EMPHASIS

EUROPEAN INFRASTRUCTURE FOR PLANT PHENOTYPING

Vision

We want to enable scientists to better understand plant performance and translate this knowledge into application. We aim to promote future food security and agricultural business in a changing climate.

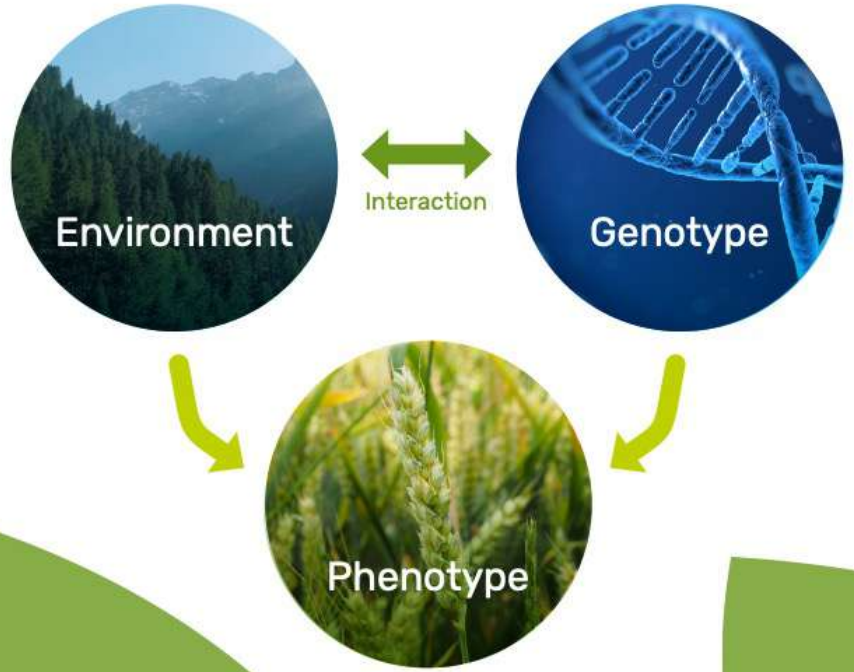
What is plant phenotyping?

SCIENTIFIC TOOL TO STUDY PLANT–ENVIRONMENT INTERACTION

- Study of plant structure and function
- Using non-invasive technology
- Understanding how plant structure and function depend on genetics and the environment

How does a plant cope with its environment?

Phenotyping is used to understand how plants can cope with reduced resources, pathogens and climate change.



Mission

What?

Facilitating multi-scale plant phenotyping to analyse genotype performance in diverse environments and quantify the diversity of traits

How?

By developing infrastructure and providing access to facilities, services and resources

Objectives

DEVELOPING INFRASTRUCTURE AND PROVIDING ACCESS

Infrastructure Categories

PLANT PHENOTYPING REQUIRES INTEGRATION OF BOTH FACILITIES AND ACTIVITIES

CONTROLLED CONDITIONS

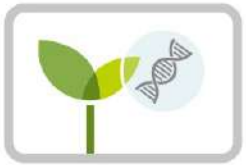
Investigation of diverse plant traits in response to well-defined environmental conditions

INTENSIVE FIELD

Detailed investigation of plants and canopies under well-monitored field conditions

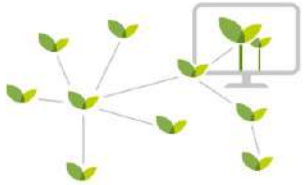
LEAN FIELD

Field sites with basic equipment and environmental monitoring that can be linked to a network of field sites



MODELLING

Models integrated in phenotyping pipelines and predictive models using phenotypic data



DATA & COMPUTATIONAL SERVICES

Integrating compatible information systems to provide access to data

Who benefits?

- **Researchers**
  in need of quantitative plant assessment
- **Public sector investors**
  in complementary plant phenotyping infrastructure in Europe
- **Scientific institutions**
  using synergies in operating plant phenotyping infrastructures in Europe
- **Industry**
  harnessing innovation in technology development and its application for breeding
- **Society in general**
  due to a sustainable increase of food quality and quantity in conditions of climate change

HOW EMPHASIS CONTRIBUTES TO ...

...the European Research Area Priorities

HOW EMPHASIS CONTRIBUTES TO ...

...the Sustainable Development Goals

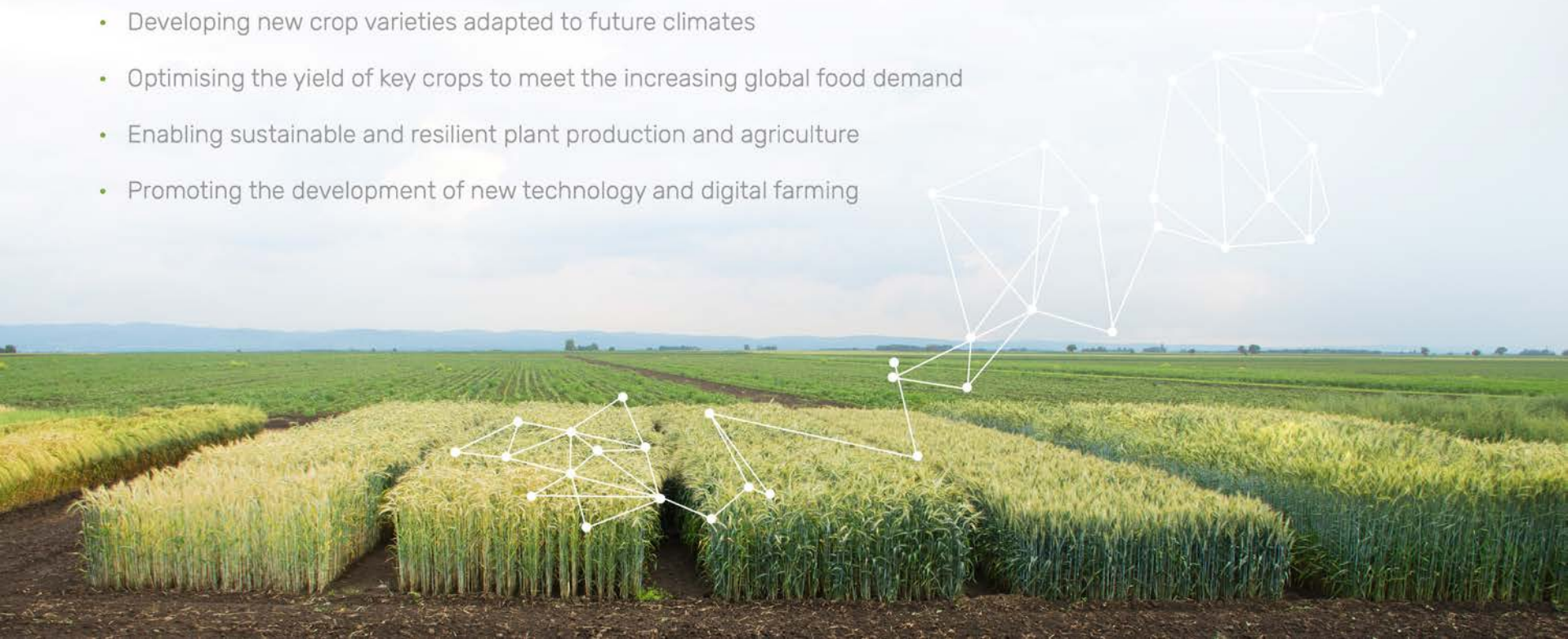
Sustainable Agriculture

With enhanced plant breeding being at the core of a sustainable agriculture, EMPHASIS contributes to many of the United Nations Sustainable Development Goals.

HOW EMPHASIS CONTRIBUTES TO ...

...the Horizon Europe Mission Soil Health and Food

- Developing new crop varieties adapted to future climates
- Optimising the yield of key crops to meet the increasing global food demand
- Enabling sustainable and resilient plant production and agriculture
- Promoting the development of new technology and digital farming



Contact

emphasis@fz-juelich.de

emphasis.plant-phenotyping.eu

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EMPHASIS on Plant Phenomics

EMPHASIS

ESFRI

EMPHASIS is an ESFRI-listed project.

EMPHASIS-PREP is funded by the European Union (Grant Agreement: 739514).

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