

Session 1 Soil degradation processes

Rapporteur
Tomáš Rätinger

- Four presentations
 - SoCo: European overview on soil degradation processes related to agriculture (E. Rusco, L. Montanarella, B. Maréchal)
 - Identifying soil degradation processes (T. Stuczynski)
 - How to adapt European agriculture to the challenges of a changing world? (J. F. Sarreau)
 - Effective agricultural soil policy tailored to local-level conditions (M. Kibblewhite)

- Soil state=f(
 - soil type,
 - environmental conditions (topography, climate-weather, ...)
 - Management system (technology, organisation,...)
)
- Concern about
 - Δ soil state/ Δ management system >0

- Soil state
 - Not a simple variable (actually it is a process)
 - Typology of soil states (degradations)
 - Erosion, loss of OM, compaction, salinisation, contamination
 - Amplitude
 - And dynamics (Δ soil state)
- How to measure soil state and
- How to judge if it is critical (depends on impacts)
 - Problem illustrated on soil erosion – T factor

- Linking soil state with
 - Soil types
 - Environmental conditions
 - (Current soil management)
- Model calculations
- Monitoring
- → assessment of soil degradation risk
- → risk areas for which policy to change soil management is needed

- Policy objectives
 - To achieve a certain state (which will inevitably soil and environmental conditions specific)
 - To put forward a process of positive changes (Δ soil state)
- → set targets for soil risk areas
- → action plans for risk areas
- The critical issues:
 - to know the **f** i.e. cause-and-effect
 - How to take stochastic variables (weather) into account
 - Going from upper levels (regions) to lower levels (farms)

- Soil state have to be assessed as whole, not only individual degradation types
- Extensive monitoring is needed
- In spite of all the problems we have sufficient knowledge to
 - Identify problems and to allocate risk areas
 - Specify soil conservation targets
 - Tailor soil conservation to needs and farm management possibilities (e.g. BRILLO)
- Conservation agriculture is a robust solution to a range of soil degradation issues and a range of soil and environmental conditions