

Phase I (2004-6)



- OREGIN has increasing visibility on national and international stage - perceived as a success
- Clear objectives, delivered within the 4-5 year timescale

Stakeholder Forum and Network has been developing
- farmers, advisors, breeders, processors, end-users

Focused originally on **trait prioritisation**
- ongoing review responds to changing priorities

Responding to increases in crop areas

Increased **awareness** of Nitrogen use, Carbon accounting

Effects of policy shifts on crop selection environment - now a greater connectivity of commercial activity and policy



Core Project



- Rothamsted Research & Warwick HRI
- Develop resources
- Genepool diversity, plants and pathogens
 - Reference sets
 - Use in 'satellite' projects



Phase II (2007-?)



Crop Genetic Improvement (plant breeding) - an *effective means* of delivering *tangible* contributions to policy objectives for sustainable farming and climate change (Stern Report)

For oilseed rape, *crop traits* prioritised to:

- Ameliorate **Climate Change** through mitigation of GHGs - in context of C accounting and Nitrogen economy for farming and food chain system.
- Improve **Water Quality** - reduce diffuse pollution from nutrients such as phosphates and nitrates leached from arable land.
- Crop and pest **adaptation** to Climate Change - providing a predictive framework
- Improve **Air Quality** - reductions in nitrogen fertiliser-derived ammonia gas emissions

Phase II (2007-)



Time bound pilot experiments on prioritised traits

Demonstrate ability to use core genetic resources from Phase I to:

- determine if **genetic variation** is available (alleles)
- establish if traits are genetically **tractable** (loci, resolution)
- provide tools and information so that traits can be incorporated into UK OSR breeding

→ Enable step change in ability of private sector breeding community to deliver improved varieties that include traits specifically tailored to addressing UK environmental issues

Phase II (2007-)



Year 1

- Nitrogen use efficiency – assimilation + variation for glutamine synthetase
- Variation in protein content and quality
- Integration of datasets (map, diversity sets) – interact with AdVaB
- Plant & pathogen resources characterisation and dissemination
- Modelling effect of climate change on host-fungal pathogen interactions

