The Second Report on the State of the World’s Plant Genetic Resources for Food and Agriculture

Shivaji Pandey
Director, Plant Production and Protection
FAO

Iran Room, 26.10.2010
Plants, PGRFA and Food Security

• Crops and their wild relatives constitute Plant Genetic Resources for Food and Agriculture (PGRFA)
• PGRFA provide a foundation for food security, livelihoods and for facing climate change
• Loss of diversity of PGRFA because of ignorance, poverty and climate change
• Loss of PGRFA threatens attainment of MDG-1
Global PGRFA interdependency
(Example: wheat)
Second Report: An in-depth Assessment

Analyses status, trends, policy and technical advances
Points to the gaps and needs in the sector

Coverage of the PGRFA Sector

- Collections
  - In-Situ
  - Ex-Situ

- Conservation

- Utilization
  - Crop Improvement
    - Breeding

- Delivery
  - Seed Production
    - Formal
    - Informal
Key Partners and Collaborators

• Preparation overseen by the Commission on Genetic Resources for Food and Agriculture (CGRFA)
• 1,200 stakeholders of 113 national agricultural services
• 5 Donors – Canada, Italy, Japan, Norway and Spain
• Bioversity International, 5 other CG- Centers, and GCDT

<table>
<thead>
<tr>
<th>Region</th>
<th>Country Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>24</td>
</tr>
<tr>
<td>Americas</td>
<td>22</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>19</td>
</tr>
<tr>
<td>Europe</td>
<td>31</td>
</tr>
<tr>
<td>Near East</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
</tr>
</tbody>
</table>
In the process 65 developing countries established long term mechanisms for information sharing (www.pgrfa.org).

THE SECOND REPORT OF THE STATE OF THE WORLD’S PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Plant Production and Protection Division
Major Changes in Conservation since 1998

- Greater recognition of importance of PGRFA
- 1,750 gene banks hold 7.4 M samples, up from 6 M in 1998; 240,000 samples new samples
- International Treaty on PGRFA adopted by FAO Conference in 2001, now fully functional
- Global Crop Diversity Trust established in 2004
- Svalbard Seed Vault established in 2008
Major Gaps and Needs in Conservation

• Many banks with poor funding and facilities
• Large unplanned duplication (only 1-2 M samples are estimated to be unique)
• 45% of total collections held in just 7 countries, so increased need for facilitated access
• In-situ conservation - 30% more Protected Areas but not necessarily secure
• Crop wild relatives poorly collected and preserved
Sustainable use of PGRFA

- Lower or similar national capacities – quantity no substitute for quality
- Increase of private sector role both in breeding and seeds
- Focus largely on major crops and yield gains
- Biotechnology & informatics advances poorly integrated in national breeding programmes
- New capacities and funds to scientists
- Targeted use of diversity (e.g., for climate change, pests, malnutrition)
- Public–private partnership to access and deploy technologies
Seed Systems: Commercial vs smallholder Farmers

Commercial Farmers
- Served by private sector
- 5 MNC run 30% of global market
- Near 100% use of high quality, replaceable seed of improved varieties

Smallholder Farmers
- Served by public sector or NGOs and mainly farm-saved seeds
- Limited access to quality seeds of improved varieties
- Lack facilities, funds and markets

<table>
<thead>
<tr>
<th>World regions</th>
<th>Billion US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASIA</td>
<td>10</td>
</tr>
<tr>
<td>NAFTA</td>
<td>9,5</td>
</tr>
<tr>
<td>EU -27</td>
<td>9</td>
</tr>
<tr>
<td>CENTRAL &amp; SOUTH AMERICA</td>
<td>3,5</td>
</tr>
<tr>
<td>AFRICA</td>
<td>1,1</td>
</tr>
<tr>
<td>REST OF THE WORLD</td>
<td>3,4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>36,5</strong></td>
</tr>
</tbody>
</table>

THE SECOND REPORT OF THE STATE OF THE WORLD’S PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE
Plant Production and Protection Division
National legislations relevant to PGRFA have increased dramatically

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosafety Protocol</td>
<td>157</td>
</tr>
<tr>
<td>CBD</td>
<td>193</td>
</tr>
<tr>
<td>IPPC</td>
<td>176</td>
</tr>
<tr>
<td>ITPGRFA</td>
<td>126</td>
</tr>
<tr>
<td>Seed Certification</td>
<td>125</td>
</tr>
<tr>
<td>UPOV</td>
<td>68</td>
</tr>
<tr>
<td>WTO-TRIPS</td>
<td>147</td>
</tr>
</tbody>
</table>

Percentage of countries that have adopted national legislation on new plant varieties
Urgent Call for Action

- Members should increase their own investment in collection and conservation of PGRFA
- Members should build back their technical capacity and research infrastructure for sustainable use
- International community should support country initiatives
- Countries should adopt and implement International Treaty on PGRFA
- Broaden genetic diversity in food production
THANK YOU

The Second Report on THE STATE OF THE WORLD’S PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Plant Production and Protection Division