



# ACATIS FAIR VALUE SPECIAL

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## Sustainability in agriculture

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We have all seen the alarming reports about the deforestation of tropical rainforests to make room for palm oil fields, declining water tables and so on. Agriculture accounts for 80% of global water usage, while animal husbandry is responsible for 15% of global greenhouse gas emissions. In certain regions, soil quality is also at risk, e.g. due to the accumulation of salts, heavy metals or acidity. This process can reduce the fertility of soils to the point where the soil becomes completely infertile.

Originally, agriculture was an activity that was closely connected to nature. How is it possible that it has developed in such a negative direction? Different factors are responsible: First, harvest yields have seen a tremendous increase. For example, the production of grain in the US has grown seven-fold since the middle of the 19th century. This has led to the massive use of fertiliser, excessive water consumption and a reduction in natural zones. A side-effect of this intensification process is that diseases spread more quickly, which in turn leads to an increased use of pesticides. The second important factor is the increase in global meat consumption. Approximately 7 kg of grain and 10,000 litres of water are required to produce 1 kg of beef!

We cannot simply lower productivity to increase sustainability in agriculture. More intelligent solutions are needed. Research conducted at the University of Wageningen, for example, focuses on precision agriculture. It uses sensors to analyse the condition of plants

and the soil. Then, the dosing of nutrients and water is optimised for a benchmark of one square metre, rather than the size of the entire field. Even though investment costs are higher, they are at least partially compensated by lower resource use and higher yields. Moreover, the supply of meat substitute products is also increasing. If this industry grows, texture and taste can continue to be improved and costs can be reduced, creating a sustainable and acceptable alternative to meat. Alternatives to chemical pesticides can include natural adversaries, crop rotation or the use of resistant plant species. Such approaches do not have to be more expensive than conventional methods.

But additional impetus is needed for the transformation. Simply enforcing regulations without considering the financial consequences can lead to a situation where the agricultural sector is no longer financially viable. Not all required changes to current agricultural practices can be implemented without financial support and subsidies. For example, free training or cheap loans for precision farming may be used to accelerate the transformation.

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