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## **Sustainable Soil Management: Its perception and the need for policy intervention**

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As stated in the strategic objectives of the Global Soil Partnership “healthy soils and sustainable soil management are the precondition for human well-being and economic welfare and therefore play the key role for sustainable development”. Although the functional properties of a healthy soil are well understood, in practice it is easily overlooked what is necessary to achieve and sustain healthy agricultural soils.

This contribution intends: to discuss the concept of sustainable soil management in agricultural production with regard to soil health, and to highlight its importance in the achievement of both Sustainable Development Goals and the 4 per mille objectives, as well as for the Common Agricultural Policy (CAP).

In Europe, soil and the need for its conservation and stewardship gained visibility at the beginning of this century during the discussions related to the Soil Thematic Strategy. This higher level of awareness concerning the status of Europe’s soils led to the introduction of soil conservation standards into the cross-compliance mechanism within the 1st Pillar of CAP. These standards were applied through the definition of Good Agricultural and Environmental Conditions (GAECs) which are compulsory for all farmers receiving direct payments, and in the last CAP reform in 2014, through the introduction of additional Greening Measures in Pillar 1. Despite these measures and the claim of some writers that they already contributed to significantly reducing soil erosion, the EC Joint Research Centre still reports water erosion in Europe amounting to almost one billion tonnes annually.

Regarding soil conservation, soil carbon stocks or the provision of additional ecosystem services, measures called for in GAEC 4 (Minimum soil cover), in GAEC 5 (Minimum land management re[U+FB02]ecting site speci[U+FB01]c conditions to limit soil erosion), and in GAEC 6 (Maintenance of soil organic matter level through appropriate practices, . . .), give the impression that a lot is being done to conserve Europe’s agricultural soils. Knowing, however, that it is the member states who define these standards allowing them to be tailored to national and regional contexts, it becomes clear why agricultural practices and soil management on the majority of European cropland still follow a ‘business-as-usual’ model. Further, the introduction of the ‘Greening’ obligations continue to maintain the status quo for Europe’s cropland soils as there is no added value opportunity available beyond the 5% Ecological Focus Area, accounted for by the existing landscape areas not directly used for production, and the maintenance of permanent pasture lands.

In light of the above, urgent action is needed to extend these timid efforts of agricultural soil conservation to include measures that can apply directly to a much larger area under agricultural production while preserving and enhancing the production potential and capacity of the farmland. Crop production and agricultural land management based on the principles of Conservation Agriculture (no-till seeding and weeding, maintaining soil mulch cover, crop diversification) has proven to improve decisively the delivery of all soil-mediated productivity and ecosystem services, including soil carbon sequestration (4 per mille), the efficient use of natural resources and external inputs and thus improved cost efficiency and profit, while maintaining or increasing productivity. However, especially in Europe, institutional and policy support is needed to mainstream this truly agro-ecological approach of Conservation Agriculture to sustainable farming and land management.

Keywords: Soil health, Common Agricultural Policy, Conservation Agriculture, Ecosystem Services, Productivity