
Editorial

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Definitions of agricultural sustainability require that farming practices produce healthy food and fibre for current and future generations in an equitable manner without degrading natural resources. Sustainable agriculture is based only on a functional and productive system with high biodiversity and system self-regulation. Proponents of sustainable agriculture frequently advocate systems modelled on nature that maintain production without loss or degradation of soil or other natural resources, and suggest that key elements of optimised systems include nutrient recycling where nutrients are supplied in proportion to the system within which they reside. Plant–soil interactions and organic matter reserves develop as characteristics of agricultural systems, and this feedback determines the degree to which sustained production can be maintained.

Also biodiversity is important for maintaining essential ecological functions. A diversity of microorganisms below and above ground, plants and animals is required to maintain essential functions such as decomposition, nutrient cycling, soil formation, detoxification, natural pest regulation and pollination. Considerable value of biodiversity may come from supporting resistance and resilience of ecosystems in the face of perturbations. This is true for both agricultural production and natural ecosystems. Although agricultural fields are greatly simplified in comparison with natural ecosystems, they are still dependent on complex natural interactions and processes driven by organisms. However, the amount of biodiversity needed for the continued resilience and productivity of arable systems remains a scientific challenge.

In Europe, with its high proportion of land under agriculture and long history of environmental modification, there are often no boundaries between food production areas, cultural landscapes and wildlife habitats. At the European scale, farmland encompasses a dazzling variety of habitat types as different as dry steppe grasslands and rice fields, vineyards and mountainous pastures. This variety supports rich farmland biodiversity over the continent. Farmland has the highest overall species richness of birds of any habitat type in Europe, and the total number of vascular plants regularly occurring on arable land exceeds one thousand. At least 10–15% of all vascular plants use arable land as their main habitat.

Sustainable agriculture cannot be ensured without systemic solutions in politics and agricultural economics. This special issue of the journal on ‘Sustainability in the Agriculture Sector in Europe’ is focused precisely on these sectors within the European Union and outside of EU. The first paper discusses producers’ organisations for sustainable development of agriculture. Producers’ organisations help farmers to consolidate their market orientation and thus generate a solid market income. The paper provides an analysis of the current level of development of producers’ organisations,

identifies factors that enable or constrain their sustainable development as well as specific measures and initiatives that have proved to be effective for producers' organisations in Slovakia.

The second paper is about the distribution of LEADER support designed to local agricultural products in Poland. This method was designed to support non-agricultural activities, but in practice it also supports certain forms of agriculture including the production of local products based on local resources and potential, which is an alternative to intensive factory-type agriculture.

The third paper provides a review of the application of the High Nature Value concept in Estonia within the context of the EU. This paper was included to highlight an uneasy connection between natural processes (such as the structure and function of ecosystems, ecosystem services, etc.) and agricultural policies.

An analysis of development processes in the sustainable agriculture development outside the EU can bring different perspectives that are mainly caused by different historical and current political and economic framework. These differences are highlighted in other two papers from the Russian Federation (Kaliningrad Oblast) and Ukraine. The first of these papers presents integrated approach to sustainable development of rural areas related to agriculture. The second one deals with community-based approach to local development as a basis for sustainable agriculture. Both papers enhance the responsibility of local and regional communities and their policies.

Similarly, the last paper on municipal spatial planning is of a comparable nature, but it describes a different political environment with surprising findings. The paper describes an approach of Swedish municipalities to the preservation of agricultural land in a planning context. It includes three empirical studies on policies, strategies and motives pertaining to the preservation of agricultural land.

There is certainly a greater number of socio-economic methods, policy instruments and possible trends and approaches to the creation and development of sustainable use of agricultural landscape and its ecosystems, but the guest editor hopes that here presented diversity of experiences and analyses can also contribute to a better understanding of current trends and knowledge in the sustainable agriculture in Europe.