

National Agricultural Research, Extension, Education and Economics Advisory Board

Office of the Executive Director
South Building, Room 3901
REE Advisory Board Office
U.S. Department of Agriculture
Washington, DC

Mailing Address:
STOP 0321
1400 Independence Ave SW
Washington, DC 20250-0321
Telephone: 202-720-8408
Fax: 202-720-6199

Report of the National Genetics Resources Advisory Council to the Secretary of Agriculture

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The National Genetics Resources Advisory Council was originally established by the Food, Agriculture, Conservation and Trade Act of 1990. While maintaining a charter, the activities of the Council underwent a period of dormancy until it was reestablished under the direction of Department of Agriculture (USDA) Secretary Thomas Vilsack in 2011. At that time the Council was reactivated as a committee of the National Agricultural Research, Extension, Education and Economics Advisory Board (NAREEEAB). The Council recognizes and appreciates USDA's commitment to genetic resources through the reactivation of NGRAC and is equally committed to the future stewardship and enhancement of the nation's genetic resources.

The objective of NGRAC is to advise the Secretary of Agriculture and the Director of the National Genetic Resources Program (NGRP) on the activities, policies, and operation of the NGRP. The scope of activities of the NGRAC includes advice on acquisition, preservation, access, distribution and exchange of genetic resources of life forms important to American agriculture including plants, forest species, animals, aquatics, insects, and microbes.

The responsibilities of the NGRAC are to formulate recommendations on actions and policies for the collection, maintenance, and utilization of genetic resources; to make recommendations for coordination of genetic resources plans of several domestic and international organizations; and to advise the Secretary of Agriculture and the NGRP Director of new and innovative approaches to genetic resources conservation.

The Secretary also directly charged NGRAC with responding to a specific recommendation of the Advisory Committee on Biotechnology in the 21st Century (AC21), included within its Recommendation V, in its report entitled *Enhancing Coexistence: A Report of the AC21 to the Secretary of Agriculture*.

Upon its reactivation and organization under the NAREEEAB, the Council held its first meeting in March of 2013. That meeting served to orient the Council's members to the tasks assigned to them and begin discussion on potential topics for consideration and advice to the Secretary. The outcomes of this meeting were presented by the NGRAC chair to the NAREEE Advisory Board on September 12, 2013.

At the March meeting, the Council also heard from the Executive Secretary of the AC21 regarding the specific recommendations within the AC21 report which the Council was charged with responding. Following this meeting, the Council held several conference calls to further discuss these issues. In July 2013, the Council Chair appointed a subcommittee and tasked them to provide input to the whole Council on the AC21 committee recommendations. The subcommittee developed an inventory of steps taken by the non-genetically-engineered crop and organic crop markets regarding seed availability and access. The subcommittee also developed a series of questions to be discussed by the whole Council and made a presentation to the Council at its September meeting. This presentation served as the basis of discussion by the whole Council in developing a plan to address the AC21 recommendations. A portion of this report is the product of those discussions.

This document serves as an initial response to the AC21's recommendations, which pertained solely to plant germplasm. The Council recognizes the importance of animal, microbial, and other forms of germplasm as well but could not address those issues at this time. The Council notes and appreciates the involvement of tribal representatives and their comments and plans to take up those issues during future deliberations.

Interim Response to AC21 Recommendations

In its previously mentioned report of November 19, 2012, the AC21 recommended to USDA:

“USDA should task the NGRAC to develop a plan in conjunction with the seed industry for ongoing evaluation of the pool of commercially available non-GE and organic seed varieties and identification of market needs for producers serving GE-sensitive markets. USDA should work with seed suppliers to ensure that a diverse and high quality commercial seed supply exists that meets the needs of all farmers, including those supplying products to GE-sensitive customers. These activities should be conducted in such a way as not to interfere with functioning markets and the activities should be independent of regulatory approvals for GE products.”

The NGRAC requires additional time to develop strategies and meet with stakeholders and seed industry to fully respond to this charge, following the NAREEEAB's reauthorization by a new farm bill. To that end, the NGRAC intends to be represented at gatherings of stakeholders, several of which have already been identified, in order to obtain a holistic and inclusive perspective on these issues from industry, researchers, and user communities. In the interim, the NGRAC developed the following recommendations:

- The AC21's recommendation to involve the seed industry in developing a seed access plan should be expanded to include a broader group of stakeholders and rights-holders (such as tribes) in the agricultural value chain--including agricultural producers, food processors and public plant breeders.

- Specifically, USDA should, in consultation with the tribes, develop recommendations related to tribal issues, resources and participation in the National Genetic Resources Program
- The NGRAC encourages NASS and ERS to gather and analyze data to better assess the needs of all farmers regarding the accessibility of non-genetically engineered (GE) and organic seed.
- The NGRAC strongly recommends increased investment in public cultivar development. The NGRAC believes that this does not require legislative action but could be accomplished through cooperative agreements, administratively by setting up a new program area, and/or by reallocating funds.
- The NGRAC recommends that Congress restore USDA funding for the Organic Research and Extension Initiative to promote breeding of organic cultivars. USDA should seek this restoration in future budget submission.
- The NGRAC encourages establishing public-private partnerships, when feasible, to support cultivar development, release, marketing and distribution.

“USDA should also recommit to maintaining the original genetic identity of accessions in its germplasm banks.”

- The NGRAC supports USDA continuing to develop a robust process for detecting, monitoring, mitigating, and communicating the unintentional presence of transgenes in public germplasm.
- To maintain the original genetic identity of plant germplasm accessions, the frequency of accession regeneration should be reduced by storing plant germplasm under optimal genebank conditions and by developing non-destructive testing techniques for viability.
- Owners of varieties protected by Plant Variety Protection (PVP) certificates should declare, when the seed deposit is made, whether or not the seed deposited intentionally contains transgenes.
 - USDA should encourage developers to deposit seed of parental, non-transgenic germplasm, if available, at the time the transgenic variety is deposited.
- The burden of funding for testing non-transgenic accessions in the national collection for transgenic traits should not be placed disproportionately upon the existing National Plant Germplasm System (NPGS) budget.
 - One possibility for funding such testing could be establishing stewardship fees for germplasm users that are proportionate to the economic benefits realized.

Additional Recommendations and Next Steps

In addition to its response to the AC21 report, the NGRAC provides below its recommendations on the most crucial actions that USDA should take to preserve and enhance the Nation's genetic resources. Due to the time constraints associated with the activities of the NAREEEAB, the Council could not fully explore these topics. Although this should in no way delay USDA's action on its recommendations, the NGRAC looks forward to providing more complete guidance on these issues in a future report.

- **Ratifying the International Treaty on Plant Genetic Resources for Food and Agriculture**
 - The Council believes that the treaty is important because it provides standard terms for access and exchange of global genetic resources which are critical for adapting crops to climate change and developing improved crop varieties.
 - The NGRAC strongly encourages the Secretary of Agriculture to seek ratification of this treaty by the US Senate. The Council believes that the Secretary should work with the Department of State to re-start this process within the Senate.
 - Ratifying the treaty would accord the US full partnership and influence within the global germplasm community.
 - The Council recognizes and supports USDA's efforts to facilitate access to germplasm from China, India and other nations.

- **Importance of Genetic Resources for Adaptation**
 - Genetic resource diversity is a prerequisite to developing the new crop varieties that will enable agriculture to effectively adapt to changing weather, evolving pests and diseases, changing cultivation practices and changes in consumer demand.
 - The NGRAC believes that continued and increased investment in genetic resources and their development into new crop varieties is crucial. Increased support for genetic resources and their development would strengthen the food, health and economic security of the United States and the world.
 - The NGRAC supports the proposals made in the President's Fiscal Year 2013 Budget Proposal for increased support to the NPGS. The NGRAC recommends that the Secretary support inclusion of similar proposals in future USDA budget submissions.

- **Improving the Pipeline of Plant Breeders and Genetic Resource Managers**
 - It is crucial to create future generations of well-trained seed scientists, genetic resource managers and support scientists, and plant breeders.
 - The educational infrastructure of our country must be reinvigorated to provide the intellectual and research capacity necessary to ensure future leadership in global agricultural research and genetic resource management.

- To address the above needs, the NGRAC recommends that the USDA-NIFA develop a RFP focused on supporting formal (graduate training) and informal (short term professional improvement training) educational and research programs focused on various elements of genetic resource management and seed systems.
- **Promotion of Information Exchange**
 - During the past five years, the GRIN-Global System has been designed and developed by USDA, the Global Crop Diversity Trust, and the Consultative Group on International Agricultural Research (CGIAR) to serve as a genebank information management system for any genebank in the world that wishes to adopt it.
 - The NGRAC strongly recommends that USDA continue to develop GRIN-Global, implement it within the NPGS, and in conjunction with the Global Crop Diversity Trust and CGIAR, assist with deploying it in international agricultural research centers and other national genebanks.
- **Monitoring and Assessing Genetic Diversity of Crops in the Field**
 - Genetic diversity in the field is essential as an insurance policy against crop failure caused by unpredictable environmental factors. As such, the NGRAC strongly recommends developing a process to establish a baseline assessment of and ongoing monitoring for potential crop genetic vulnerability caused by too narrow a genetic base.
- **Assessment of Germplasm Resources in a Broader Context**
 - The USDA should consider the genetic resources of endangered species in both the contexts of conserving ex situ in the National Genetic Resources Program as well as their conservation and utilization in situ.
 - The NGRAC will assess Tribal genetic resources in a broad context that includes their "acquisition, preservation, access, distribution and exchange" and includes the full range of life forms (plants, forest species, animals, aquatics, insects, and microbes).