

SOIL MANAGEMENT AND SUSTAINABLE APPROACHES FOR ACHIEVING THE EU GREEN DEAL

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ABSTRACT

Soil is a fragile, non-renewable resource essential for all life-sustaining processes on our planet, thus it needs to be carefully managed and safeguarded for future generations. Over 60% of soils in the EU are in unhealthy state mainly because of human activities (e.g., intensive land use, pollution, poor soil structure due to compaction, loss of biodiversity, loss of soil carbon, occurrence of erosion, consumption patterns and urbanisation) that are exacerbated by climate change. Given that soils deliver public goods, restoring soil health is crucial for achieving the United Nations' Sustainable Development Goals (SDGs), together to the objectives of the EU Green Deal. The SDGs related to soil are: 2. *Zero hunger*; 3. *Health*; 6. *Clean water and sanitation*; 7. *Energy use*; 12. *Sustainable consumption and production*; 13. *Climate action*; 15. *Life on land*, each of them being specified by targets and indicators intended to be applied worldwide. However, neither UN agreement on SDGs or the EU Green Deal do not address operational methods or approaches by which these targets can be reached.

Therefore, this paper aims to focus the attention of soil science and business community on developing successful sustainable soil management approaches which may be applied toward realizing the SDGs, rather than to only understand soil science. These approaches have to use the “soil health concept” in a holistic manner that proves to be advantageous over traditional soil quality assessments (focused only on soil fertility and agricultural production) because it envisages both nature and human driven objectives.

The paper reveals that progress in sustainable soil management relies upon the development of holistic indicators for soil health that need to be evaluated under site-specific conditions that account for the different processes of different geological, climatic, and societal conditions. Moreover, it was revealed an obvious need of an interdisciplinary research that may provide studies regarding the impacts of soil systems on the socioeconomic systems. Through this paper is offered an alternative approach to developing effective soil management, where soil scientists and stakeholders work jointly to use European funds for achieving the Green Deal objectives.