

CLIMATE CHANGE, AGRICULTURE AND FLOOD RISK IN FLEVOLAND

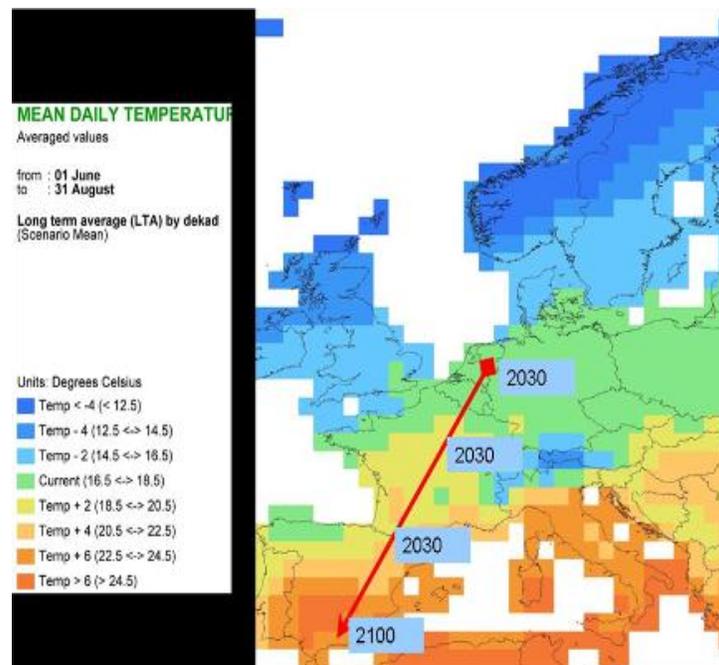
Introduction

In the Netherlands, the risk of flooding is increasing due to climate change and subsidence. Flevoland wants to anticipate on this process in long term spatial policies and water management. For this purpose, climate scenario's and water management models are made. The province has regulations for both fluvial and pluvial flooding, with separate standards for both. The policy and the standards depend among others on land use and economic value. In order to make sustainable policies, the climate scenario's and water management models need to be combined with knowledge on the economic and spatial development of Flevoland. In the project "climate and agriculture in Flevoland", we have tried to make predictions on the long term land use, taking climate change into account.



Climate change impact

The dutch meteorological institute KNMI has made climate scenario's for the Netherlands. The project Climate and Agriculture in the Northern Netherlands has investigated the impact of these scenario's, together with economic scenario's, on agriculture in Europe up to 2050. The prospects for agriculture in the Netherlands and more specific in Flevoland, seem to be good. The area will be able to maintain itself in changing market and climate circumstances. Potato and dairy farming remain strong pillars.



In addition to an increase in temperature, an increase in extreme weather is expected. The impact for a variety of crops and farm animals was studied.

Adaptation measures were identified. The study showed that the impact of water related effects – draught and flood risk – was the most important impact.

This was no surprise. However, also warm winters and warm, damp summer weather play a role in increasing the risk of pests and diseases. Flooding and extreme wet situations have the biggest financial impact.

Adaptation to climate change

In Flevoland, two workshops were conducted with farmers. In these workshops, scientists presented climate change impacts and possible adaptation measures. Two categories of measures were considered: “doing things differently” and “doing different things”. The farmers discussed strategies, evaluated possible and added more. During the workshops it became apparent that different farmers took very different strategies, depending on their market approach. Also it became clear that they were confident that still a wide range of adaptation measures was available. Important measures in “doing things differently” were: improve soil structure and water management, irrigation, cooling potato ridges using water, innovative machine design. Important measures in “doing different things” were: farm new crops, e.g. sun flower and artichoke, rotate arable crops and grassland.

Consequences for Flevoland

First of all an important conclusion of the study was, that in Flevoland we have to consider agriculture as a strong economic factor for the future. Secondly, it was concluded that water management is the main factor for successful climate change adaptation. The biggest impact on agriculture is expected from increasing flood risk. Other risks are increasing pressure of pests and diseases and longer periods of draught. Adaptation strategies all need availability of clean fresh water.

In Flevoland there is an abundance of clean fresh water. The water system is designed to prevent high chances of flooding. Water management aims at keeping the risk low. In many places below once every hundred years (1/100) and never below once every fifty years. This climate impact study suggests that it is very important for the economic value of agriculture in Flevoland to keep the quality of the water system high and to take measures to prevent deterioration of water availability, water quality and flood risk.

Source:

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