



How can farmers adapt to climate change?

The impact of climate change on agriculture is considerable. The Climate Stress Test maps the risks for each farm. Daan Verstand, a climate researcher: 'We want farmers to be more aware of the problem and know how they can reduce the risks.' ►

*Daan Verstand of
WUR.*

WUR

Problem: due to climate change, temperatures are rising, rainfall occurs more often in a short space of time and there are longer spells of drought in the Netherlands. At the same time, soil quality deteriorates and all this is extremely detrimental to agriculture.

T02 solution: develop knowledge, models and scenarios for farmers, insurers and other companies, like the Climate Stress Test, which is part of the Climate Change Adaptation project for Open Cultivation.

Impact: this raises awareness of the problem for farmers and allows farms to adapt to climate change.

The Climate Stress Test is a method by which researchers can identify the risks of climate change for a specific farm. 'The aim is to make farmers more aware of the problem and to give them advice on what they can do', says Daan Verstand at Wageningen University & Research, who deals with the effects of climate change on agriculture in the Netherlands.

Two climate scenarios

In the test, the Netherlands is divided into five regions. For example, temperature inland is often higher and extreme precipitation occurs more often along the coast. The test examines two of the four climate scenarios developed by the Royal Netherlands Meteorological Institute (KNMI) for 2050: 1) the most extreme and 2) the most moderate. 'The consequences for farmers are therefore dependent on how extreme climate is going to change', Verstand explains. The test focuses on recognisable cropping schemes for those five regions where many crops are cultivated, such as potatoes, sugar beet, root vegetables, cereals and onions, and shows how vulnerable they are to extreme weather conditions. Onions and potatoes, for example, are vulnerable to droughts; cereals much less. In the years ahead, researchers will also add other crops to the test, such as kidney beans, broad beans and soy.

Other crops

At present the test is still a tool that researchers execute themselves, but they are also working on developing an app that farmers can use for themselves. Aside from arable farmers, insurers were also involved in the research. 'It is also worthwhile for them to know how farms can reduce their vulnerability, because if they increasingly have to compensate for extreme weather damages, the premiums will rise tremendously.'

Using water more economically

'The test not only involves the risks, but also offers tips to arable farmers on how to adapt to climate change', Verstand emphasizes. For example, there are ways to use water more economically during dry spells and to improve soil quality so that farmers can better deal with



extreme weather conditions. Farmers can adapt their management to the changing climate, by for example improve the water holding capacity of the soil and reduce soil compaction (the soil is compressed by heavy machinery which prevents the roots from reaching deeper water). Farmers also share their experiences and can learn from each other. 'If these adaptations don't work, the farmers could consider switching to crops that are better suited to extreme weather conditions.' ■

Who: public-private partnership on climate adaptation research project Open Cultivation: Wageningen Environmental Research, together with BO-Akkerbouw, Agrifirm, SPNA and Delphy, commissioned by the Ministry of Agriculture, Nature and Food Quality;

KANO, a knowledge transfer project: WUR Open Cultivation, together with LTO-DAW, Agrifirm and the Dutch Association of Insurers.

Duration: Climate Adaptation Open Cultivation: January 2020–December 2023; KANO: June 2020–June 2022.

Budget: Climate Adaptation Open Cultivation: €1.4 million; KANO: €200,000.

Follow-up: in the next year and a half, to develop the Climate Stress Test into an app that farmers and consultants can use in kitchen-table discussions.



View the video here