

WGIN 2 - 2008 to 2013

- **Content of the new proposal**
- **New management meeting arrangements**
- **Forthcoming Changes to the WGIN website**



Kim Hammond-Kosack

Management Meeting @ RRes

12th March 2009

Wheat Genetic Improvement Network (WGIN) 2008-2013

The Objectives

1 Management meetings – The network

Tools and Resources

- 2 Production Near Isogenic lines (NILs)
- 3 The Avalon x Cadenza Mapping popⁿ
- 4 Paragon gamma and EMS mutagenised popⁿ
- 5 AE Watkins and Gediflux collections
- 6 New mapping popⁿ will for WUE project (9) and 2 new popⁿ to align WGIN 2 with the international wheat genome sequencing effort

Targeted traits

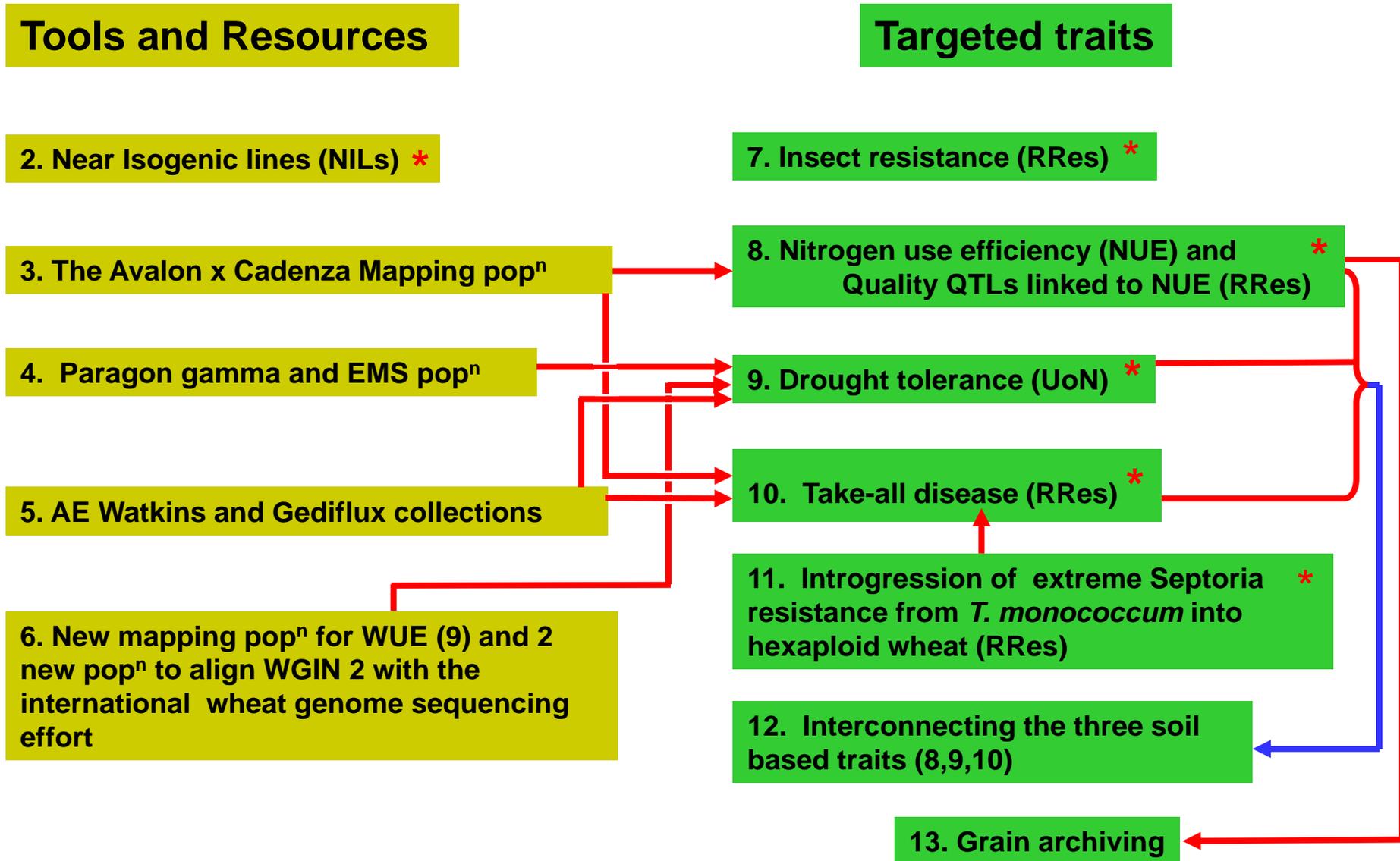
- 7 Insect resistance (RRes)
- 8 Nitrogen use efficiency (NUE) and Quality QTLs linked to NUE (RRes)
- 9 Drought tolerance (UoN)
- 10 Take-all disease (RRes)
- 11 Introgression of extreme resistance to Septoria leaf blotch from *T. monococcum* into hexaploid wheat (RRes)
- 12 Exploring the Interconnections between the three soil based traits (8,9,10)
- 13 Grain archiving

14 Sub-contractor projects

Improving the network and communication of results

- 15 Website
- 16 Electronic Newsletter
- 17 Annual Stakeholders Forum
- 18 Focussed workshops
- 19 International collaborations
- 20 Publicity

WGIN (2008-2013) Key **cross connections (Red)** and **control points (Blue)**



Mapping WGIN 2 onto WGIN 1

WGIN 1	WGIN 2	Remarks
1. Project management	1. Project management	continued
1. Maintaining the network	1. Maintaining the network	continued
A. Resource development	A. Resource development	
3. COS Markers		not continued
	2. Production of near isogenic lines for key traits	new
3. Mapping populations	3. The Avalon x Cadenza mapping population	continued
2. Plant genetic resources and 7 mutagenesis	4. Paragon gamma and EMS mutant lines	continued
4. Hexaploid diversity screen	5. AE Watkins and Gediflux Germplasm Collections	continued
	6. To develop new mapping populations which will align WGIN 2 with the International wheat genome sequencing effort	new
11. Exploring cereal synteny	QTL development and candidate gene selection for various trait	new
	B. Targeted traits	
	7. Resistance to cereal aphids	new
5. Traits - NUE	8. Nitrogen use efficiency (NUE)	continued
	8. NUE linked to grain quality	new
	9. Improvement of water use efficiency and drought tolerance traits	new
5. Traits - NUE	10. Resistance to Take-all disease and low soil inoculum buildup	continued
8. Wheat crossing	11. Introgression of extreme resistance to Septoria tritici leaf blotch from <i>T. monococcum</i>	continued
9. PCR TILLING		not continued
	12. Interconnections between the three soil-based explored traits	new
11. Grain archiving	13. Grain archiving from the the diversity and A x C field trials	continued
6. Sub-contractors	14. Sub-contactor activities	new topics
	C. The other objectives	
12. Website	15. Website	continued
13. Electronic Newsletter	16. Electronic Newsletter	continued
14. The Stakeholders forum and annual conference	17. The Stakeholders forum and annual conference	continued
16. LINK projects	15. Website	existing and new topics
	18. Focussed workshops and discussions	new topics
17. International collaborations	19. International collaborations	continued
18. Publicity	20. Publicity	continued

New management meeting arrangements

Morning session – series of presentations on :

- A selection of WGIN research objectives with new results**
- Other relevant topics – guest speakers**
- Trait discussions**
- New grants: wheat trait / technology - planned / funded**

Involve all the current management meeting invitees

- minutes + ppt made available via website**

Afternoon session – to go through in detail the project objectives / deliverables / Gantt chart

- track progress / examine and discuss**

Involves the scientists and a subset of the MM invitees

- may generate a series of action items with follow up**

Forthcoming Changes to the WGIN website

Target Period for completion - March to May 2009

The current WGIN website

Wheat Genetic Improvement Network

defra
Initiated and supported by the Department for Environment, Food and Rural Affairs Genetic Improvement Networks

Home Research Activities Resources Stakeholders

Home

WGIN - a project supported by Defra

Search the WGIN site

Recent Additions

- Home
- Project Outline
- Forthcoming Events
- Newsletters
- Feedback
- Contacts
- Peer Reviewed Publications
- The Other Defra Networks
- Site Map

Printer friendly page

Delivery of genetic improvement in wheat- The role of UK science

Genetics
Genetic analysis
Positional Cloning
Mutants

Germplasm
Collections
Mapping populations
Mutant populations

Genomics
Bioinformatics
Markers
Transcripts
Targeted mutagenesis

Mechanisms
How do genes change phenotype?

Prioritising Targets- Breeders and Government

Public Roles WGIN

LINK Understanding Traits Genes/Alleles

Plant Breeders

Processors UK agriculture Rural livelihoods Global agriculture Biodiversity Landscape

New Varieties

Next stakeholder meeting - 25 November 2009 at Rothamsted Research

www.WGIN.org.uk

Defra OILSEED RAPE GENETIC IMPROVEMENT NETWORK

Welcome to OREGIN

Providing a pre-breeding pipeline, to integrate sustainability traits into Oilseed Rape cultivars

The Oilseed Rape Genetic Improvement Network (OREGIN) has been successful in achieving initial objectives of providing a focus for the UK Oilseed Rape genetic improvement R&D and stakeholder communities, and a mechanism for prioritising research requirements. **The principal activities of the OREGIN project are the generation, gathering, collation and dissemination of information and genetic resources for the benefit of the stakeholders.** Ongoing discussions amongst the R&D and breeder communities have identified the highest priority requirements in the context of Defra strategic objectives. It is recognised that other trait areas such as pest resistance may be of increasing commercial priority and affect the long-term sustainability of the crop. The components of the OREGIN pre-breeding platform will also provide a foundation for and contribute significantly to other projects of relevance to the overall objectives of achieving improvements in sustainability through crop genetic improvement.



This new site has been divided into the following four sections:

- [About](#) - "What is OREGIN?", project outline, news, contact details and information on the other Defra crop genetic improvement networks
- [Information](#) - Reports, databases, protocols, general information about Oilseed Rape
- [Resources](#) - Genetic diversity for plants and pathogens, experimental materials
- [Stakeholders](#) - Who are the OREGIN stakeholders, details of future and past meetings

OLD Site - The [old site is still available here](#), and still contains the [Pathogen Database](#), until we integrate it with the new site.

OREGIN News:

Presentations given at the Sixth Stakeholder Forum (Friday 21 November 2008) [now available to download](#).

site guide

The site is grouped into the following four sections:

ABOUT - for general information about OREGIN, including news items and contacts.

INFORMATION - for more detailed information about OREGIN, including reports and information tools.

RESOURCES - for experimental resources and research related tools

STAKEHOLDERS - for information on the Stakeholders Forum

Please use our interactive dropdown menus, the side menus, or the link tracker to navigate the site.

--see [site-map](#) for overview

	ABOUT	INFORMATION	RESOURCES	STAKEHOLDERS
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HOM	Project Outline
	Contacts
	Links
	OREGIN Satellite Projects
W	News
	UK-BRC email list

RAPE GENETIC IMPROVEMENT NETWORK

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HOME >

Outline

Databases

Datasets

Protocols (SOPs)

Publications

Publicity

Reports

Defra OILSEED RAPE

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Introducing sustainability traits into Oilseed Rape



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WGIN 2 new



HOME >

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Sponsored by: [Defra \(UK\)](#)
Hosted by: [Rothamsted Research](#)
Maintained by: [Pierre Canon](#)
Edited by: [Graham King](#)
Last updated: January 2009


John Innes Centre


ROTHAMSTED
RESEARCH


defra
Department for Environment
Food and Rural Affairs

Then WGIN 1 site will be converted into the new format

home | site map | contact us

OREGIN *brassica.info* OREGIN

ABOUT INFORMATION RESOURCES **STAKEHOLDERS**

HOME >

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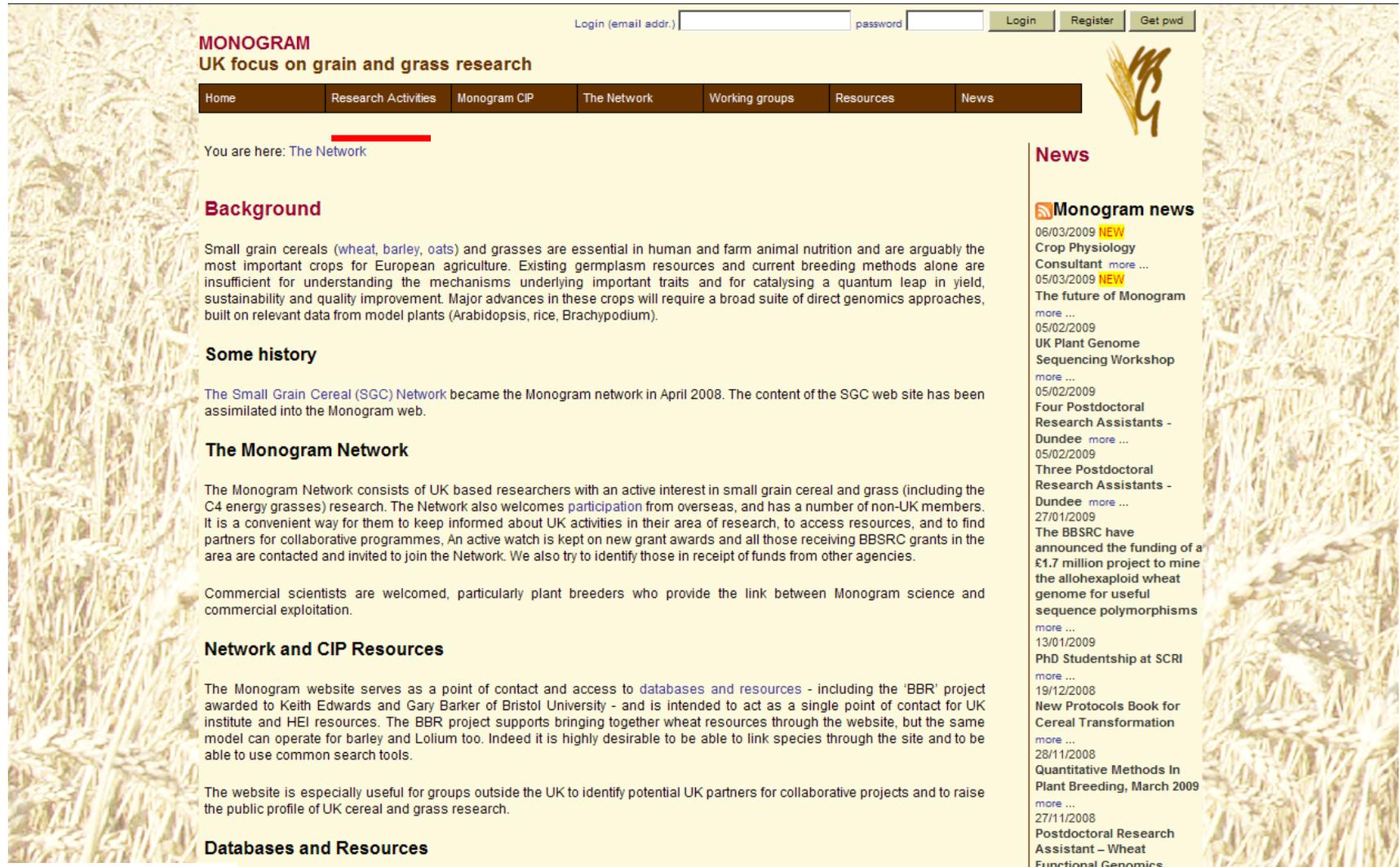
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MONOGRAM – UK focus on grain and grass research

Interconnects WGIN to related projects



The screenshot shows the Monogram website interface. At the top right, there are login and registration fields: "Login (email addr.)" with an input box, "password" with an input box, and buttons for "Login", "Register", and "Get pwd". Below this is the site title "MONOGRAM UK focus on grain and grass research" and a navigation menu with links: "Home", "Research Activities", "Monogram CIP", "The Network", "Working groups", "Resources", and "News". A logo of wheat stalks is on the right. The main content area is titled "Background" and contains text about the importance of grain and grasses. Below this is "Some history" and "The Monogram Network" sections. A "News" sidebar on the right lists recent updates, including "Monogram news" dated 06/03/2009, "Crop Physiology Consultant" dated 05/03/2009, and "The future of Monogram" dated 05/02/2009. The footer features the BBSRC logo and the website URL.

Login (email addr.) password

MONOGRAM
UK focus on grain and grass research

Home Research Activities Monogram CIP The Network Working groups Resources News

You are here: [The Network](#)

Background

Small grain cereals ([wheat](#), [barley](#), [oats](#)) and grasses are essential in human and farm animal nutrition and are arguably the most important crops for European agriculture. Existing germplasm resources and current breeding methods alone are insufficient for understanding the mechanisms underlying important traits and for catalysing a quantum leap in yield, sustainability and quality improvement. Major advances in these crops will require a broad suite of direct genomics approaches, built on relevant data from model plants ([Arabidopsis](#), [rice](#), [Brachypodium](#)).

Some history

The [Small Grain Cereal \(SGC\) Network](#) became the Monogram network in April 2008. The content of the SGC web site has been assimilated into the Monogram web.

The Monogram Network

The Monogram Network consists of UK based researchers with an active interest in small grain cereal and grass (including the C4 energy grasses) research. The Network also welcomes [participation](#) from overseas, and has a number of non-UK members. It is a convenient way for them to keep informed about UK activities in their area of research, to access resources, and to find partners for collaborative programmes. An active watch is kept on new grant awards and all those receiving BBSRC grants in the area are contacted and invited to join the Network. We also try to identify those in receipt of funds from other agencies.

Commercial scientists are welcomed, particularly plant breeders who provide the link between Monogram science and commercial exploitation.

Network and CIP Resources

The Monogram website serves as a point of contact and access to [databases and resources](#) - including the 'BBR' project awarded to Keith Edwards and Gary Barker of Bristol University - and is intended to act as a single point of contact for UK institute and HEI resources. The BBR project supports bringing together wheat resources through the website, but the same model can operate for barley and Lolium too. Indeed it is highly desirable to be able to link species through the site and to be able to use common search tools.

The website is especially useful for groups outside the UK to identify potential UK partners for collaborative projects and to raise the public profile of UK cereal and grass research.

Databases and Resources

News

Monogram news

06/03/2009 **NEW**
Crop Physiology Consultant [more ...](#)

05/03/2009 **NEW**
The future of Monogram [more ...](#)

05/02/2009
UK Plant Genome Sequencing Workshop [more ...](#)

05/02/2009
Four Postdoctoral Research Assistants - Dundee [more ...](#)

05/02/2009
Three Postdoctoral Research Assistants - Dundee [more ...](#)

27/01/2009
The BBSRC have announced the funding of a £1.7 million project to mine the allohexaploid wheat genome for useful sequence polymorphisms [more ...](#)

13/01/2009
PhD Studentship at SCRI [more ...](#)

19/12/2008
New Protocols Book for Cereal Transformation [more ...](#)

28/11/2008
Quantitative Methods In Plant Breeding, March 2009 [more ...](#)

27/11/2008
Postdoctoral Research Assistant – Wheat Functional Genomics

WGIN – The social and economic impact

Defra's drivers for research procurement

Climate change

- energy reductions**
- crop resilience**

Improving the environment

- water quality**
- air quality**
- soil quality**

Food security and safety

- ensuring production matches needs**
- yield stability**
- quality stability**
- free from harmful contaminants**

Climate, Energy, Environmental, Social and Economic Impact of the chosen WGIN traits

‘Public Good Science’

RESEARCH OBJECTIVES	CLIMATE CHANGE	ENERGY REDUCTION	IMPROVED SOIL QUALITY	IMPROVED AIR QUALITY	IMPROVED WATER QUALITY	INCREASED YIELD	IMPROVED GRAIN QUALITY	INCREASED FOOD SECURITY
7. INSECT RESISTANCE								
8a. NITROGEN USE EFFICIENCY								
8b. QUALITY QTLs LINKED TO NUE								
9. DROUGHT TOLERANCE								
10. TAKE-ALL DISEASE REDUCTION								
11. SEPTORIA BLOTCH RESISTANCE								
12. THE THREE COMBINED SOIL TRAITS (8 + 9 + 10)								
TOTALS								

Main Key

0 – no effect
1 – low
3 – medium
5 - high

But will allow

0 - 1
1 - 3
3 - 5

Where next ?

1. To create flow charts – which explore additional inter - dependencies

Discuss these at the next management meeting

Revisit the impact scores we came up with today

**Climate, Energy, Environmental, Social and Economic
Impact of the chosen WGIN traits
'Public Good Science'**

**1. What are the current barriers / hurdles to the
Implementation of public good science ?**

2. How can the breeders come on board ?