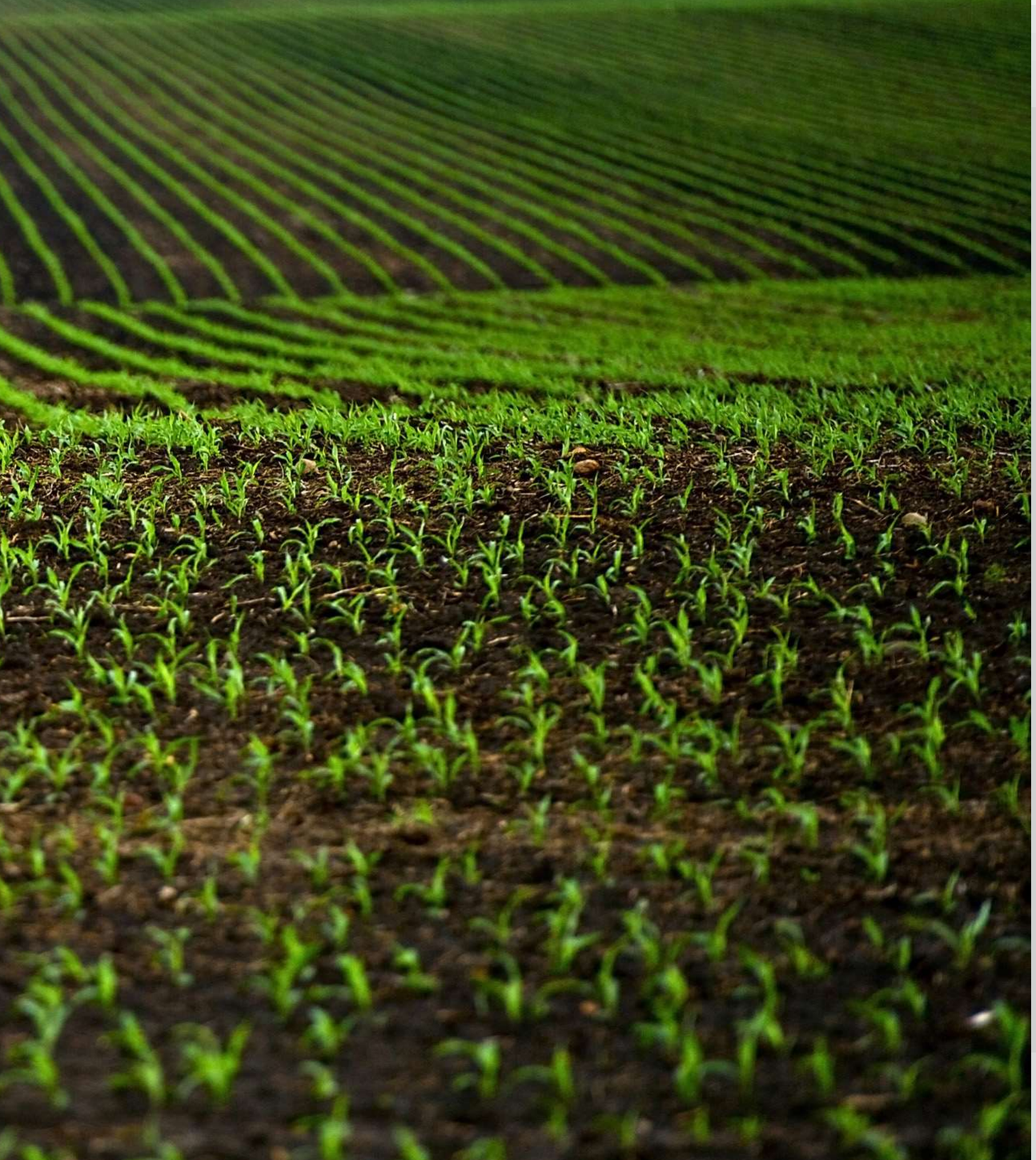

Farm/It
Farming.Simulation.Software.



CHALLENGES

#The increased pace of climate change and its consequences on the weather and severity of pests.

#The political demand (especially in Europe) to massively decrease greenhouse gas emissions.

#The growing demand for detailed carbon disclosure.

#An exponential increase in the demand for organic products.

#Highly volatile crop prices.

OBJECTIVES

#Establish first think tank related to smart farming in Austria

#Support EU and Austrian energy saving and sustainability initiatives

#Provide knowledge transfer and sharing between academia and practice

#Design, develop and evaluate cost-effective and user-friendly ICT components for smart farming

PROJECT

Farm / IT is a cooperation between Vienna University of Technology, BOKU, HBLFA Raumberg-Gumpenstein and Xylem Technologies with partners from agriculture.

The project is co-finances by the FFG under the Research Studios Austria program.

TU WIEN TECHNISCHE UNIVERSITÄT WIEN

BOKU Universität für Bodenkultur Wien

XYLEM TECHNOLOGIES

lfz raumberg gumpenstein Lehr- und Forschungszentrum Landwirtschaft www.raumberg-gumpenstein.at

FFG Österreichische Forschungsförderungsgesellschaft

USER GROUPS

Farmers

Companies

Public authorities

Consultants

BENEFITS

#Farm/IT supports the actors in the interactive planning and simulation of farming scenarios, while taking into account influencing factors, dependencies and interactions.

#Farm/IT presents users with the impact of interventions or unforeseen events (risks) on individual crops, the entire cropping plan or farm.

#Farm/IT addresses the needs of beginners and experts. It allows analysis of complex issues with conflicting outcomes (for example maximising yield while minimising inputs).

#Farm/IT structures the relevant data, visualises it on-screen and enables users to make informed decisions.

RESEARCH USE CASES

Farm/IT provides its users with six common applications including crop yield forecasting, simulating optimal crop rotation, and optimising resource use. The uniqueness of Farm/IT is its flexibility. Farm/IT can be easily adapted to specific use cases and user requirements.

FORECASTING CROP HARVEST DATE AND YIELD

OPTIMISING FERTILISATION BASED ON SPECTRAL SENSING AND CROP MODELLING

OPTIMISING FORAGE QUALITY AND YIELD IN GRASSLANDS

CALCULATION AND OPTIMISATION OF THE ECOLOGICAL FOOTPRINT

EFFICIENT CROP WATER MANAGEMENT BY REMOTE SENSING

OPTIMISATION OF RESOURCE USE BY CROP ROTATION

YIELD FORECASTING

Calculation of the expected yield.

Calculation of the optimal harvest time.

Ongoing optimization (data assimilation) of the model with satellite data.

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FERTILIZATION OPTIMIZATION

How can fertilization strategies be optimized to maximize yield and contribution margin and environmental impacts are minimized?

Which times are optimal for spreading fertilizer?

GRASSLAND

What is the optimal relationship between quality (protein content, digestibility) and yield?

Which factors have the greatest influence on the development of quality and yield in the economic grassland?

ECOLOGICAL FOOTPRINT

What is the ecological footprint of a particular crop, crop rotation, field, farm or area?

What are the effects of a change in management, such as crop rotation or fertilization?
the ecological footprint?

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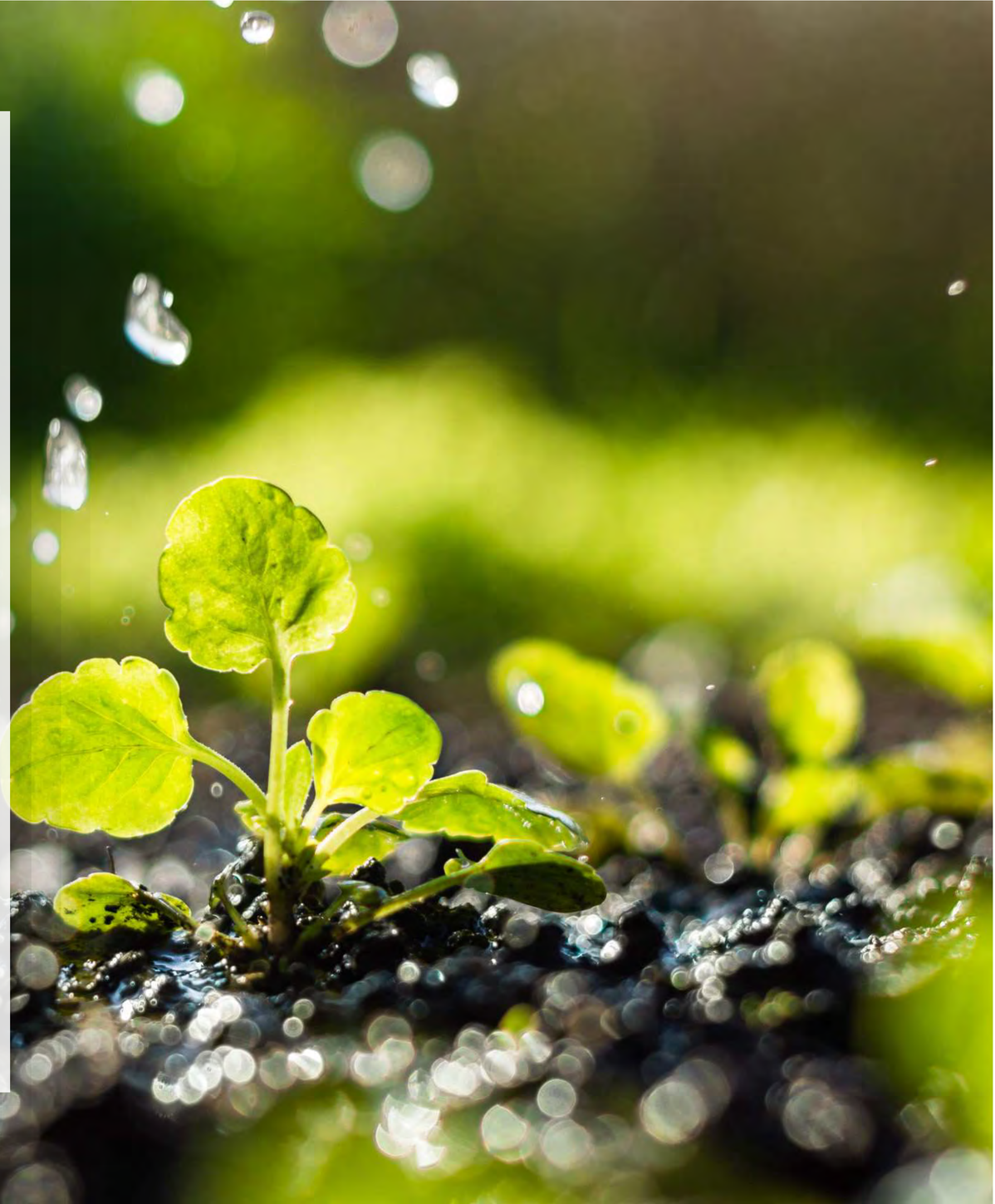
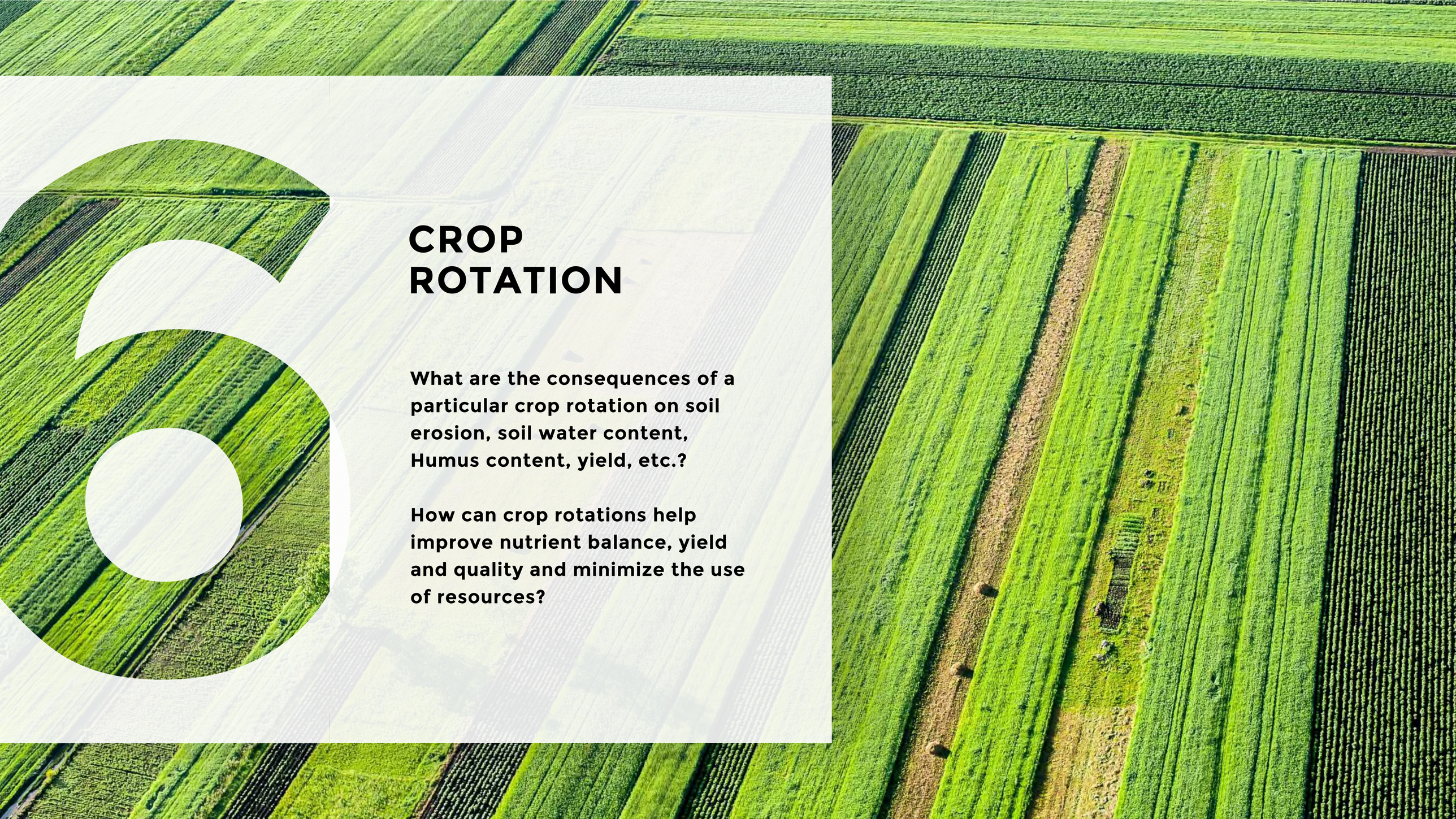
WATER MANAGEMENT

What is the optimal relationship between water use and yield?

What is the optimal irrigation strategy for a certain culture?





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CROP ROTATION

What are the consequences of a particular crop rotation on soil erosion, soil water content, Humus content, yield, etc.?

How can crop rotations help improve nutrient balance, yield and quality and minimize the use of resources?

Farm/IT

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