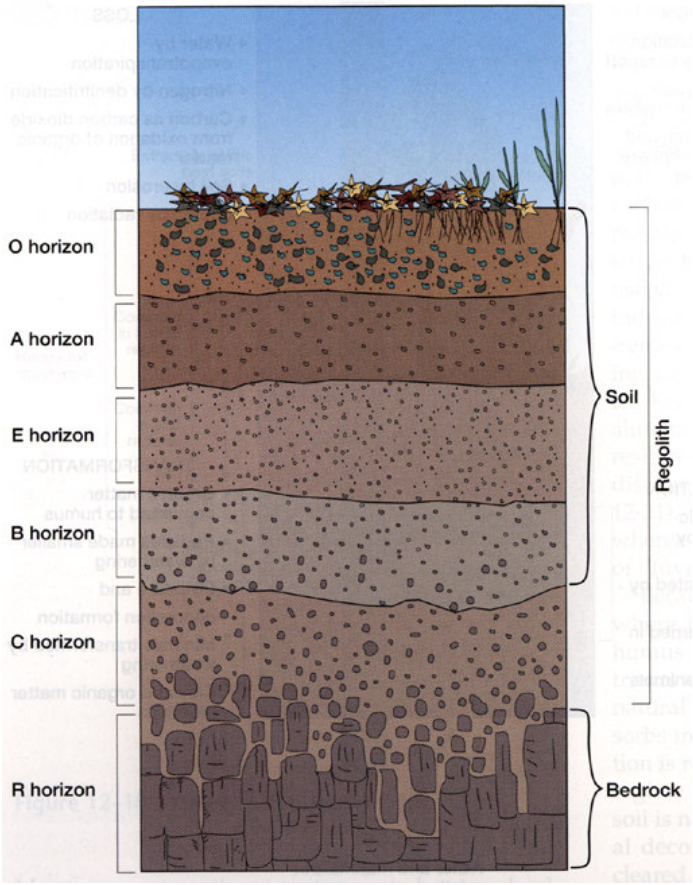
17. Soil-forming processes and soil types

Everything that affects formation, development, characteristics and geographic distribution of soils belongs to soil-forming factors. That´s why the Earth´s soil cover is very diverse.
Give some examples of these factors!

Impact of soil-forming factors results in soil-forming processes = scheme (group) of physical, chemical and biological effects taking place within soil.
These processes split up soil cover into **soil horizons**.
They are segmented by different colours and characteristics. Soil horizons are organized regularly => **soil profile** = vertical cross-section through a soil.
Soil type is affected by the sequence (order) of soil horizons. It is the most basic classification unit of soils.
Soil type = group of particular soils formed by the influence of similar combination of soil-forming factors.
Certain soil type has equally organized horizons and *soil fertility* is more or less the same.

- *O* = organic horizon, humus (leaves or needles)
- *A* = topsoil, humus mixed with minerals, grey-brown colour
- *E* = eluvial, depleted horizon
- *B* = illuvial, enriched horizon
- *C* = parent rock
- *R* = bedrock, seat rock



On global scale, pedosphere is affected mainly by climate. Main soil types change from equator polewards (according to *latitude*) and from foothills to peaks (according to *altitude*).

- Equatorial zone: *red-yellow soils*, i.e. *ferralitic soils* of rainforests in Amazon and Congo basin and in SE Asia
- Subequatorial zone: *red ferruginous soils* of savannas, leaching of Fe or Al
- Tropical zone: *desert soils*, salinisation
- Subtropical zone: *yellow soils* and *terra rosa soils* ⇔ ferric oxides, in SE USA, C + E China
- Temperate zone:
  - deciduous forests – chestnut-coloured soils (*brown earths*)
  - steppes (pampas, prairies) – chernozems (*black earths*) = the most fertile soils ⇔ plant remains which created up to 100 cm deep topsoil cover
  - taiga (coniferous forests) = *podzols*
- Polar zone: *permafrost*

Keywords
soil-forming factors/processes, soil horizon/profile, soil fertility, humus, topsoil, depleted/enriched horizon, parent/seat rock, foothill, ferralitic soils, rainforest, ferruginous, leaching, salinisation, terra rosa soil, brown/black earth, podzols, permafrost