An international research partnership for wheat improvement

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The Wheat Initiative

- Created in 2011 following endorsement by G20 Agriculture Ministries to improve food security
- A framework to establish strategic priorities, identify synergies and facilitate collaborations for wheat improvement at the international level
Why Wheat?

- The world’s **most widely grown staple crop** (>220 mha)
- Provides **20% of all calories and protein** in developing and developed countries

**but**

- **Wheat production did not always meet demand** in past years
- **Demand will increase by 60% in 2050/2010**, while yields are stagnating and resources are declining
- **Investment in wheat R&D is disproportionately low** given the importance of the crop
The world needs wheat

1 in 8 people in the world (868 million) are undernourished

Cereals prices have risen by an average of 6% per year since 2000

Source: Thomas 2014, Borlaug 100

An extra billion tonnes of cereals will be needed by 2030

FAO, 2002. World agriculture 2030: Main findings

FAO Cereals Price Index

Source: Thomas 2014, Borlaug 100
Wheat: Relation area/yield

Mean 2008-2010

Source: USDA
Courtesy: Limagrain
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How to achieve the needed production increase for wheat?

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Need for increased coordination
Wheat Initiative Vision and Mission

- **Vision:** a vibrant global wheat research community sharing resources, capabilities, data and ideas to improve wheat land productivity, quality and sustainable production

- **Mission:** develop a global Strategic Research Agenda and support its implementation through coordinated actions, knowledge and resource sharing and efficient investment
All countries and companies welcome!

16 countries, 9 private companies, 2 CGIAR Centres
Facilitating delivery by leveraging synergies and collaborations
**Expert Working Groups**

**Established**
- Wheat Information System
- Genetics and genomics of Durum wheat
- Wheat breeding methods and strategies
- Wheat phenotyping to support wheat improvement
- Wheat plant and crop modelling
- Nutrient use efficiency

**Developing**
- Control of wheat pathogens and pests
- Adaptation of wheat to abiotic stress
- Global wheat germplasm conservation and use community
- Improving wheat quality for processing and health

**Newly approved**
- Agronomy
From an Vision Document to a Strategic Research Agenda

Wheat Initiative

An international vision for wheat improvement

May 2013

www.wheatinitiative.org

2013

Strategic Research Agenda

July 2015

www.wheatinitiative.org

2015
The Strategic Research Agenda

Wheat Initiative SRA themes

1 - INCREASE WHEAT YIELD POTENTIAL
2 - PROTECT YIELD
   • Controlling wheat diseases and pests
   • Improving wheat tolerance to abiotic stress
3 - PROTECT THE ENVIRONMENT AND INCREASE THE SUSTAINABILITY OF WHEAT PRODUCTION SYSTEMS
   • Nutrient use efficiency
   • Agronomy and crop management
4 - ENSURING THE SUPPLY OF HIGH QUALITY, SAFE WHEAT PRODUCTS

- Challenges and aspirations
- Research Needs
- Priority actions
First benefits

- Building momentum by stimulating debate and discussion
  - More focused support of wheat research at national level
  - Better understanding of undergoing international wheat research

- Coordination of wheat research, sharing efforts and resources
  - Towards a Wheat dedicated Information System for scientific data (wheatis.org)
  - International Wheat Yield Partnership
  - Support to the wheat genome reference sequence
  - Building of a shared reference Durum wheat collection
  - First steps to build a Wheat VIVO portal (who is doing what, where, with whom...)
Next challenge: implementation of the SRA

- **Definition of initial global priorities**
  - Heat and drought tolerance
  - Nitrogen use efficiency
  - Post-reference sequence wheat genomics

- **Implementation plans for each priority** (EWGs)

- **Mechanisms to facilitate delivery**
  - Alignment of strategies
  - Public-private cooperation frameworks
  - **Joint funding mechanisms** (research programmes, meetings)- a Belmont Forum-like organisation for Ag Research?

- **Engagement and long term commitment essential**
  - What Members put in dictates what they get out
  - ‘Easy’ to launch – staying afloat and delivering is the real challenge
www.wheatinitiative.org

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The Belmont Forum
(www.belmontforum.org)

• Vision: *To deliver knowledge needed for action to avoid and adapt to detrimental environmental change including extreme hazardous events*

• Members: world's major and emerging funders of global environmental change research (e.g. NSFC, EC, ANR, DFG, MOES, NRF, NERC, NSF)

• Members participate in Collaborative Research Actions based on Calls for Proposals

• Each Belmont Forum member funds researchers from their own country

• Researchers from countries not participation in the Call may participate in a research project at their own expense