Building Capability for Improving Agricultural Plant Health across Georgia through UK Assistance and Cooperation

A joint presentation

Dr Zoia Sikharulidze, Institute of Plant Immunity (IPI)
Republic of Georgia

Dr Robert Bolton, Food & Environmental Research Agency (Fera), United Kingdom
The UK- Georgia Collaboration

- Institute of Plant Immunity, Kobuleti, West Georgia

- The Food and Environmental Research Agency, York, England, United Kingdom

- Building capability in plant health diagnostics and field sciences for the emerging agricultural economy in Georgia

- Funded by UK through the G8 Partnership: ISTC project G1093P 2004-2008
The starting point at IPI

• Experienced plant diseases scientists, traditional skills
• Highly focussed on diseases of cereal crops
• No links with Georgian national infrastructures, work not applied to strategic needs
• Apparently major endemic disease problems in most Georgian crops
• No data on scale or scope of plant disease impacts
The Project

• Employ and retrain the core scientific staff

• Build capacity and capability for agricultural work

• Renovate/repair key laboratories/infrastructure

• Procure appropriate equipment

• Staff/management training in sustainability
Scientific Objectives

• Modernise agricultural scientific practice
• Study fungal diseases of cereals in field and laboratory
• Develop wider capacity in crops/diseases assessment
• Establish national reference collection of plant diseases
• Build scientific and government linkages
Summary of Results

8 diverse agroecological zones were surveyed, revealing extensive crop disease in wheat, grapevine, citrus fruit and nuts.

Wheat:

Tremendous pathogen diversity and emerging resistance

Effectiveness of resistance genotypes was studied to inform choice of stronger crop varieties
Developing a National Culture Collection

- Disease surveys and new laboratory methods and capabilities
- Collection now contains over 500 valuable accessions
- A growing intellectual resource for IPI, Georgia, and for international plant health collaborations
- Capacity for collection and management of a culture collection

<table>
<thead>
<tr>
<th>Crop</th>
<th>Number of pathogens isolated</th>
<th>Number of strains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>14</td>
<td>134</td>
</tr>
<tr>
<td>Barley</td>
<td>8</td>
<td>56</td>
</tr>
<tr>
<td>Oat</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Maize</td>
<td>11</td>
<td>73</td>
</tr>
<tr>
<td>Rye</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Vine</td>
<td>11</td>
<td>134</td>
</tr>
<tr>
<td>Tea</td>
<td>9</td>
<td>61</td>
</tr>
<tr>
<td>Potatoes</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Kiwi</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Nut</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Citrus</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Okra</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Stevia</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Pear</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Bean</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
International Conference & Workshop

The first International Transcaucasus Conference on Plant Pathology
Tbilisi, September 2008

100+ plant scientist delegates
11 nations represented

33 papers on crop diseases in 4 sessions

Multiple links with international scientists

Workshop: 40 invited phytosanitary scientists compared crop diseases and risk assessments
Benefits of the project outputs

• Established capacity in Georgia for modern disease surveillance in cereal crops

• Created wider capabilities for disease detection and identification

• Created capacity for modern molecular biological disease diagnostics

• Identified the potential scale of disease in cereal crops

• Initiated networks with national and international scientists
Achieving sustainability: the next stage

- Extend capacity training into strategic planning and business development
- National disease surveys of 3 main crops to inform agriculture policy
- Develop collaborative working links with scientists in neighbouring states
- Develop national culture collection of crop diseases
- Consolidate diagnostic capabilities and extend techniques proficiency
- Build sustainable services with government and private sector customers
Summary: Consistency with BTWC

• Good example of the 2009 topic, highlighting the importance of plant health

• Reduces vulnerabilities and strengthens the Convention by:
  - improving diagnostic capacity and establishing disease surveillance controls
  - enhancing biosafety and biosecurity
  - promoting transparency and the peaceful use of dual-use skills and knowledge

• Emphasises sustainability - economic benefits increase the likelihood of maintaining capability

• Promotes the BTWC beyond Georgia’s borders – establishes regional cooperation in crop disease monitoring

• Builds confidence in Georgia’s commitment to strengthening the BTWC
Further information & contacts:

Web: www.plantimmunity.ge

Email: zoia-sikharulidze@yahoo.com
+995 994 82808
and/or
robert.bolton@fera.gsi.gov.uk
+44 7711 112685

Poster and handouts (displayed outside room XIX):
‘Building Capacity for Improving Agricultural Plant Health across Georgia through UK assistance and Cooperation’