

GEAR-Symposium, 27.-31.8.2001, Cairo, Egypt

**“Umweltverschmutzung in Ägypten:
Folgen für Mensch, Tier und Pflanze”**

Soil Degradation and its impact on crop and livestock production in the Ethiopian Highlands

Gezahegn Ayele (Ph.D)
Debre Zeit Agricultural Research Center/EARO
PO. Box. 32
e-mail: dzarc@telecom.net.et
Fax. 251-1-338061
Tel. 251-1-338555

Abstract

The highlands of Ethiopia, which is located above 1500 m.a.sl supports the majority of crop and livestock production. The highland covers 40% of the landmass but accounts for about 95% of all cultivated land, comprising 88% of the total human and 70% of the total livestock population. It is estimated that over 90% of the economic activities are concentrated in these areas. Low agricultural productivity, poverty and land degradation are major problems in the Highlands of Ethiopia. One of the main environmental problems is land degradation, in the form of soil erosion, gully formation, soil fertility loss and severe soil moisture stress, which is partly the result of loss in soil depth and organic matter. Deforestation, overgrazing, population growth and economic policies all contribute to land degradation and consequent soil loss.

This paper examines the impact of soil erosion on crop-livestock production both at national and on-farm levels. Taking account of the premise of the Ethiopian Highland Reclamation study and other secondary sources of data, the major impact of soil erosion on crop-livestock production in Ethiopia derives from reduced soil and water availability caused by a reduction of soil depth. Using the 1985-1997 projections the increasing annual financial costs of grain and livestock production foregone due to top soil erosion and nutrient would amount to an overall annual decline of the 1985 agricultural GDP of about 3.5%. This would indicate that one of the reasons for the slow growth in agricultural production is attributed to the increasing negative impacts of land degradation, which is a minus from any real increase in productivity. This in turn will threatens the food security of the highland population.

Conservation based technologies have to be introduced combined with appropriate policy and incentive measures to ameliorate the trend in Ethiopian Highlands. Where markets are not developed or improved and technology is not introduced crop-livestock production declines and degradation is expected to accelerate.