

# The CAP & Soil

## Soil

We depend on soil for our food, fibre, construction material, clean water, clean air, climate regulation, and even some antibiotics. Soil organic matter stores and releases the nutrients that sustain life on earth. Micro-organisms in the soil provide a balanced environment where plants can grow and are protected against diseases, contribute to water purification and help remove pollution and pathogens.

Appropriate agricultural practices (e.g. crop rotation<sup>1</sup>) can maintain and enhance organic matter in the soil and sustain the ecosystem services that good soil quality can provide. But unsustainable agriculture can accelerate water and wind erosion, drain soil organic matter and cause loss of soil fertility. Overgrazing by cattle and use of heavy machinery can cause soil compaction, suffocating soil life, and the mismanagement of soil worsens climate change by releasing soil carbon. Irrigation can lead to salinisation and water logging, which reduces soil quality and diminishes crop yields.

European agriculture is losing its organic matter. Production with high input of fertilisers, pesticides and energy gives a high yield, but also creates a net loss of organic matter<sup>2</sup> (this loss is accelerated by the high use of nitrogen fertilisers<sup>3</sup>). A radical shift in agricultural practices is needed.



## Facts & figures

- As much as five tonnes of animal life can live in 1ha of soil<sup>4</sup>.
- Soil holds 1/4 of all biodiversity on earth<sup>5</sup>.
- Yearly economic losses in affected agricultural areas in Europe are estimated at around €53/ha, while the costs of off-site effects on the surrounding civil public infrastructures are estimated to cost €32/ha<sup>6</sup>. The overall cost of soil degradation in the EU is estimated at €38 billion/year<sup>7</sup>.
- Worldwide it is estimated that 70% of all agricultural area (3,500 million ha) is degraded<sup>8</sup>.
- 115 million ha, or 12% of Europe's total land area, are affected by water erosion. 42 million ha are affected by wind erosion<sup>9</sup>.
- EU soils contain more than 70 billion tonnes of organic carbon, which equals around 7% of the total global carbon budget<sup>10</sup>. A loss of 0.1% of carbon from EU soils is equivalent to carbon emissions of 100 million extra cars, or about half the existing EU car fleet<sup>11</sup>.

## Recommendation

**The CAP needs profound change to support the kinds of farming Europe needs in the 21st century. Public money must support public goods. Taxpayers must see real value for the billions they invest in the CAP. Those who farm sustainably must be effectively supported while those who harm the environment should receive no public money.**

**If politicians are serious about protecting our soils they must support a fundamental CAP reform now and adopt an EU soil Directive<sup>12</sup>.**



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pic1: ©Ariel Brunner, pic2: CSO Archive

## The SoCo project - a blueprint for better stewardship of our soil

The European Parliament has requested the European Commission to carry out a project entitled "Sustainable Agriculture and Soil Conservation" (SoCo) which considers soil conservation through simplified cultivation techniques as a key element towards sustainable agriculture<sup>13</sup>. The project started in 2007 and was finalised in 2009. In addition to improving the knowledge on soil conservation agriculture and the related policy framework, the project covers dissemination activities to relevant stakeholders and policy makers in an EU-wide context.

The most successful recommendations presented by the SoCo project to address diverse aspects of soil degradation are the following<sup>14</sup>:

- Targeting water erosion by minimising the area of bare soil and adequate land management reflecting site-specific conditions
- Targeting soil organic matter and soil biodiversity decline through arable stubble management
- Improving soil quality on arable land through the obligation for the farmers to complete an annual Soil Protection Review.



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## Counteracting soil decline through improved soil diagnostics in Finland

The decline in the soil structure is often not detected by farmers because conventional monitoring methods do not give sufficient information about the soil structure. Thus farmers are normally unaware of the consequences of their activities affecting soil structure.

To counteract this problem Finnish farmers get advice on soil structure. Advisors, together with the farmers, take soil samples in regular intervals to check soil structure. Farmers can undertake a simplified version of the "spade diagnostics" by themselves. This results in higher awareness and allows farmers to undertake measures to improve soil structure if necessary<sup>15</sup>.



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## Soil Erosion in the Czech Republic

Soil erosion is one of the most important environmental threats in the Czech Republic. The Research Institute for Soil and Water Conservation estimates that the annual soil loss is more than 21 million tonnes, valued at approximately 169 million Euro<sup>16</sup>.

The most common type of erosion is caused by water, especially in the hilly and mountainous areas; in some regions (mainly lowland) also wind erosion can be a problem. 76,5% of the land is threatened by water erosion and 19,4%

is threatened by wind erosion. In total 42% of agricultural land is in some way threatened by erosion (a third of that for water alone).

New GAEC (Good Agricultural and Environmental Condition) rules impose stricter conditions for the farmers, but only around 11% of the arable land and 17% of the total farmland are required to fulfil the conditions for reducing soil erosion<sup>17</sup>. Most farmland is not covered yet so further enlargement of the area under GAEC conditions is planned.



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