Orientation to Crop Vulnerability Statements

Crop vulnerability statements (CVS) communicate periodic assessments of the challenges that crops face, particularly from reduced genetic diversity resulting from genetic erosion. Collections of genetic resources are key mechanism for reducing crop vulnerability resulting from genetic erosion and uniformity, and for supplying crop breeding and research programs with novel traits and underlying genes to satisfy evolving demands.

Crop vulnerability statements will be reviewed as part of the periodic (usually annual, sometimes biennial) Crop Germplasm Committee (CGC) meetings. During the CGC meetings, the crop-specific curators will be encouraged to communicate a status update for the crop germplasm collection along the lines of CVS section 3 (see outline below).

After the CGC meetings, the CVS will be updated by the CGC chair, secretary, or designate, and submitted to the CGC for review along with the meeting minutes. After internal review by the CGC, the updated CVS text will be provided tothe CGC Coordinator at the National Germplasm Resources Laboratory (NGRL). The updated CVS will then be posted on the GRIN-Global website for public access.

Following an initial update according to the outline below, the CVS might change relatively little from one year to another, but considerably over a multi-year time span. CGCs should conduct a more comprehensive assessment of current conditions every five or so years, focused particularly on updating CVS sections 2 and 5.

Maximum page lengths are suggested for the different sections of narrative text. Additional information in the form of text, tables, illustrations, etc. could be included as appendices to the narrative text.

Crop Vulnerability Statement Outline

Summary of key points (1 p. maximum)

1. Introduction to the crop (2 pp. maximum)

- **1.1 Biological features and ecogeographical distribution**
- **1.2 Genetic base of crop production**
- **1.3 Primary products and their value (farmgate)**
- **1.4 Domestic and international crop production**
  - **1.4.1 U.S. (regional geography)**

1.4.2 International

2. Urgency and extent of crop vulnerabilities and threats to food security (4 pp. maximum)

- **2.1 Genetic uniformity in the "standing crops" and varietal life spans**
- **2.2 Threats of genetic erosion in situ**
- **2.3 Current and emerging biotic, abiotic, production, dietary, and accessibility threats and needs**
  - **2.3.1 Biotic (diseases, pests)**
  - **2.3.2 Abiotic (environmental extremes, climate change)**
  - **2.3.3 Production/demand (inability to meet market and population growth demands)**
  - **2.3.4 Dietary (inability to meet key nutritional requirements)**
  - **2.3.5 Accessibility (inability to gain access to needed plant genetic resources because of phytosanitary/quarantine issues, inadequate budgets, management capacities or legal and bureaucratic restrictions)**

3. Status of plant genetic resources in the NPGS available for reducing genetic vulnerabilities (5 pp. maximum)

- **3.1 Germplasm collections and in situ reserves**
  - **3.1.1 Holdings**
  - **3.1.3 Genetic coverage and gaps**
  - **3.1.3 Acquisitions**
  - **3.1.4 Maintenance**
  - **3.1.5 Regeneration**
  - **3.1.6 Distributions and outreach**
- **3.2 Associated information**
  - **3.2.1 Genebank and/or crop-specific web site(s)**
  - **3.2.2 Passport information**
  - **3.2.3 Genotypic characterization data**
  - **3.2.4 Phenotypic evaluation data**
- **3.3 Plant genetic resource research associated with the NPGS**
  - **3.3.1 Goals and emphases**
  - **3.3.2 Significant accomplishments**
- **3.4 Curatorial, managerial and research capacities and tools**
  - **3.4.1 Staffing**
  - **3.4.2 Facilities and equipment**
- **3.5 Fiscal and operational resources**

4. **Other genetic resource capacities (germplasm collections, in situ reserves, specialized genetic/genomic stocks, associated information, research and managerial capacities and tools, and industry/technical specialists/organizations) (2 pp. maximum)**
5. **Prospects and future developments (2 pp. maximum)**
6. **References**
7. **Appendices (number and lengths at the CGC's discretion)**