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
- CGRFA:
- 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)
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

<table>
<thead>
<tr>
<th>Category</th>
<th>Impact Description</th>
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<tbody>
<tr>
<td><strong>Conservation</strong></td>
<td>Development of ‘omic tools for characterisation of genetic resources (GR)</td>
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<td>Extension/improvement of collections</td>
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<td>Development of conservation strategies</td>
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<td><strong>Access</strong></td>
<td>Harmonisation of access to inventories</td>
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<td>Development/improvement of information systems on collection and characterisation</td>
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<td><strong>Use</strong></td>
<td>Analysis of breeders needs</td>
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<td>Dissemination and training activities to breeders and farmers on GR collections and use of information</td>
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<td>Transfer of interesting germplasm, markers or other genetic information to breeders</td>
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<td>Part I Excellent Science</td>
<td>Part II Industrial Leadership</td>
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<tr>
<td>2. Future and Emerging Technologies</td>
<td>1.1 Information and communication technologies</td>
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<td>3. Marie Sklodowska-Curie Actions</td>
<td>1.2 Nanotechnologies</td>
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<td>4. Research Infrastructures</td>
<td>1.3 Advanced materials</td>
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<td>1.4 Biotechnology</td>
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<td>1.5 Advanced manufacturing</td>
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<td>1.6 Space</td>
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<td>2. Access to Risk Finance</td>
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<td>3. Innovation in SMEs</td>
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**H2020 Openings for plant and agricultural research**
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
  • Projects: DIVERSIFOOD; TRADITOM; TREASURE

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

2016
• Several topics to increase interspecific species diversity
• EU-China cooperation on mutual access to genetic resources

2017
• Networking and improving capacities for in-situ conservation

2018-20
• What next? Gaps?
Other forms of support to GenRes

- Rural Development Programmes
- GenRes Focus Group of European Innovation Partnership on Agriculture
- Financial support to CGIAR genebank system
- Policy coordination, e.g. EU ABS regulation No 511/2014 for Nagoya implementation
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)?
Thank you for your attention!