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“Biophysical and Socio-economic Frame Conditions
for the Sustainable Management
of Natural Resources”

Sustainable Management of Resources in Agriculture — A New GTZ Program

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Abstract

With a steadily growing world population the worldwide demand for food is increasing. Simultaneously the arable land and the access to freshwater are becoming scarce. Moreover agriculture is increasingly suffering from the effects of climate change. As 40% of the worldwide food production originates from smallholder agriculture these factors have a direct effect on the poverty situation in rural areas. A new challenge putting further pressure on agricultural resources is the growing demand for agricultural raw material e. g. for the production of biofuels.

With the aim of increasing agricultural production often short-term non-sustainable measures are used. The objective of the new GTZ programme “Sustainable Management of Resources in Agriculture” therefore is to promote sustainable methods of agricultural production and to incorporate these in national and international strategies. The programme covers the following topics:

Sustainable production systems: For the sustainable use of resources in their farming systems farmers need best practices for implementation. The programme collects best practices such as conservation tillage, organic farming, agro-forestry systems from different parts of the world and offers this consolidated information.

Genetic resources in agriculture: Genetic diversity is a key factor for the breeding of new and adapted varieties on a local level and therefore the protection of agrobiodiversity is of crucial importance. The programme will raise awareness on the importance of biodiversity in agriculture.

Renewable resources: Agricultural raw material can offer opportunities for new income sources but as well be in competition with food production as in some cases of biofuel production. The programme therefore investigates framework conditions for a sustainable use of such raw materials in consideration of the right for food.

Soil: Soil is the basis for biodiversity and at the same time one of the key factors for agricultural production. Taking measures to protect soil and improve soil fertility is therefore an integral part of sustainable agriculture. The objective in the light of food security is to increase agricultural productivity.

Water and agriculture: In most development countries 70 to 90 percent of the available freshwater is used for agriculture. Due to the limited availability of freshwater the potential for conflicts between different users is increasing steadily. The objective in this field is to prevent over-use and degradation of the natural resource water.

Climate change and agriculture: Projected changes of our climate will heavily influence the agro-ecological conditions and the production of food. Therefore farmers will have to adapt to these changes in order to safeguard their nutrition. With the help of models, endangered regions shall be identified and projections be made on the nature of regional climate changes. Only then well-directed adaptation measures can be suggested.

Keywords: Climate change and agriculture, genetic resources in agriculture, renewable resources in agriculture, soil management, sustainable production systems, water and agriculture