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EU activities for the conservation and sustainable use of genetic resources for food and agriculture

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Genetic resources: cutting across several policies and competences at EU level

- Convention on Biological Diversity, Nagoya and other biodiversity policies/activities: DG Environment
- TPGRFA and seed legislation: DG SANTE
- Patents (incl. in breeding): DG GROW
- Promotion and use of GenRes in agriculture (and forestry): DG AGRI
- Research and innovation for GenRes in agriculture and forestry: DG AGRI (DG RTD)

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EU Research on Genetic Resources for agriculture and forestry

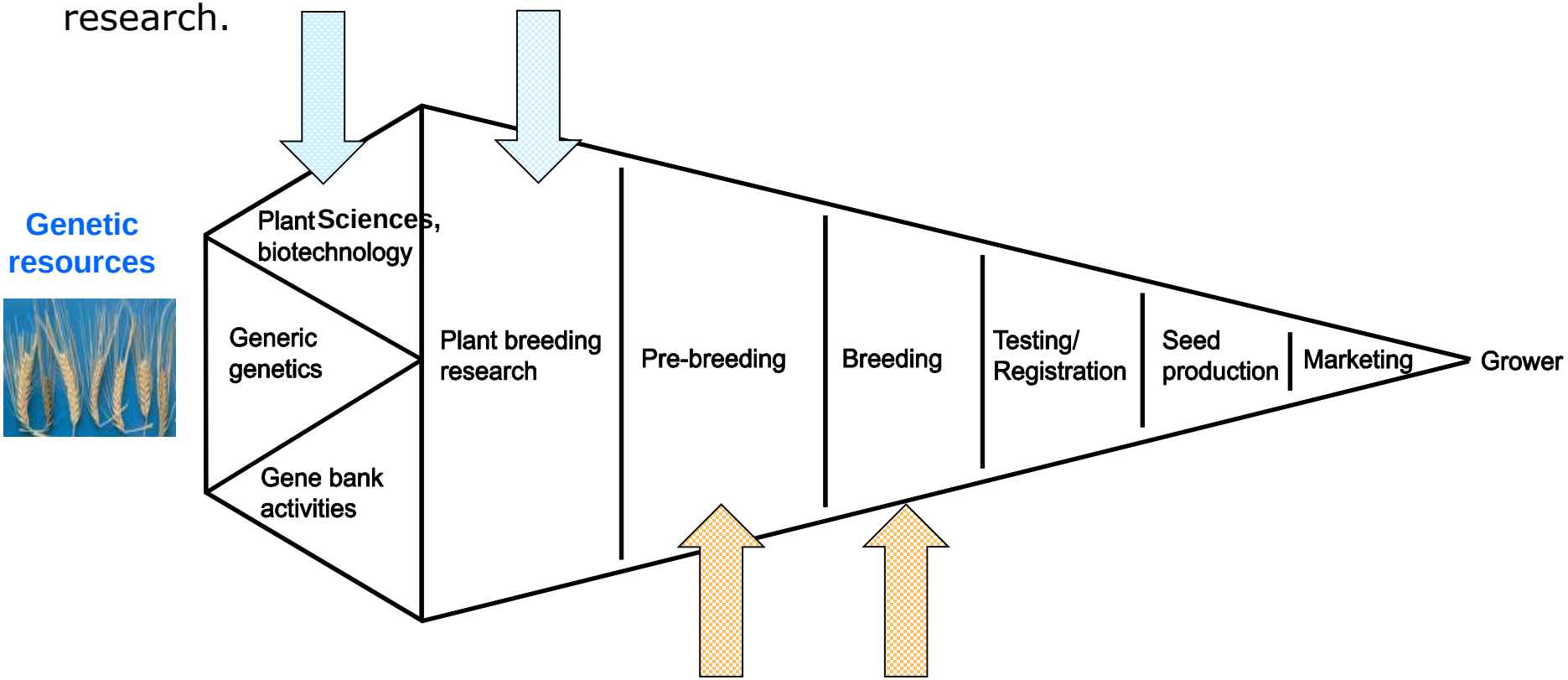
- Diversity: crucial element for productivity and successful adaptation of plants/animals to changing environments.
- Genetic resources as basis for diversity in agricultural systems and for base broadening in breeding activities
- Research activities to support in-situ/ex-situ conservation as well as use and access to genetic resources
- Landraces and crop wild relatives particularly valuable sources of genetic variation
- Characterisation of genetic resources: Prerequisite for their efficient use, e.g. n pre-breeding
- Overall advances in crop and animal production as result of optimising GxMxE interactions

Funding for genetic resources research under Framework Programmes

- Supporting Policy Framework: CBD, ITPGRFA, Community GenRes programme
- Throughout FP5/FP6 the International Cooperation Programme has provided continued support to underutilised crops
- Under FP6 FOOD programme: Research on genetic resources not specifically tackled but to some extent embedded in major genomic projects, such as EU-SOL, BIOEXPLOIT, GRAIN LEGUMES
- Under FP7: Three projects specifically dedicated to improving use of plant genetic resources (CWR, landraces). Other breeding oriented projects contributing to conservation, characterisation and use
- Horizon 2020: First two work programmes of Societal Challenge 2 (2014/2015; 2016/2017) have systematically tackled genetic resources

Translational research on genetic resources in agriculture

In FP7 research efforts focused on more "upstream", pre-competitive research.



Horizon2020 funding allows to get closer to closer-to-market activities

Expected impact of previously funded GenRes projects

Conservation

- Development of 'omic tools for characterisation of genetic resources (GR)
- Extension/improvement of collections
- Development of conservation strategies

Access

- Harmonisation of access to inventories
- Development/improvement of information systems on collection and characterisation of GR

Use

- Analysis of breeders needs
- Dissemination and training activities to breeders and farmers on GR collections and use of information
- Transfer of interesting germplasm, markers or other genetic information to breeders

H2020 Openings for plant and agricultural research

Part I Excellent Science

1. European Research Council
2. Future and Emerging Technologies
3. Marie Sklodowska-Curie Actions
4. Research Infrastructures

Part II Industrial Leadership

1. Enabling & Industrial Technologies
   - 1.1 Information and communication technologies
   - 1.2 Nanotechnologies
   - 1.3 Advanced materials
   - 1.4 Biotechnology
   - 1.5 Advanced manufacturing 1.6 Space
2. Access to Risk Finance
3. Innovation in SMEs

Part III Societal Challenges

1. Health and wellbeing
2. **Food security, sustainable agriculture, marine research and the bioeconomy**
3. Secure, clean and efficient energy
4. Smart, green and integrated Transport
5. Climate Action, Environment, Resource Efficiency
6. Inclusive, innovative and reflective societies
7. Secure societies

Special features of Horizon 2020 and SC2

- Horizon 2020 rolled out on the basis of publication of research topics in bi-annual work programmes
- Topics are generally drafted in an "open" manner, in response to a specific challenge
- Only in exceptional cases: very specific focus
- "Multiactor projects" in SC2: Bring together various types of expertise (e.g. research, farming, advice); connecting researchers with "users" of results

Record of funding for GenRes under H2020, SC2

2014
- **Traditional resources for agricultural diversity and the food chain** (10m€)
- Projects: DIVERSIFOOD; TRADITOM; TREASURE

2015
- **Management and use of genetic resources (focus on ex-situ)** (20m€)
- Projects: G2P-SOL; GenTree; IMAGE

2016
- **Several topics to increase interspecific species diversity** (30m€)
- **EU-China cooperation on mutual access to genetic resources** (5 m€)

2017
- **Networking and improving capacities for in-situ conservation** (2m€)

2018-20
- What next? Gaps?

Other forms of support to GenRes

- Rural Development Programmes
- GenRes Focus Group of European Innovaton Partnership on Agriculture
- Financial support to CGIAR genebank system
- Policy coordination, e.g. EU ABS regulation No 511/2014 for Nagoya implementation

Questions

CHALLENGES

NEEDS

THEMES

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Points for discussion?

- In which areas is more coordination/support needed? Tools, methods, infrastructures
- Awareness of existing instruments/bodies (incl. EP, EC, Council, G20) and their effective use to make voices heard (e.g. AGRI-FISH Council)
- Link up with international efforts, collections and processes (e.g. CGIAR, GODAN) → Visibility!
- Interoperability of databases (e.g. ECPGR)
- Governance: Specific European body/mechanism or sites needed for dealing with GenRes related activities?
- Public/private sector collaboration?
- Comprehensive vs "specialised" EU-wide GenRes strategy(ies)?

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Thank you for your attention!

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