BIOLOGICAL AND PHYSIO-CHEMICAL IMPACTS

SOIL

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Soil

All the information for the characterization of this environmental component come from bibliographic data and from geological and geotechnical investigations executed for project, and even less from field data collected during the field inspection.

This environmental component can either suffer impacts from project actions or induce risk situations on the project itself; once characterized the area and defined his geological, tectonic and geomorphological peculiarity, we can provide to identify more sensible areas (unstable areas for example) and more significative impacts whether during construction or during operation.

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Soil

Here we have a list of some of the potential impacts for the Soil environmental component during construction:

- **Soil pollution;**
- **Changing of the geotechnical properties of the ground and changing of the stability of the slopes;**
- **Geomechanic problems;**
- **Activation/increase of the geomorphological processes;**
- **Direct interference with karst structures;**
- **Changing in pedological properties of the ground.**

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Here we have one of the most important potential impacts for the Soil environmental component during operation:

- **Damaging of structures by landslides and geomorphological processes;**

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- **Soil pollution**

Alteration of physio-chemical characteristics of soil caused by the contribution of extraneous substances; decrease of fertility and self depuration capability; predisposition to quick erosion.

- **Changing of the geotechnical properties of the ground and changing of the stability of the slopes**

Quaternary grounds on the slope can directly represent the substrate of foundation (like moraines) or eluvial and colluvial grounds not able, for thicknesses and heterogeneity geotechnics to offer qualify stability conditions.

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- **Geomechanic problems**

Presence of grounds with bad geomechanic characteristics, especially during tunnel construction (presence of mylonitic belts) and during the crossing of great rivers (presence of clay and limes).

- **Activation/increase of the geomorphological processes**

Deforestation, preparation of construction site, excavation of opencut and excavation for foundations can modify the erosion capability of the rainwater, increasing erosive geomorphologic processes.

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- **Direct interference with karst structures**

Changing of the shear and of the underground hydrologic system.

- **Changing in pedological properties of the soil**

Removal of the upper soil surface, tamping of the soil, mixing of different soil horizons.

BIOLOGICAL AND PHYSIO-CHEMICAL IMPACTS

Soil – Critical areas

- **Alluvial cone**

Presence of plantation, often of great value;

High permeability

BIOLOGICAL AND PHYSIO-CHEMICAL IMPACTS

Soil – Critical areas

- **Scree**

High instability;

High permeability;

Difficulty in restoring vegetation

BIOLOGICAL AND PHYSIO-CHEMICAL IMPACTS

Soil – Critical areas

- **Alluvial valley**

Presence of plantation, often of great value;

High permeability;

Presence of ground with very heterogeneous and bad geotechnic characteristics

BIOLOGICAL AND PHYSIO-CHEMICAL IMPACTS

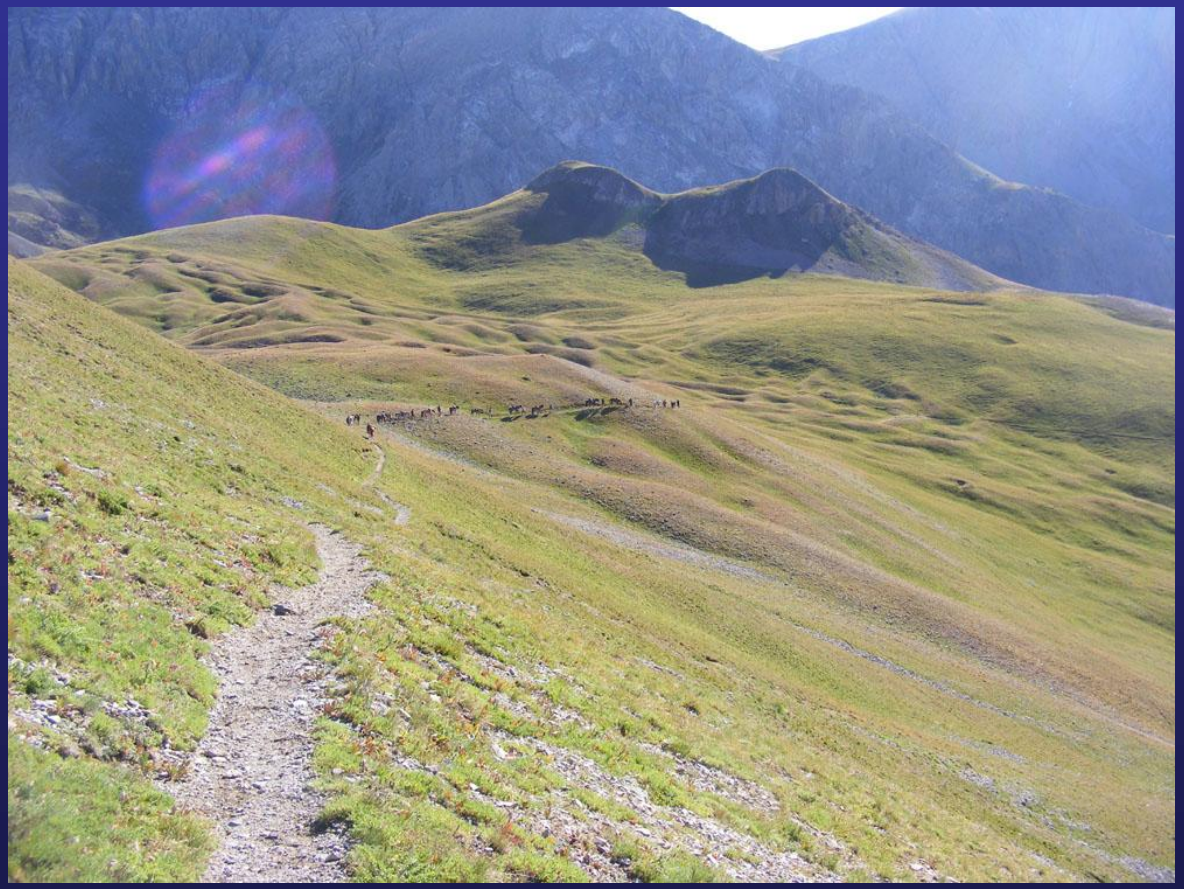
Soil – Critical areas

- **Areas without vegetation**

Lack of soil;

Attitude to erosion;

Difficulty in restoring vegetation



BIOLOGICAL AND PHYSIO-CHEMICAL IMPACTS

Soil – Critical areas

- **Areas with high landslide attitude**

High instability;

Attitude to erosion;

Difficulty in restoring vegetation