

Food for the future! Agriculture Scenarios for climate and environment

Authors

Dr. Artur Granstedt - Swedish Biodynamic Research Institute

Dr. Olof Thomsson - SBFI

Abstract

1. Dr. Artur Granstedt & Dr. Olof Thomsson - Swedish Biodynamic Research Institute

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The food's climate impact in Sweden is calculated at 18.8 million tonnes CO₂ eq. (approximately 2 tonnes CO₂ eq. per capita and year - about 20 % total per capita climate foot print) including imported food and production resources from other countries. This includes the use of chemicals in agriculture, imported feed and emissions from deforestation to produce more agricultural land for meat consumption.

The selected 22 good-example farms fulfil the definition for ecological recycling agriculture with integration of crop and animals according the EU part funded project BERAS.

The results show that the low input example farms' climate impact per hectare of agricultural area on average was 82 to 88 % lower , taking into account the carbon sequestration in the soil in each cultivation system and the nitrogen surplus 43 % lower than today's average conventional agriculture in Sweden. Two scenarios, based on two different diets, showed that national self-sufficiency (for 11 million inhabitants by 2030) based on the example farms, using mainly local and renewable resources, could be produced on a total of 2.7 to 3.1 million ha (available today 3 million ha but historically 3.5). It requires however a radical dietary change with a 44 % reduction from today's average consumption of meat from ruminants and at least 90 % less meat from monogastric animals.

Key words: Recycling agriculture, food's climate impact, dietary change, food scenarios, self-sufficiency

Biography - Artur Granstedt

Artur Granstedt, born in 1943 was head of the Biodynamic Research Institute in Järna, Sweden 1998 - 2019. From 1993 to 1997 he headed the Finnish research programme in ecological agriculture at the Agricultural Research Centre of Finland as research professor in organic farming. From 2003 to 2013

Artur Granstedt initiated and co-ordinated the EU Interreg III B project BERAS (Baltic Ecological Recycling Agriculture and Society) based on prototype farms in the EU countries in Baltic Sea drainage area in which more than 50 researchers from different disciplines and from the 8 countries around the Baltic Sea participated. The goal was the evaluation and demonstration of the potential of ecological recycling-based agriculture, combined with priority for local and regional processing, distribution and consumption, in order to reduce consumption of limited resources, emissions of greenhouse gases and nitrogen and phosphorus pollution to the Baltic Sea.

Topic Areas

Agroecology