

Connecting different research clusters with the aim to develop more accurate breeding

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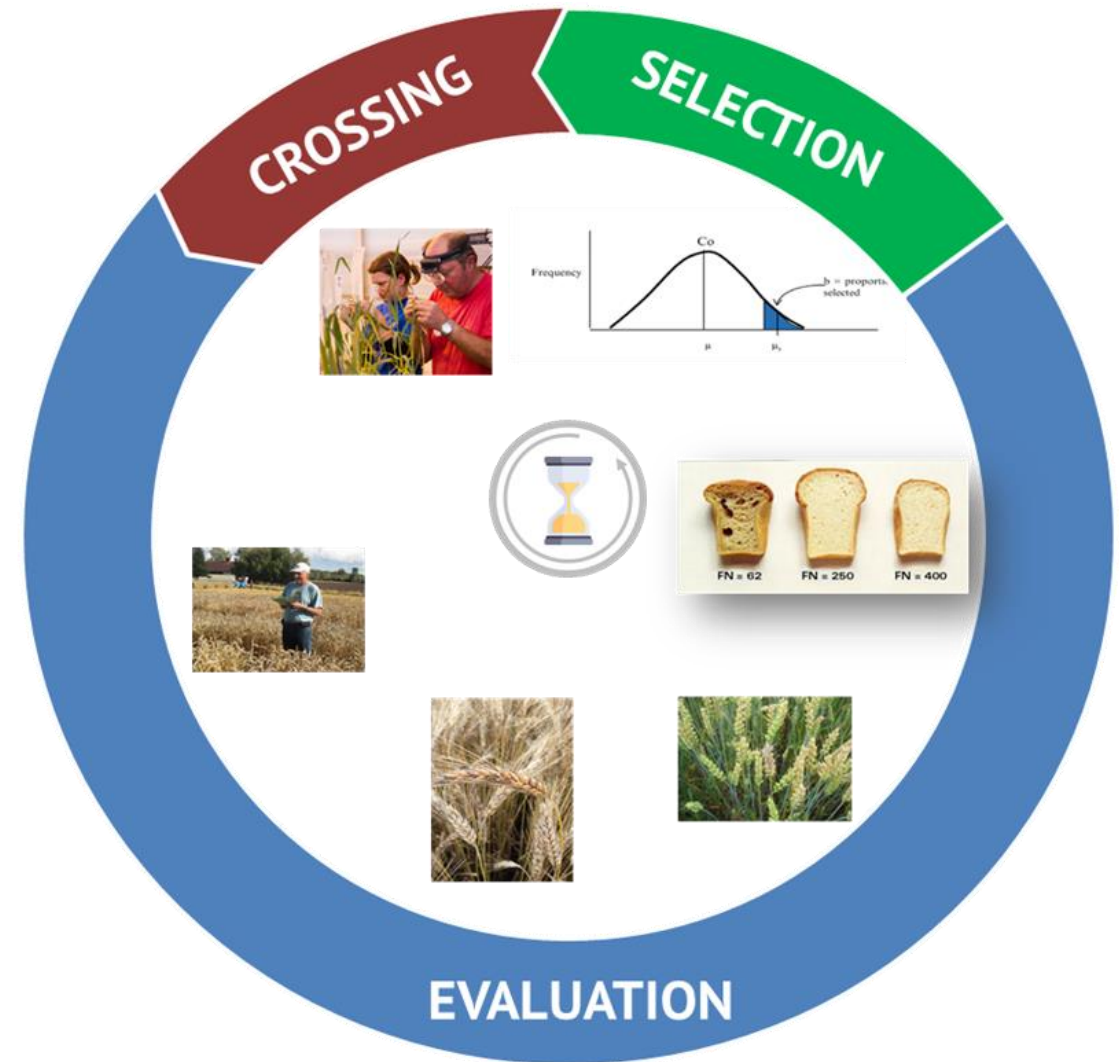
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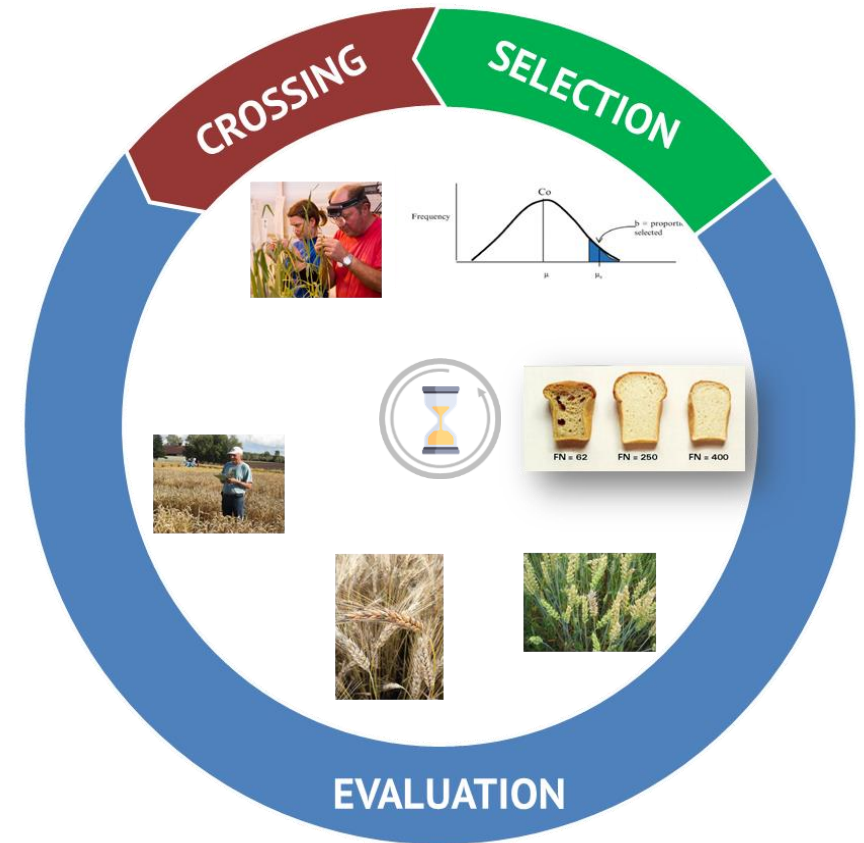
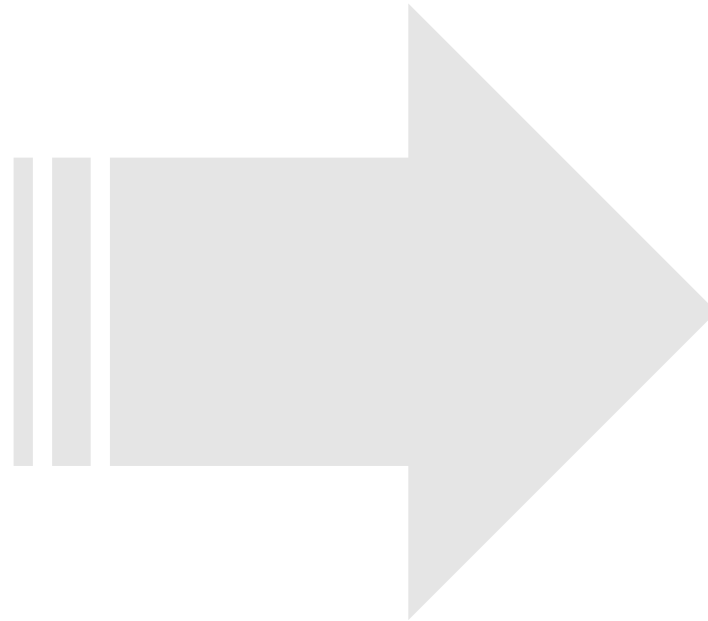


Plant breeding

- ✓ Plant breeding is one of the most sustainable way to improve food security
- ✓ Breeding main steps are – (pre-breeding) crossings, evaluation and selection
- ✓ It takes between 10-20 years to produce a new improve cultivar.
- ✓ Challenges: genome complexity, multi-trait, $G \times E$
- ✓ Plant breeders all the time seek for methods that can increase their selection efficiency and accuracy at low cost



Enable HTP technologies



Efficiency | PrecisionFirst to market

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Clusters

Nordic Pre-breeding Public Private Partnership



Nordic Public Private Partnership for Pre-breeding (PPP)

- ✓ Nordic collaboration between practical plant breeding and plant breeding research – since 2012.
- ✓ Funded by the Nordic countries and plant breeding entities (50/50), and the secretariat is placed at NordGen.
- ✓ PPP aims to:
 - strengthen plant breeding in the Nordic countries
 - promote sustainable use of genetic resources in the Nordic region
 - introduction of new traits in commercial breeding
 - development of efficient tools and methods
 - *Network (pre-competitive collaboration)*



Nordic pre-breeding PPP: 4 phases 2012 – 2023...



PPP_Barley
2012-2020



PPP_Strawberry
2018-2020



PPP_Wheat
2021-2023...

- Obtained knowledge and competence
- Strong network
- Developed breeding methods and tools; e.g., MAS, GS, phenomic....
- New breeding material; e.g., MAGIC



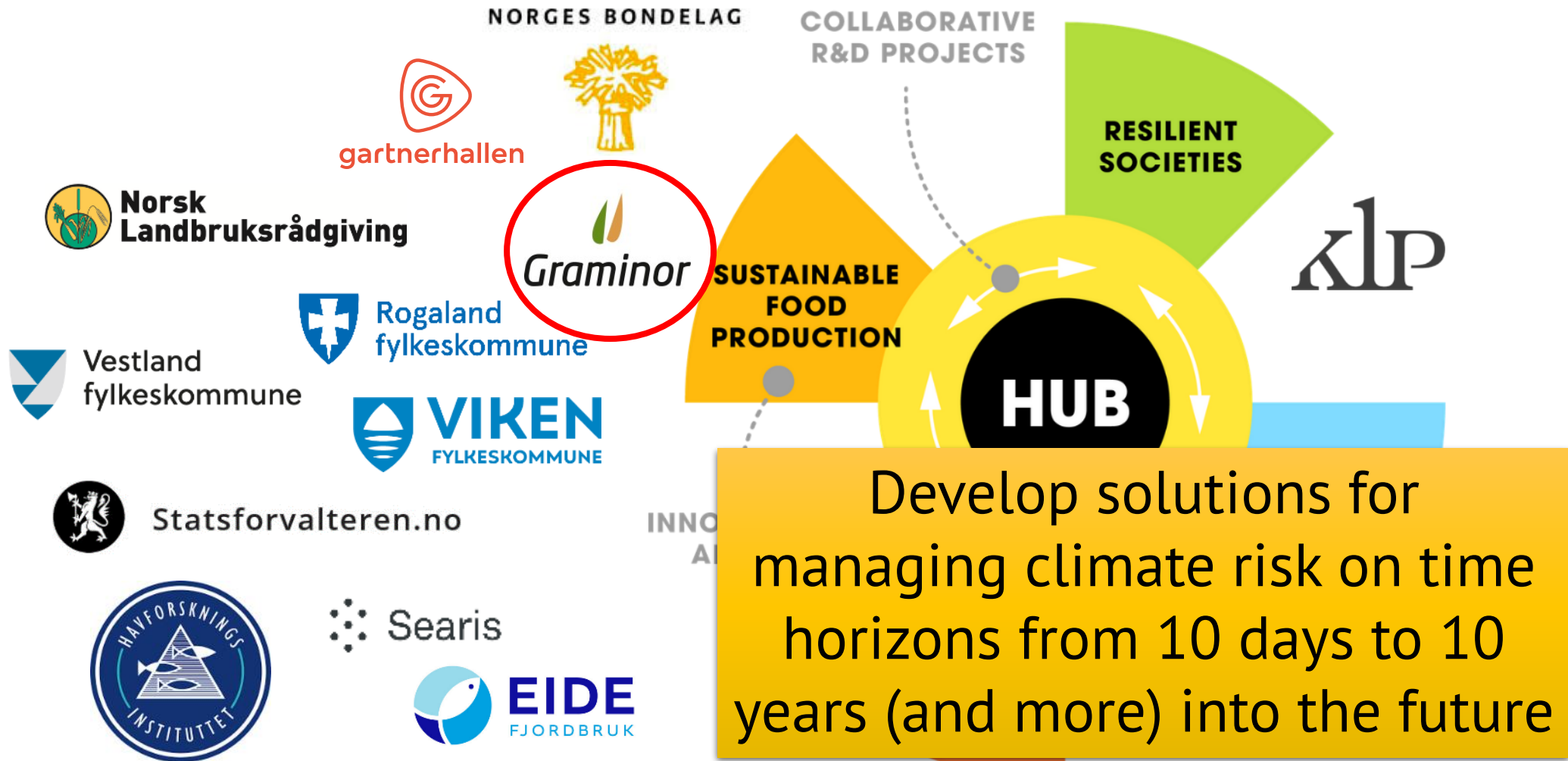
PPP_Phenomics
2015-2023...

PPP_Potato
2021-2023...



climatefutures

Navigating Climate Risk



 Norsk Landbruksrådgiving

 gartnerhallen

NORGES BONDELAG


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COLLABORATIVE R&D PROJECTS

 KLP

 Vestland fylkeskommune

 Rogaland fylkeskommune

 VIKEN FYLKESKOMMUNE

 Statsforvalteren.no

 HAVFORSKNINGSINSTITUTTET

 Searis

 EIDE FJORDBRUK

 NORCE

 Norsk Regnesentral
NORWEGIAN COMPUTING CENTER

 NHH

 NERSC

 Norwegian Meteorological Institute

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Climate Future: Breeding goals

- Short, medium and long-term climate prediction
- Prediction of variety performance (+offspring) in different environments (short-medium-long terms) – based on current and historical information.
- Identify current locations that represent future medium- and long-term climate
- Potential new crops for Nordic market



Thank you!