Supporting genebanks forever

Nelissa Jamora & Luigi Guarino
The World’s Rice Bowl: Protected in Perpetuity

Massive rice collection to receive permanent financial backing, saving almost all known varieties of rice crops, forever

(SINGAPORE – 12 October 2018) – THE WORLD’S LARGEST rice collection is to receive permanent funding for the conservation and sharing of 136,000 varieties of the staple crop that feeds
Endowing genebanks

Portfolio Market Value vs Cumulative Contributions

- Over $29m withdrawn over time, primarily for long term grant funding
- $25.3 million withdrawn & used to support genebank operations since 2005
Three Pillars to a Global System

- International collections
- Key national & regional collections
- Svalbard Global Seed Vault
International Genebanks (Article 15)
A global service

[Diagram showing the distribution of services with percentages and numbers for different regions and institutions.]

- Africa/Rice: 11,756 (19%)
- Americas: 9,254 (15%)
- Asia: 25,197 (41%)
- Australia, NZ, & Pacific: 3,668 (6%)
- Europe: 11,501 (19%)

Total: 41,336 (67%)
Endowing genebanks

- Hawtin et al. 2010 – CGIAR genebanks – $500M endowment target
- CePaCT costing study – €30-40M endowment target
- Another CGIAR costing study underway
- Costing 5 African genebanks
The Genebank Platform

2012-2016
- Genebank CRP

2017-2022
- Genebank Platform

www.genebanks.org
The Genebank Platform supports the core activities of the CGIAR genebanks. Day-to-day management of the genebanks is the responsibility of the Center.

Agreements between the CGIAR Centers and the International Treaty on Plant Genetic Resources for Food & Agriculture (ITPGRFA) oblige the CGIAR genebanks to:

- make collections & data available under the terms of the ITPGRFA
- manage their collections following the highest standards of operation

Report to 1 sub-IDO 1.4.4: Increased conservation & use of PGRFA
**Objectives**

**Conservation Module**
- To sustain core genebank operations and ensure germplasm is secure and available
- To improve core genebank operations and management

**Use Module**
- To facilitate more effective access and use through targeted delivery of germplasm that better meets the needs of users

**Policy Module**
- To ensure Centers comply with international policies and laws, increase their influence in policy-making processes and strengthen capacity of national programs

87%

3%

3%
<table>
<thead>
<tr>
<th>Essential operations</th>
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<tbody>
<tr>
<td>Acquisition</td>
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<td>Characterization</td>
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<td>Cryopreservation</td>
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<td>Distribution</td>
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<td>Germination testing</td>
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<td>Germplasm health testing</td>
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<td>Information and data management</td>
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<td>In Vitro subculture</td>
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<td>Live Plants</td>
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<td>Long-term storage</td>
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<td>Medium-term storage</td>
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<tr>
<td>Regeneration /Multiplication</td>
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<td>Seed processing</td>
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- Long-term storage
- Safety duplication
- Regeneration & characterization
- Information management
- Disease testing
- Distribution
• 11 CGIAR genebanks
• 11 CGIAR Germplasm Health Units (GHUs)
• 8 System activities – Quality Management, GRIN-Global, Genesys, Gap analysis, Policy, Use, Seed Quality, Regional collections
• 11 CGIAR Center Finance

27 CGIAR crops

- Andean roots & tubers
- banana
- barley
- beans
- cassava
- chickpea
- cocoyam
- cowpea
- faba bean
- forages
- fruit trees
- grasspea
- ground nut
- legumes
- lentil
- maize
- multipurpose trees
- pea
- pearl millet
- pigeonpea
- potato
- rice
- small millets
- sorghum
- sweet potato
- wheat
- yam
Welcome to the Genebank Online Reporting Tool

The ORT is an online platform to support the CGIAR genebanks in their results-based planning and reporting of activities, outputs, and outcomes. It covers the coordination and monitoring of the Genebank Platform and captures relevant performance indicators for programmatic reporting to the Platform Management Team, the CGIAR System Management Board, and the Crop Trust’s Executive Board.
1. **Availability**: 90% accessions legally available – 79%

2. **Security**: 90% accessions safety duplicated – 55% seeds, 79% clonal

3. **Data availability**: 90% accessions documented and available online – 95% uploaded, 67% DOI, 6.04 PDCI

4. **QMS**: Agreed elements of QMS/ISO are in place – 41 SOPs drafted (107 mapped), 8 risk management, 11 capacity building, 3 succession planning, barcoding, 6 security. [2 with ISO]

5. **Use**: Germplasm distribution – >109k samples, 95 countries in 2017
2012-17 Performance

All Centers

% availability
% safety duplication (seed)

2012 2013 2014 2015 2016 2017

0% 20% 40% 60% 80% 100%
2012-17 IRRI

% availability
% safety duplication (seed)

2012 2013 2014 2015 2016 2017
1. Clear and transparent costing of an agreed set of essential operations
2. Systematic, regular external reviews
3. Establishment of a *sui generis* quality management system (QMS)
4. Short-term upgrading to reach and maintain agreed performance targets
5. Regular online reporting on an exhaustive set of indicators
6. A 5-year renewable investment and upgrading plan for the genebank in the context of its mother institute
What about European genebanks?