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SUMMARY

**Assessment of the sustainability of agricultural farms on light soils
in the Przysucha powiat of Poland.**

Key words: sustainable development, agricultural farm, type of production, criteria and indicators of evaluation

The aim of the study was to evaluate the sustainable development of agricultural farms depending on the type of production, agricultural area, soil quality, and production intensity. The research was conducted in 2005 in 100 farms located on light soils in the powiat of Przysucha (Mazowieckie Voivodeship) in Poland. The method of obtaining information and source data from farms was a direct interview with the use of a specially prepared questionnaire. A targeted selection of treatments for research was applied from among farms cooperating with the Agricultural Advisory Centre in Radom, Poland. On the basis of the type of production, fruit, vegetable, mixed and cattle farms were distinguished. The evaluation included production, economic and ecological criteria and indices.

The research showed that in terms of basic factors of production, cattle farms had the largest area of agricultural land, the weakest soils, the smallest resources of labour and train force (per 1 ha AL), as well as by the lowest level of education of owners. However, these features were different in the group of orchard farms. Vegetable and mixed farms had an indirect state of resources. The production results of farms

depended on their area, soil quality and production intensity measured by the amount of direct costs incurred per 1 ha of AL. A larger area of farms had a positive influence on the level of agricultural production in cereal units and at the same time, on the value of commercial and global production in relation to 1 ha of AL. Better quality soils and higher production intensity facilitated the achievement of higher commercial and global production.

In the economic assessment, farms focused on vegetable production stood out, as they achieved the most favourable indicators in terms of agricultural income and income parity. In this assessment, the worst indicators were obtained by mixed farms (combining animal and crop production). The agricultural land area had a significant positive impact on economic indicators (income) of vegetable, mixed and cattle farms, while the quality of soils had a similar effect on income only in vegetable farms. The intensity of production, i.e. the amount of direct costs (PLN/ha AL), significantly influenced the commercial production in fruit and vegetable farms. In ecological evaluation the compared groups of farms were characterized by significant positive balances of mineral components (NPK) and organic matter in soil and unfavourable index of soil vegetation coverage. In the conditions of very light soils and at a higher level of production intensity, the balance of mineral components had the highest values.

As regards the compliance of agricultural practices with the principles of sustainable development of farms, assessed by the synthetic indicator, all the tested farms presented a high level of sustainability. Among them, orchard farms were more sustainable and cattle farms were less sustainable. The level of sustainability of vegetable and cattle farms depended on soil quality and production intensity, and in the case of cattle, also on the utilised agricultural area. Under better quality soils and

with more intensive production and more surface area, farms achieved a higher level of sustainability. No such relationships were found in fruit orchards and mixed farms. Among the three objectives of sustainable management, only two of them, i.e. production (marketability) and economic (profitability), were achieved at a high level by vegetable farms. In the case of other farms, the idea of sustainable development was more difficult to implement.