



Tropentag, October 9-11, 2007, Witzenhausen

“Utilisation of diversity in land use systems:
Sustainable and organic approaches to meet human needs”

Land Use Change Analysis and Sustainable Use of Land Resources in Turkey

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Abstract

Intense utilisation of farm chemicals, mechanisation, as well as improved seeds and improved animal breeds in production as a result of the industrial revolution and green revolution since the 1950s has totally changed the structure of agricultural production. In parallel with the technological improvements, meadows and pastures, forest lands, and common property have also been open to agriculture via cultivating and this process has been supported, indirectly, through agricultural policy tools such as input subsidies and support prices. As a result of intensive use of chemicals and uncontrolled expansion of farmland, caused various environmental problems and these problems have negative impacts on human health.

However, land that is cultivable and can be made available for agricultural production reached their final limits in the 1970s. The main objective in increasing agricultural production has been boosting productivity per unit area and animal since then. The intensive agriculture has accelerated in land erosion, and a drop in the quality of non-renewable resources as well as a rapid degradation. In addition to the changes observed throughout time in land utilisation forms in agriculture, in the 1950–2005 period, the most productive farmlands that should be protected, were used for urbanisation, industrialisation, infrastructure, and tourism investments and it has not been possible to cease this process despite the legal arrangements.

In this paper, changes in land use, and factors affecting these (such as intensifying in agricultural production, population increase/urbanisation rate, increases in incomes, transportation, and incentive policies) are analysed using the 1950–2005 period data. The main factors affecting land use are analysed more detailed through mathematical models and the opportunities of sustainable utilisation of land resources are evaluated. Regional variations in land utilisation (such as utilisation for agriculture, forestry, meadows and pastures, and with other purposes) are analysed both in an overall sense and using mathematical models. Regulations for conservation of productive land for farming and opportunities to ensure meeting the food demands of the rapidly increasing population and prospects to control and monitor the changes in the current land utilisation forms are also briefly discussed.

Keywords: Land use, Turkey, mathematical models

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