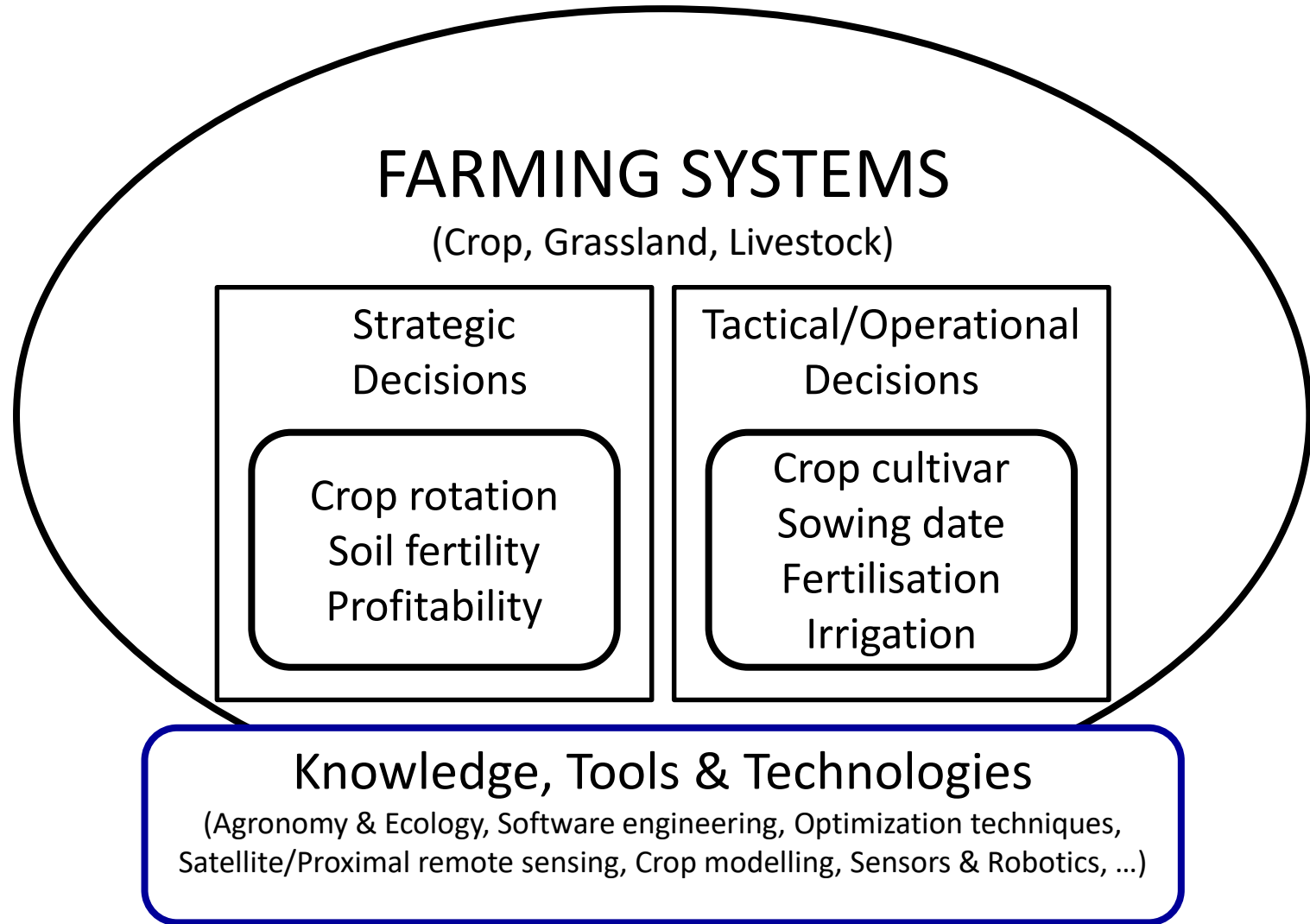


Farm/IT – Innovative Digital Technologies for Strengthening the Resilience of Austrian Farming Systems to Climate Risks

A.M. Manschadi, H.-P. Kaul, J. Eitzinger, J. Friedel, E. Pötsch, G. Bodner, T. Neubauer







FARM / IT

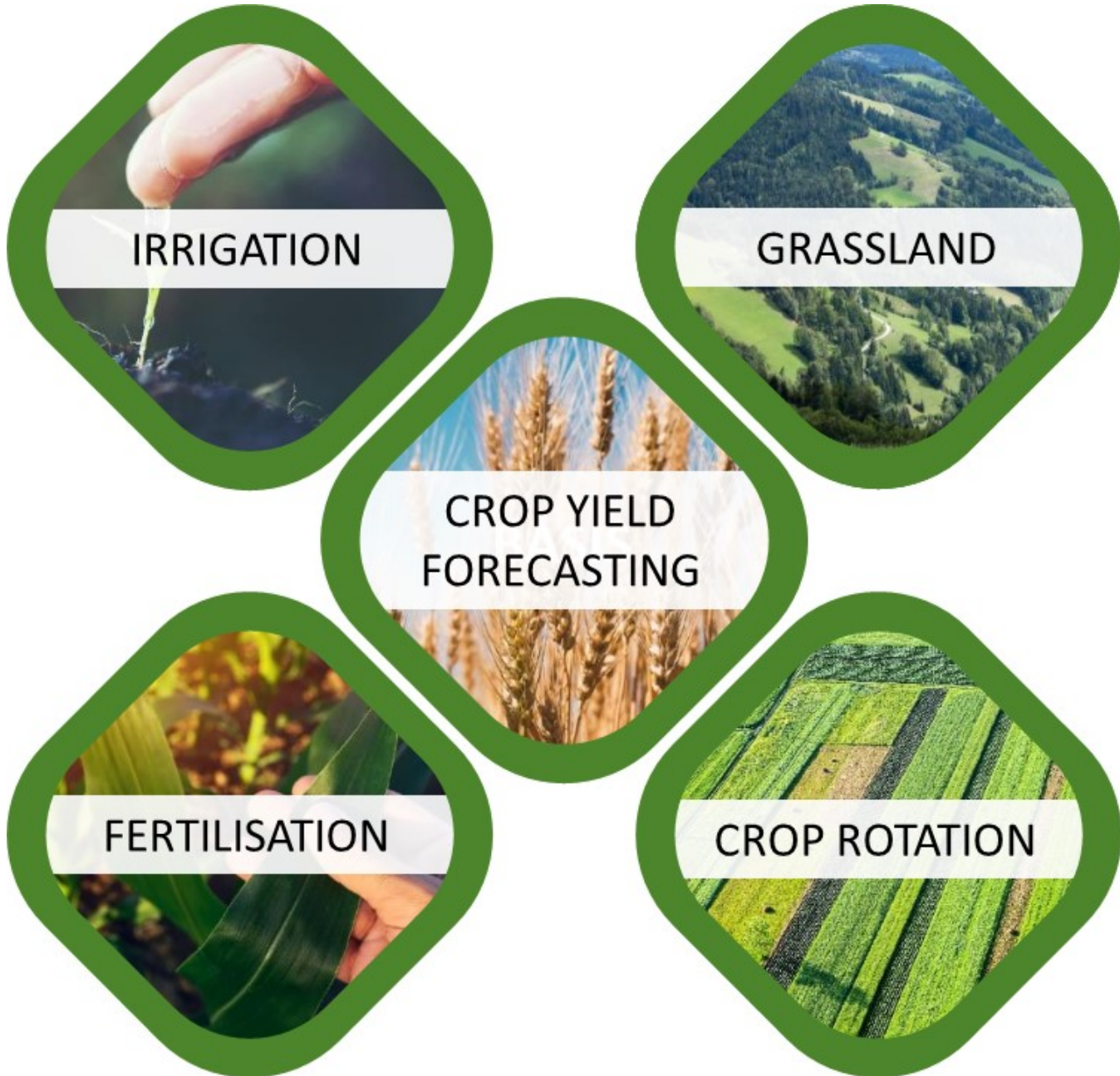
Research Studios Austria

Farm/IT - Concept & Users

- A web-based software platform
- Integrating data from a wide range of sources (farm, plant, soil, sensor, weather etc.)
- Providing a sound basis for informed decision making
- Users: farmers, agri-businesses, government agencies, and consultants



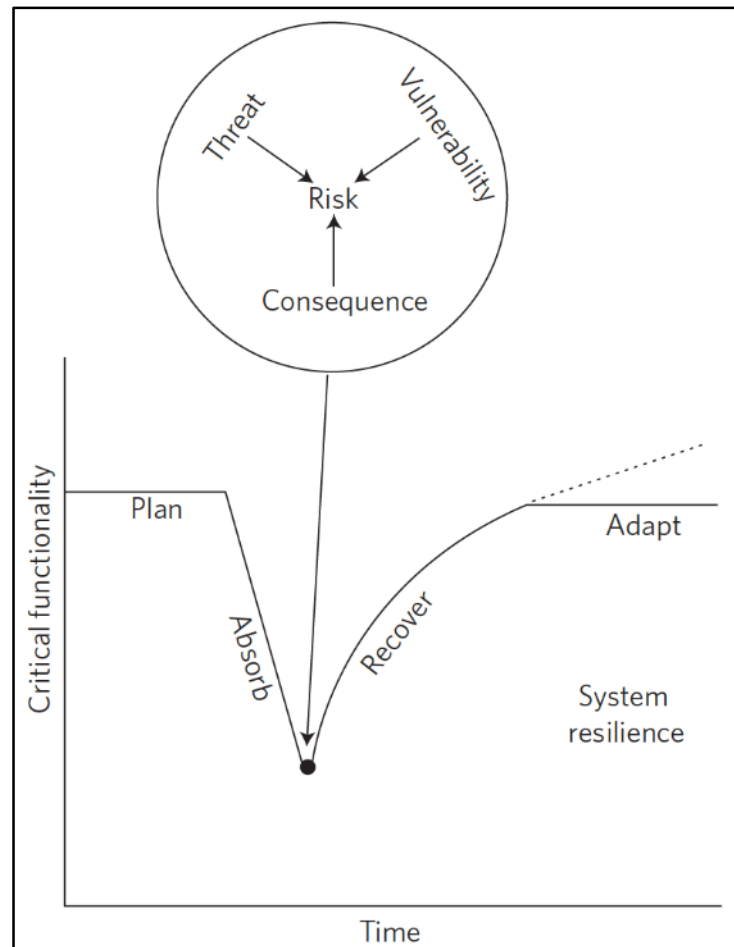
Farm/IT - Use Cases



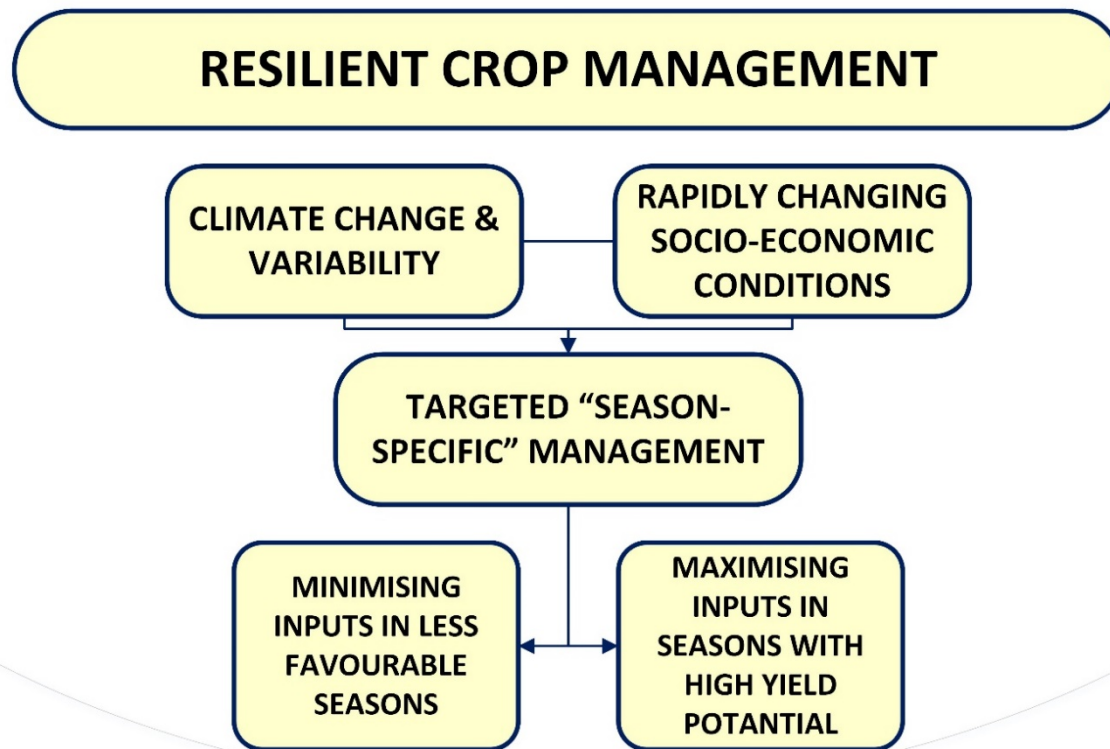
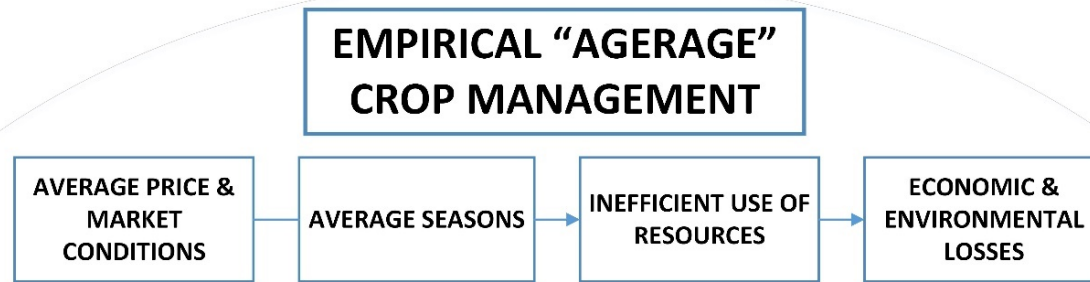
Resilience of Farming Systems

- Resilience: the capacity of a system to absorb disturbance and re-organize while undergoing change so as to still retain the same function, structure, identity, and feedbacks.

Resilience management framework

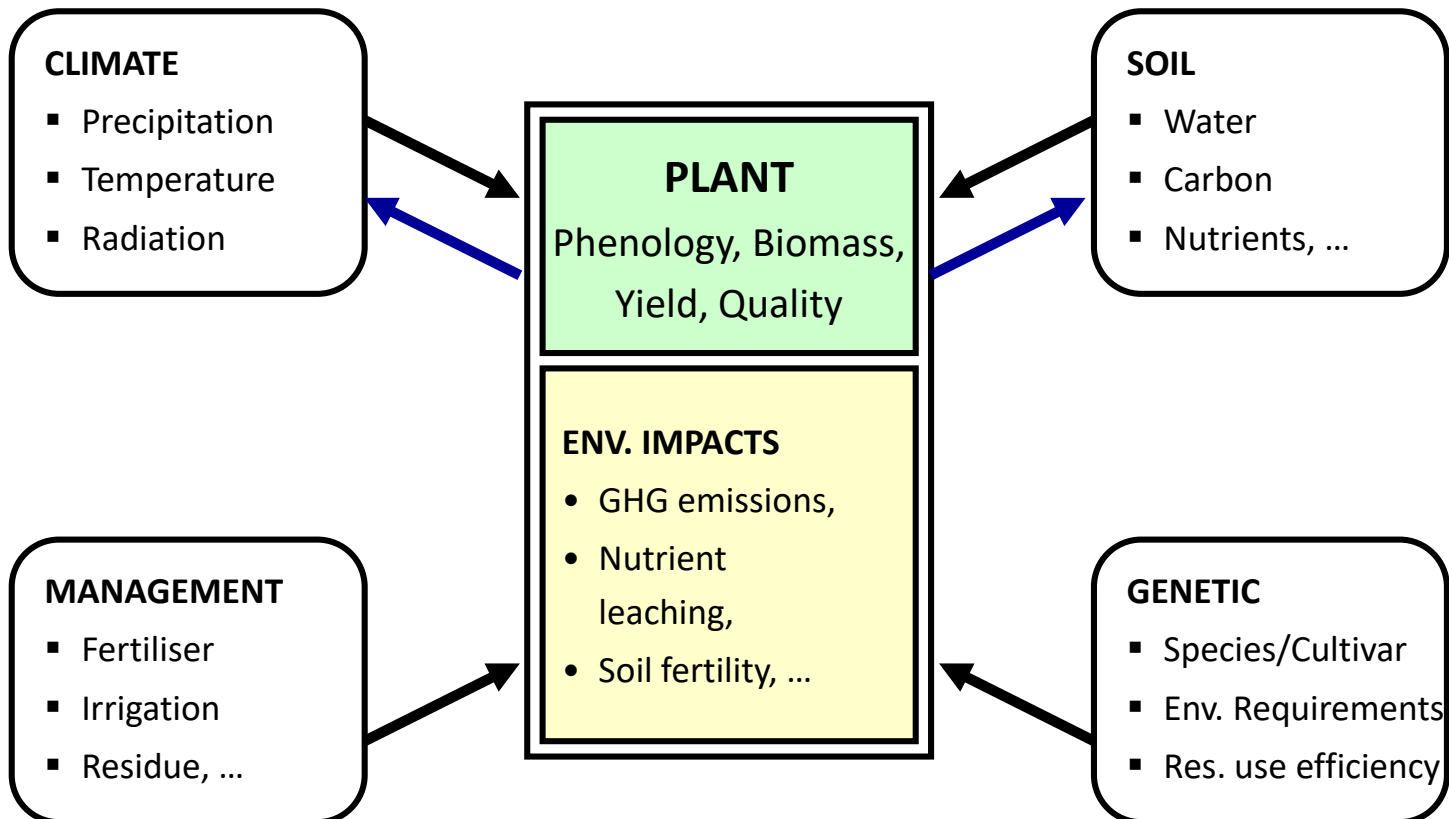


Resilience of Farming Systems



Tailored Forecast Products

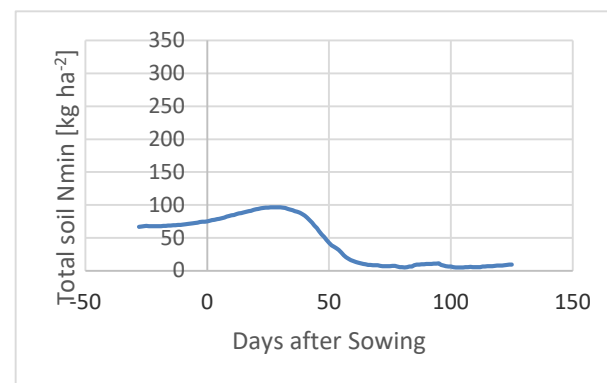
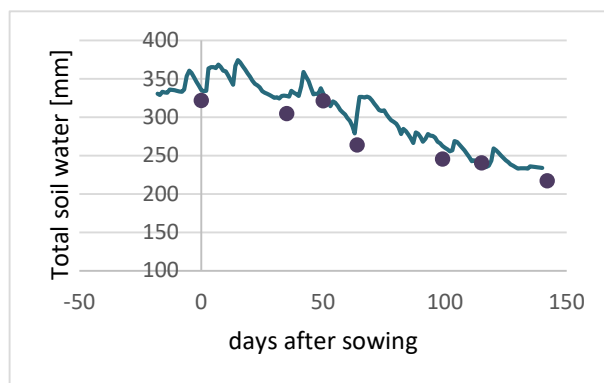
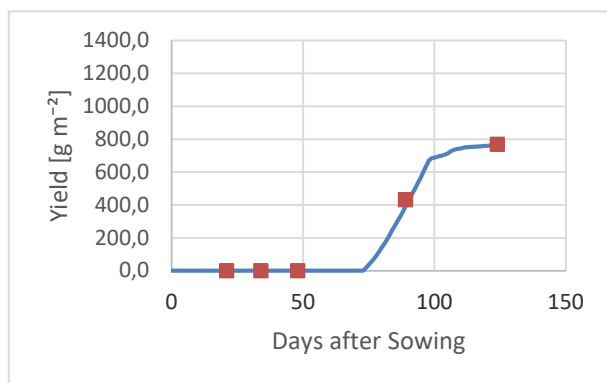
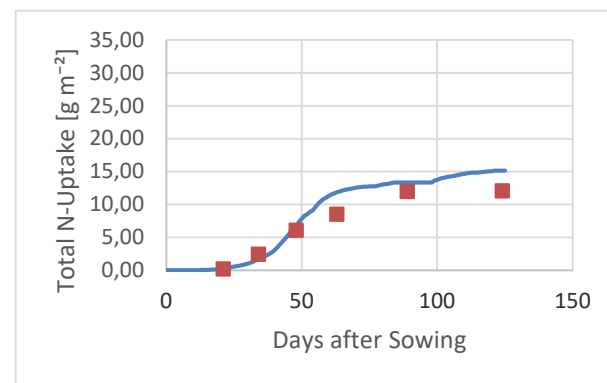
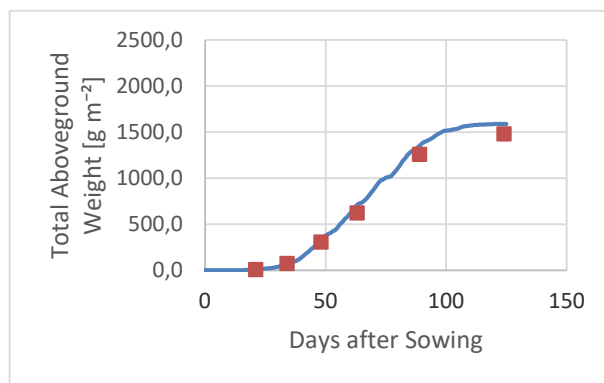
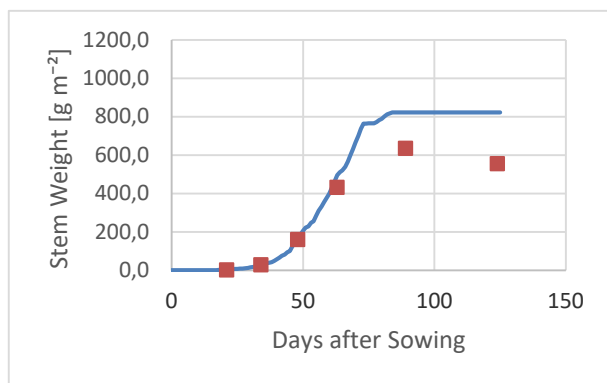
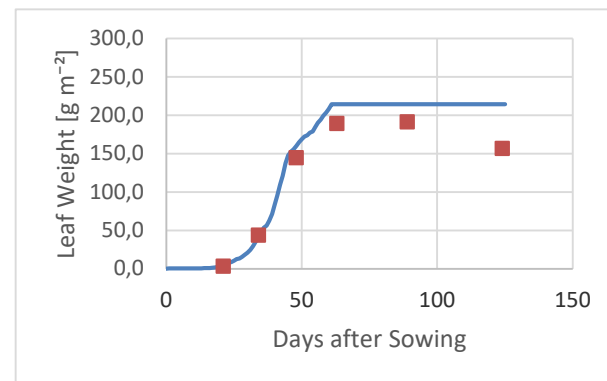
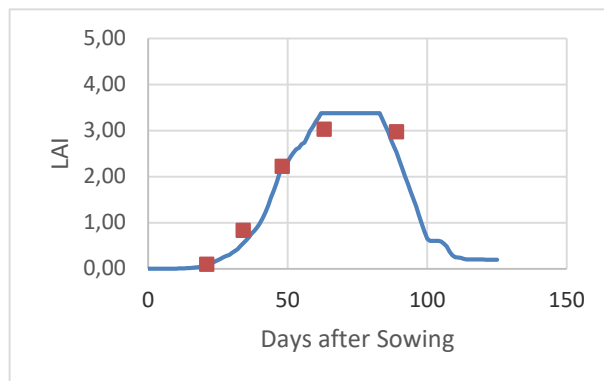
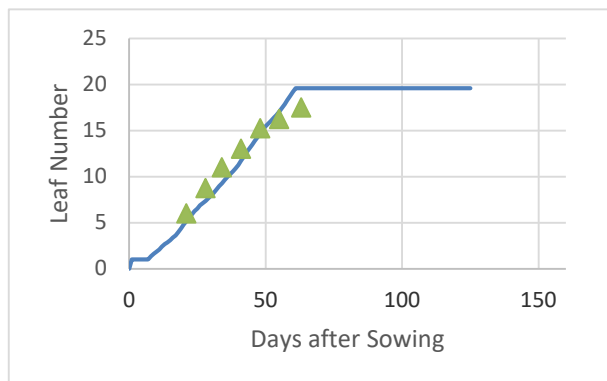
- Weather forecasts: managing climate variability and extreme weather events
- Translating weather forecasts into **tailored forecast products**
- Crop simulation models - **iCrop**



Parameterisation & Evaluation of iCrop



Parameterisation & Evaluation of iCrop



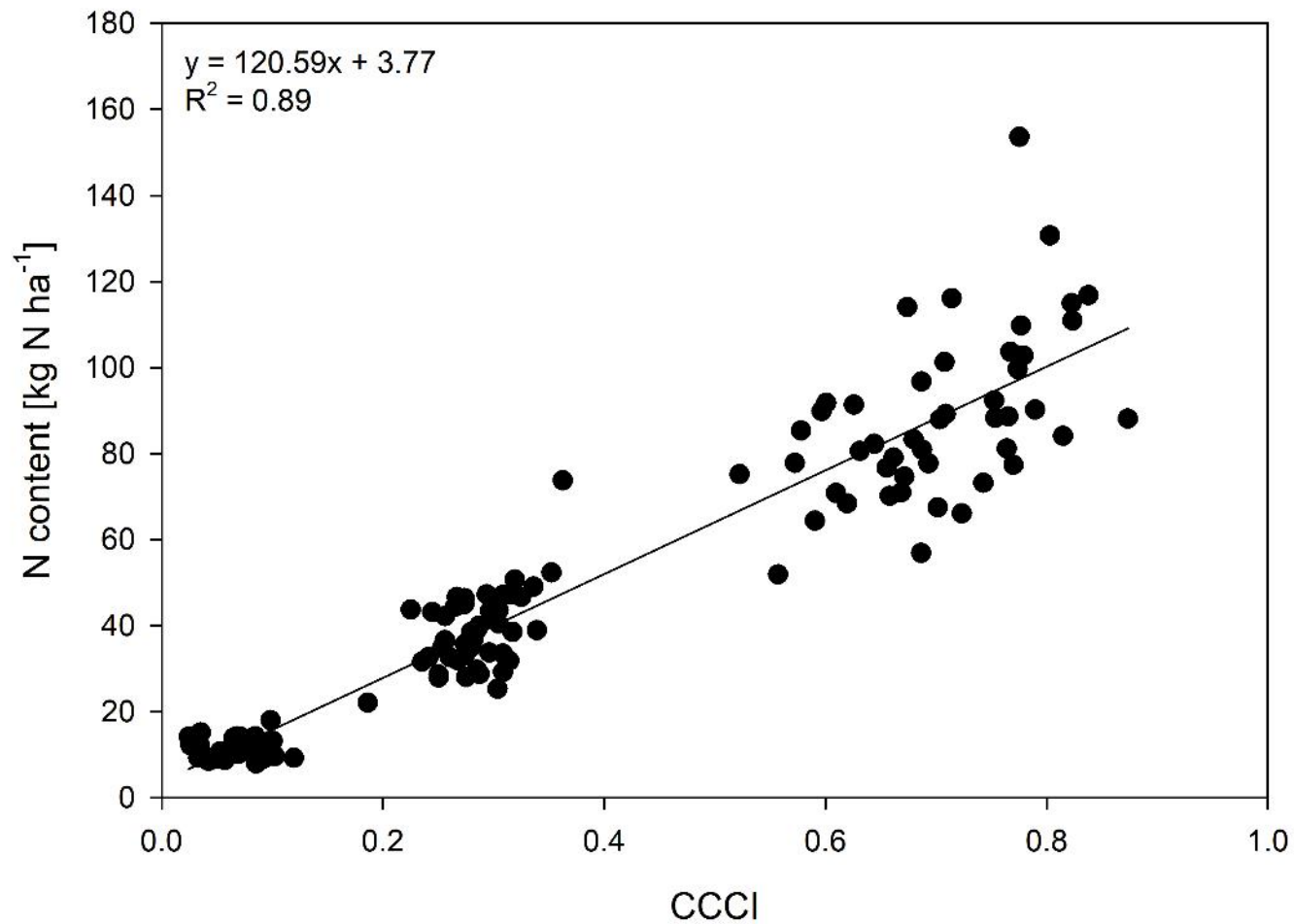
Tactical/Operational Decisions

- Spectral sensors for estimating crop N status

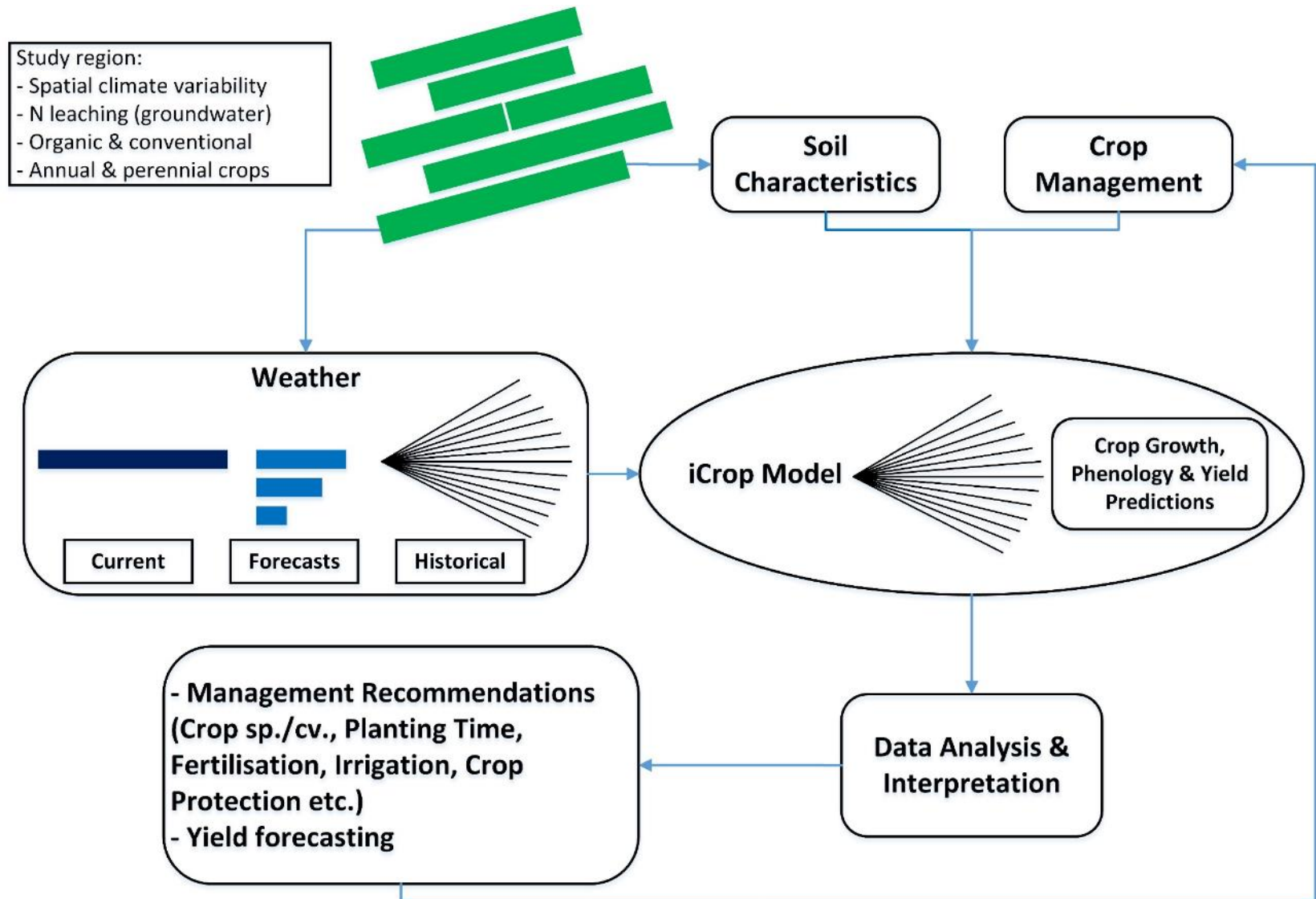


Optimising Nitrogen Management

- Canopy Chlorophyll Content Index (CCCI)



Tactical/Operational Decisions



Conclusions

- Improving the resilience of cropping systems – a shift from empirical “average” management towards “site- and season-specific” management
- Tailored weather forecast products
- Interfacing well-parameterised crop models with weather forecasts
- Farm/IT project - significant progress in parameterisation of iCrop for Austrian crop varieties (winter wheat, maize, potato, sugar beet)
- Integration of tools and data in Farm/IT software platform
- Major challenges - availability of good quality soil and weather data with high spatial resolution

<https://farmit.at/en/>

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Forecasting crop harvest date and yield



Optimising nitrogen fertilisation based on spectral sensing and crop modelling



Optimising forage quality and yield in grasslands



Efficient crop water management by remote sensing



Calculation and optimisation of the ecological footprint



Resource optimization by crop rotation