

COMPARISON OF ENVIRONMENTAL EFFECTS OF CONVENTIONAL AND ORGANIC FARMING WITH MATERIAL FLOW ANALYSIS

SZILÁRD KÁDÁR

University of Debrecen, Faculty of Economics and Business
Demonstrator of Department of Economics and Business
Department of Environmental Economics
University level programme: International business and economics
kadarszilard@gmail.com

Since the beginning of the earth, great changes have taken place, initially by inanimate environmental factors. The appearance of life had a bigger effect to living beings in Earth. The environmental impact of initial human factors was negligible. Nowadays the significance of the human factor is outstanding. The start-up of the industrial revolution and the polbegins with serious challenges such as the effects of climate change and the growing demand for food.

At present, the population has already surpassed 7.5 billion people and is expected to reach a population of 9.2 billion by 2050. So, population growth and the resulting food pressure are cause for serious concern. Another problem is that natural resources: soil, biodiversity, plant nutrients, energy and water are limited. Thus, the use of efficient management methods, the reduction of resource use and the increase of recycling are becoming increasingly urgent.

To find the best solution I compared two farming methods: ecological and conventional farming.

It is a question of which form of farming system is more resource-efficient. During my research all my data were performed by a material flow analysis (MFA). This type of analysis allows us to consider the flow of specific materials at a given place and time, but it doesn't take into account the economic and environmental impacts of these materials.

I compared three conventional and three ecological management calculations.

The results show that the output of one kilogram of organic farming requires 0.37-0.77-3.7 kg Stock for wheat, 0.69-1.4-5.77 kg Stock for sunflower and required for wheat 0,11-0.18-1.47 kg; in case of sunflower 4.1-12.15-12.63 kg Input consumption.

In the case of conventional crops, wheat cultivation requires 0.48-0.77-1.62 kg Stock; in the case of sunflower 0,69-0,81-2,43 kg Stock. On the other hand wheat requires 0,09-0,12-0,14 kg Input in order to produce one kilogram of output and sunflower requires 0.08-0.12-0.14 kg Input to produce 1 kilogram of production.