



PLANTASTIC DISCOVERIES

Plants
for the Future
European Technology Platform



WHAT IS PLANT BREEDING AND WHY IS IT IMPORTANT?



PLANT
BREEDING
SERIES

LET'S RECAP... WHAT IS PLANT BREEDING?

PLANT BREEDING (ACTION, NOUN)
/pla:nt 'bri:diŋ/

The science and practice of modifying plant traits to develop improved varieties with desirable characteristics.



Think of it as **customising plants to fit our needs**. Whether it's making them more resistant to droughts, enhancing their flavour, or changing their colour.

For over **10,000 years**, humans have been shaping plants to better suit our needs. Early farmers unknowingly became the first plant breeders by selecting the strongest, most productive plants to cultivate.

Over generations, this process, known as **domestication**, transformed wild plants into the crops we rely on today, from wheat and rice to fruits and vegetables.



Over time, **plant breeding evolved** from simple selection to a **precise, science-driven process**, thanks to groundbreaking discoveries in **genetics and DNA**.



Gregor Mendel's laws of inheritance laid the foundation for understanding how characteristics are passed from one generation to the next. With advancements in molecular biology, plant breeders developed powerful tools, enabling them to improve crops faster and with greater precision than ever before.

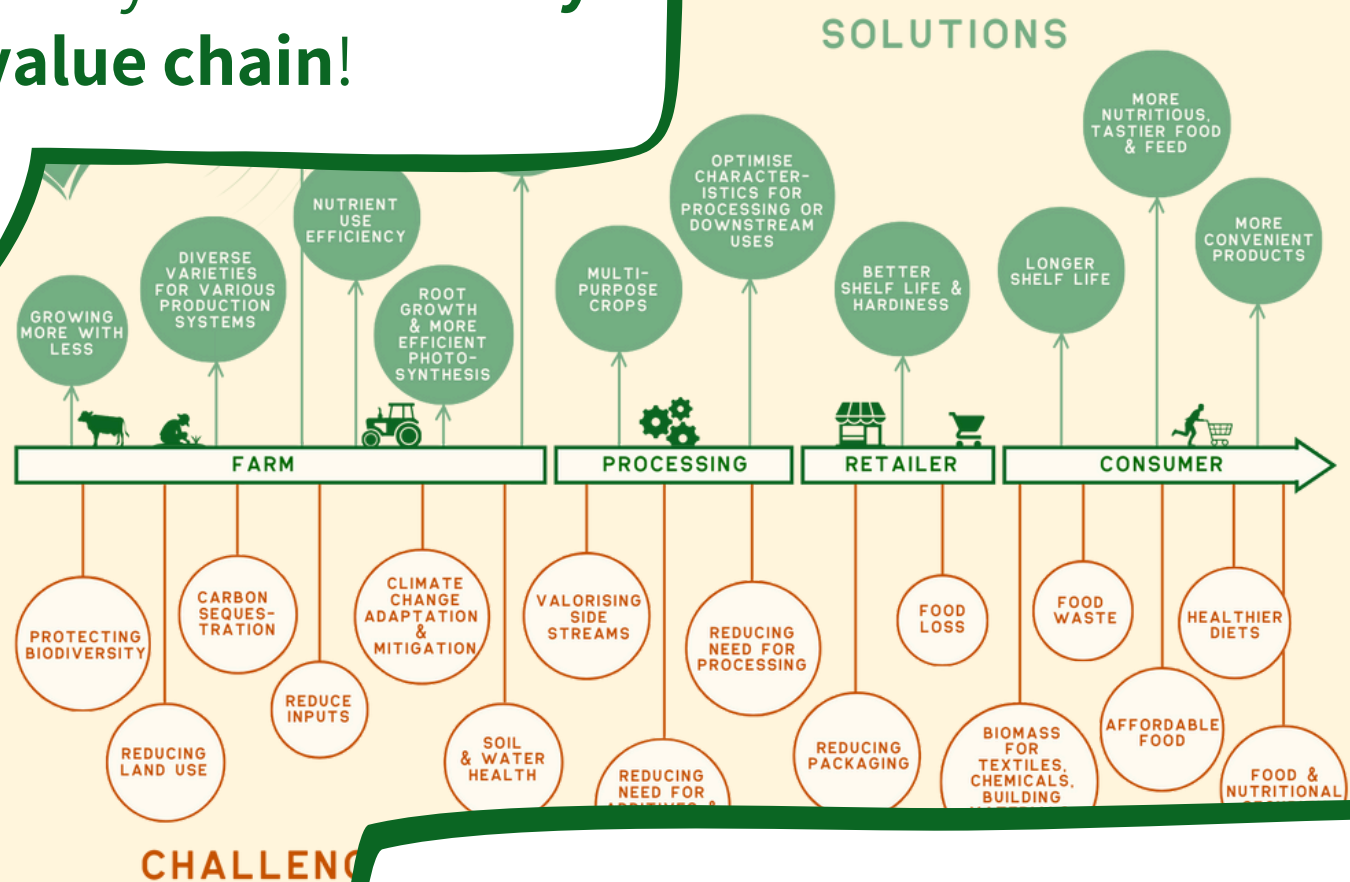
Today, plant breeding is essential in tackling some of the world's biggest challenges: climate change and food security. By developing crops that are more resilient, productive, and resource-efficient, plant breeding continues to play a crucial role in ensuring a stable and sustainable food supply for the future.



Tell me more!

THE POTENTIAL OF PLANT BREEDING

Sure! Plant breeding has the potential to transform our agri-food systems at **every level of the value chain!**



We can zoom in to see some of the specific challenges that exist, and the solutions that plant breeding can provide.





POWERED BY
**PLANT
BREEDING**

**DISEASE
RESISTANCE**

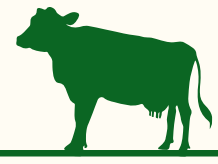
**WEATHER
RESILIENT
CROPS**

**NUTRIENT
USE
EFFICIENCY**

**ROOT
GROWTH
& MORE
EFFICIENT
PHOTO-
SYNTHESIS**

**DIVERSE
VARIETIES
FOR
VARIOUS
PRODUCTION
SYSTEMS**

**GROWING
MORE WITH
LESS**



FARM

**PROTECTING
BIODIVERSITY**

**REDUCING
LAND USE**

**CARBON
SEQUESTRATION**

**REDUCE
INPUTS**

**CLIMATE
CHANGE
ADAPTATION
&
MITIGATION**

**SOIL
& WATER
HEALTH**

CHALLENGES



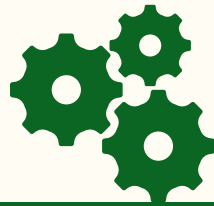
POWERED BY
PLANT
BREEDING

OPTIMISE
CHARACTER-
ISTICS FOR
PROCESSING OR
DOWNSTREAM
USES

MULTI-
PURPOSE
CROPS

SOLUTIONS

BETTER
SHELF LIFE
&
HARDINESS



PROCESSING

RETAILER

VALORISING
SIDE
STREAMS

REDUCING
NEED FOR
PROCESSING

REDUCING
NEED FOR
ADDITIVES
& PRESER-
VATIVES

REDUCING
PACKAGING

FOOD
LOSS

CHALLENGES

POWERED BY
PLANT
BREEDING

SOLUTIONS

Ta-daa!
So you see there are many challenges, and plant breeding has the potential to contribute to most of them.

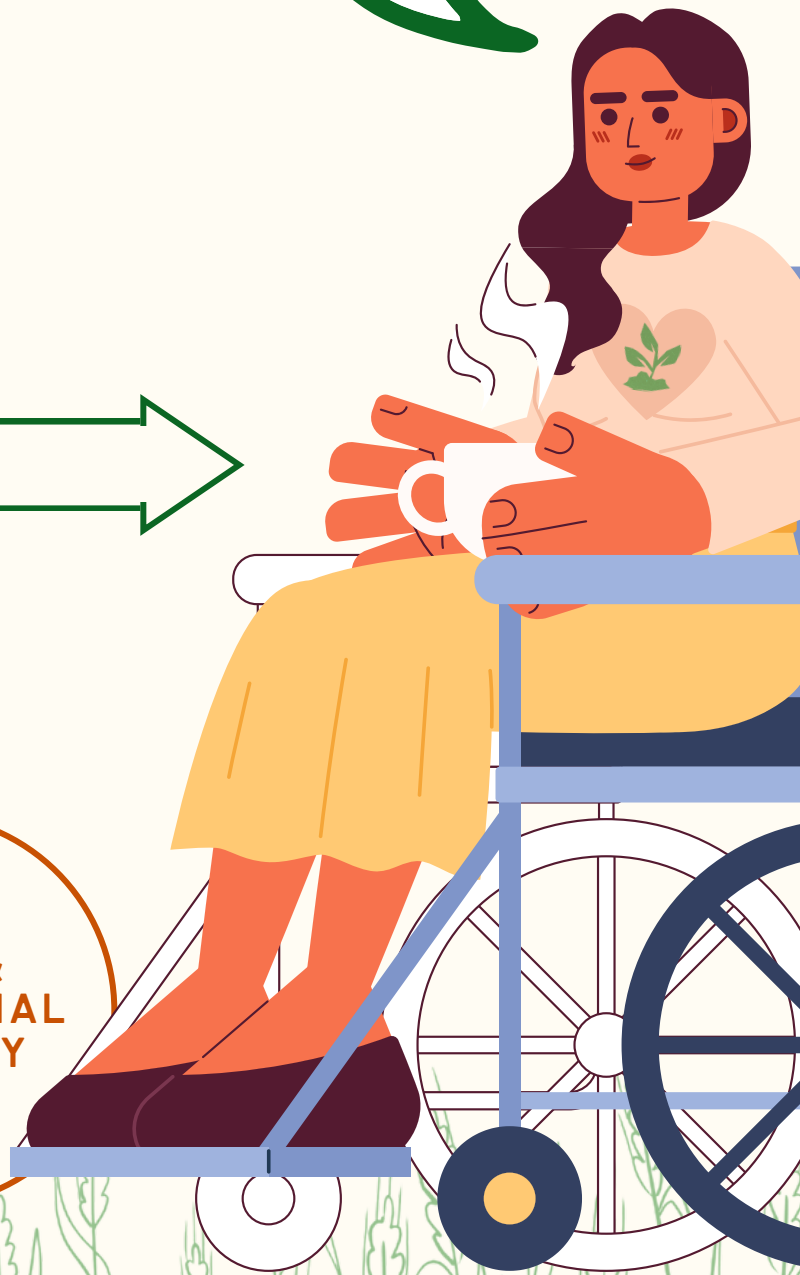
LONGER
SHELF LIFE

MORE
NUTRITIOUS,
TASTIER
FOOD & FEED

MORE
CONVENIENT
PRODUCTS



CONSUMER



BIOMASS
FOR
TEXTILES,
CHEMICALS,
BUILDING
MATERIALS,
ENERGY

FOOD
WASTE

HEALTHIER
DIETS

AFFORDABLE
FOOD

FOOD &
NUTRITIONAL
SECURITY

CHALLENGES

Plant breeding can help solve issues in agri-food systems across the value chain, not just at the farm level!

In this new Plantastic Discoveries series, we will go through each different challenge and outline how plant breeding can help!

PLANT
BREEDING
SERIES



Are there some challenges that you are missing here?

LET US KNOW! ↓

