

Task 1 *True or False?*

1. Agricultural production depends on the soil. []
2. If we look after soil profile we can increase production. []
3. The A horizon is 12 inches deep. []

4. The solum is formed by the A and B horizons. [_]
5. Plant production depends on the condition of the solum. [_]
6. Plow layer is a synonym for topsoil. [_]
7. All horizons are of the same depth. [_]
8. All layers are formed of the same parent material. [_]

Task 2 Choose one of the options to complete the sentences

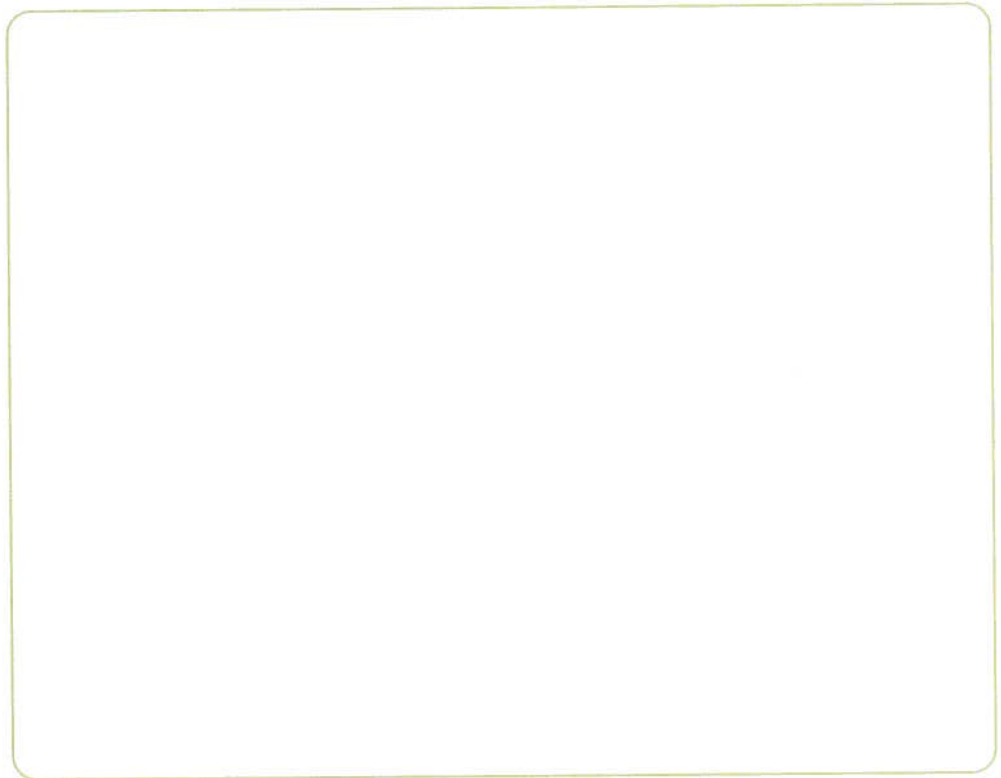
1. Usually, the soil is arranged in layers or _____ .
 - a) limestone
 - b) clay
 - c) horizons
 - d) subsidies
2. The first (A) layer of the soil is called i- _____ or ii- _____ .
 - i- a) subsoil
 - b) cultivation
 - c) crop
 - d) plow layer
 - ii- a) shallow layer
 - b) topsoil
 - c) limestone
 - d) solum
3. The real living soil is _____ ; plant growth depends on this.
 - a) subsoil
 - b) topsoil
 - c) substratum
 - d) dead soil
4. The roots of large plants usually grow in _____ .
 - a) subsoil
 - b) plow layer
 - c) topsoil
 - d) surface soil
5. In mature soils, the A and B horizons are called the _____ .
 - a) stratum
 - b) humus
 - c) solum
 - d) substratum
6. _____ is a group of soils without horizons.
 - a) loose rock
 - b) solum
 - c) regosol
 - d) layer

6. Stratum f) a group of soils in which clearly defined soil horizons have not developed.
7. Soil profile g) the topsoil.

Task 5 *List at least three materials forming the subsoil*

1. _____
2. _____
3. _____
4. _____
5. _____

Task 6 *Design a mature soil profile and write the terms of the three layers*



Task 7 Watch the video titled 'Soil Basics: Color Clues' <https://www.youtube.com/watch?v=m4YkJ1sNnZo&feature=youtu.be> and answer the questions



1. Should the soil be moist in order to determine its colour?

2. What are the principal components that attribute to the soil its colour?

3. Does iron oxidation colour differently the soil?

4. Do soils have mixtures of colours? If yes what are they called?

5. Is organic matter important in the colouring of soil?

Excerpt: What can Soil Colour Tell you?

Soils come in many different colours. Words alone cannot describe these differences very well because it is difficult to explain the slight variations that our eyes can see. Artists, painters, and soil scientists use the Munsell colour system to help describe colours more precisely using three components of colour: hue, value, and chroma. Soils are mostly brown or tan unless they were formed from a rock with an unusual colour. However, organic matter (OM), iron oxides, and long-term contact with water changes soil colour. Iron minerals are responsible for brown, red, and yellow colours in the soil. OM usually makes soils dark brown or black. Increasing organic matter typically improves soil health, because OM improves soil productivity through physical, chemical, and biological actions. OM is a small part of soil, just 2%–5% and is mainly on the soil surface. Contact with water over long periods of time creates waterlogged soil that becomes clay (rhymes with grey) coloured. When soils are waterlogged, they become oxygen-depleted and turn dull blue, grey, or green. These colours usually indicate a soil that is wet most of the time. Understanding the colour of the soil is important, particularly for clay soils. Homes should not be built on clay soils because drainage is likely to be a problem. A brown soil will have much better drainage than a clay soil. Hue is the general shade; value tells you where the colour is on a scale from black to white; and chroma describes the brightness of a colour.

Delve Deeper Into...

Main Threats of the Soils of Greece

Agricultural land worldwide is seriously threatened by degradation due to climatic change and mismanagement. In extreme cases, land degradation leads to desertification, i.e., a non-reversible step. Desertification is considered as the greatest threat of land resources which led to the United Nations to sign the United Nations Convention to Combat Desertification (U.N.C.C.D.) in 1974. Since the Mediterranean environment is favorable to land degradation, in the convention a special appendix was devoted to the Mediterranean countries (Annex IV). In Greece, the convention legislated and entered into force in 1997 with the law 2468/97 which imposed the implementation of a National Program of Action through which an appointed committee prepared a plan of measures to combat desertification. At the same time, the European Union funded a series of research projects to obtain a better knowledge on the desertification progress and processes through which a substantial advancement was made on these issues. A number of indicators were developed through the recent research in Europe to present the environmental sensitivity to desertification, grouped in four categories including soil, climate, vegetation, and management (Kosmas et al. 1999). Among them, soil and management factors have the greatest effect on desertification.