The Best Way to Save the Priceless Soil - Crop Rotation

Wind erosion, water erosion, soil fertility degradation, intensive cultivation, imbalance of nutritious material – are the most common risks for agriculture as well as for the nature.

Picture 3: infertile soil

Some systems are much more prone to water erosion than others. When crops are harvested in the late autumn under unfavourable soil conditions, as it is for forage maize for animal feed and vegetables, the soil is under the inestimable risk for water and wind erosion. Long term leys and permanent extensively usable pasture usually decrease the risk. Fine seedbeds and/or bare ground are much more susceptible to erosion than soils with a good crop cover. As for wind erosion, cultivated, sandy, dry and peaty soils are most susceptible in the spring before the crops sprout under the surface of the ground. Planting shelter belts and keeping field sizes small can help reduce wind erosion, but this is not enough.

Crop rotation is the systematic management of planting different crops in a particular previously considered order over several years in the same growing space. This process helps maintain the soil fertile, reduce wind and water erosion, as well as it prevents plant diseases and pests.

Picture 1. Three-field rotation system: wheat, fallow, meadow (pasture)

There is no universally accepted rotation schedule or system as the types of plants in a particular farm or garden depend on the local soil, climate, and resources available. Crops and seeds can be separated into different categories - heavy nitrogen using plants (e.g., wheat) and a nitrogen depositing plants (e.g., beans, peas). Rotation of it helps to maintain nutritious material balance in soil. There are plants exceptionally prone to the pests as brassicas (e.g. rapeseed, cabbage), so they should be rotated with different class of plants – grain crops, beans, clover, etc. to control pests and diseases.

Picture 2: four-field crop rotation: rapeseeds, fallow, meadow (pasture), rye.

To sum up, managing crop rotation, leaving seedbeds after the harvesting, using no-till technology, avoiding late planted autumn sown, using green manures, and using natural resources consciously can help stabilize the soil and keep it fertilized.