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Termőföldtől az asztalig

Hungarian Soil Monitoring System

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National Food Chain Safety Office
Hungary

*Workshop to develop 250000 soil database for Danube Basin using eSOTER methodology
Ispra 5-6th February 2015.*

Nemzeti Élelmiszerlánc-biztonsági Hivatal



Soil Monitoring System (TIM)



- The aim of the Hungarian soil Monitoring System (TIM) is describing the soil resources (baseline condition) and keeping track of the changes in soil properties over time.
- Legislative background: Act of 2007. CXXIX on Arable Land 33 § (1)
- System design (1991): a group of soil experts from the Research Institute for Soil Science and Agricultural Chemistry, the Soil Conservation Service, Ministry for Agriculture, Ministry for Environment



Method of data collection



- Sampling: soil conservation experts of county agricultural offices (Dept. of Plant Protection and Soil Conservation)
- Laboratory analyses: regional soil conservation laboratories and the soil biology laboratory
- Coordination and data management: National Food Chain Safety Office Dept. of Plant Protection and Soil Conservation



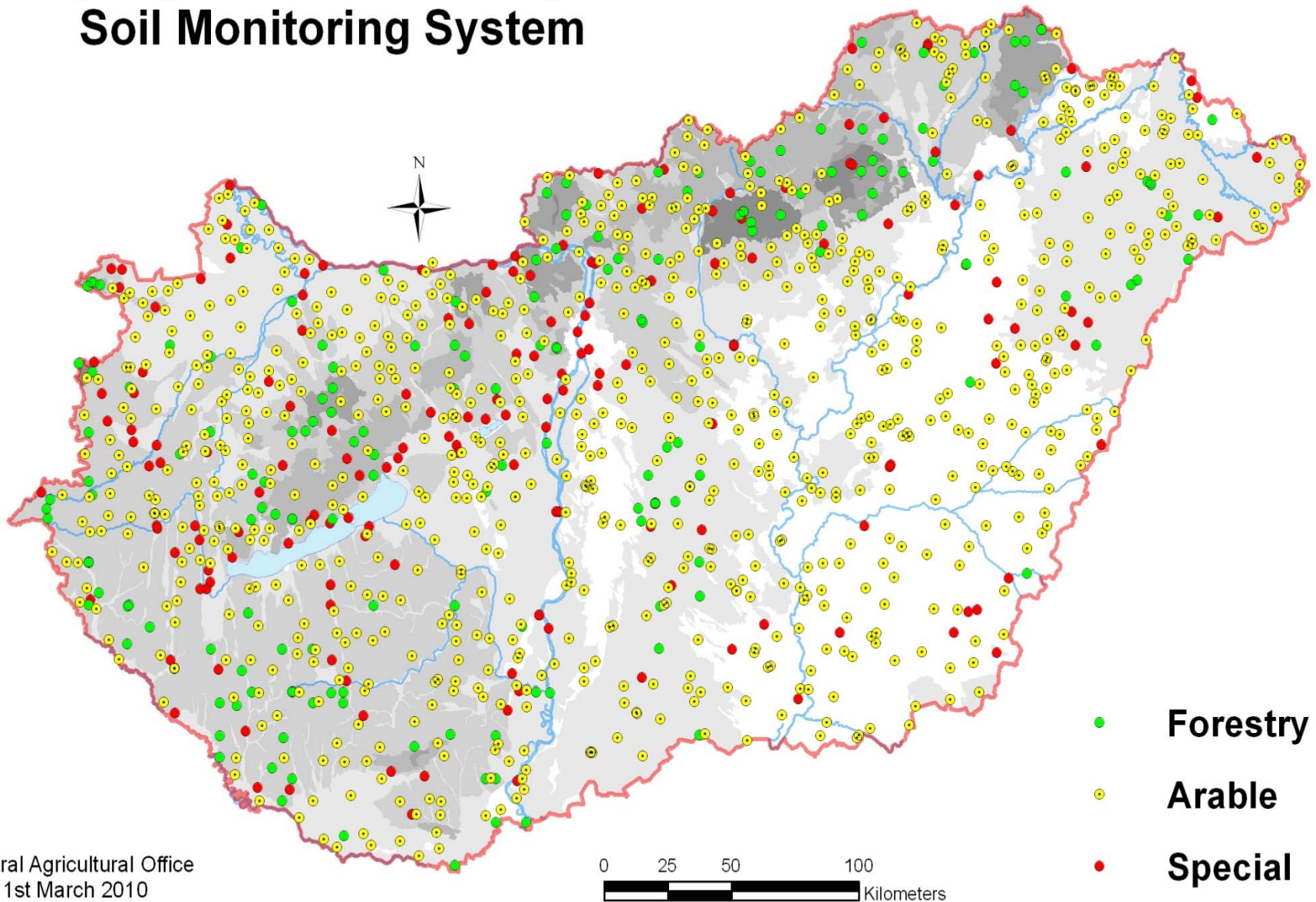
Sampling



- Sampling design is based on existing maps, data and expert knowledge
- Representative profile of smaller geographic area
- 1236 sampling sites:
 - 865 arable land
 - 183 forest
 - 188 special (degraded land, sensitive areas, contamination)



Sampling sites of the Hungarian Soil Monitoring System



Central Agricultural Office
1st March 2010

Sampling



- Every year between 15th September and 15th October
- First sampling 1992,
- 150 cm deep soil profiles, all on site analysis for soil mapping and detailed profile description
- Other years: drilling samples from genetic horizons (1992-2000)
- From 2000 Layers: 0-30, 30-60, 60-90 cm, except for forestry points and some special points
- Composite sample out of 9 point sample
- Sample bank: first year and every 3 years



Measured parameters



- **Baseline condition:** detailed analysis physical chemical and microbiological parameters
- **Baseline condition only:**
 - bulk density,
 - particle size distribution,
 - hydrological parameters,
 - cation exchange capacity,
 - exchangeable cations,



Measured parameters

- Every year:
 - CaCO_3 content,
 - pH (water, KCl),
 - hydrolitic acidity,
 - salt content,
 - nitrate content

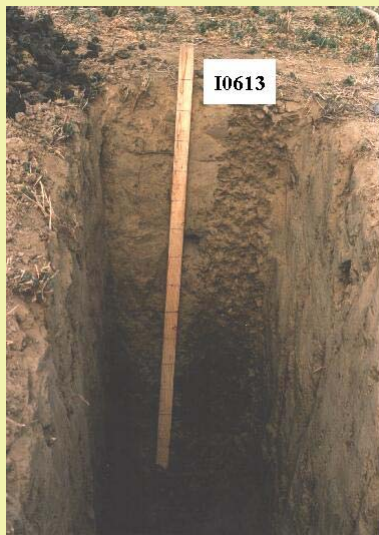


Measured parameters



- Every 3rd years:
 - phenolphthalein reaction (salic/sodic soils),
 - organic matter content,
 - total N content,
 - available nutrients,
 - plasticity,
 - biological parameters
- Every 6 years:
 - toxic elements,





Thank you
for
your
attention!

