



March 4, 2014

The Honorable Thomas Vilsack
Secretary of Agriculture
U.S. Department of Agriculture
1400 Independence Avenue SW
Washington, DC 20250

Submitted electronically via www.regulations.gov

Docket No. APHIS-2013-0047

Re: Comments on the Request for Public Input on Enhancing Agricultural Coexistence

Dear Secretary Vilsack:

On behalf of the represented member organizations¹ of the National Sustainable Agriculture Coalition (NSAC), I submit the following comments on the U.S. Department of Agriculture's (USDA) request for public input on enhancing agricultural coexistence (Docket No. APHIS-2013-0047).

NSAC is a grassroots alliance that advocates for federal policy reform supporting the long-term social, economic, and environmental sustainability of agriculture, natural resources, and rural communities. NSAC member organizations are leaders in the sustainable agriculture and food systems sector, and have worked with farmers and communities to pioneer practices, systems, and supply chains that support the multiple goals of sustainability. These include certified organic, sustainable, non-genetically engineered (GE), and identity-preserved systems and supply chains that are impacted by a coexistence framework.

¹ Agriculture and Land-Based Training Association - Salinas, CA; Alternative Energy Resources Organization - Helena, MT; California Certified Organic Farmers - Santa Cruz, CA; California FarmLink - Santa Cruz, CA; C.A.S.A. del Llano (Communities Assuring a Sustainable Agriculture) - Hereford, TX; Center for Rural Affairs - Lyons, NE; Clagett Farm/Chesapeake Bay Foundation - Upper Marlboro, MD; Community Alliance with Family Farmers - Davis, CA; Dakota Rural Action - Brookings, SD; Delta Land and Community, Inc. - Almyra, AR; Ecological Farming Association - Soquel, CA; Farmer-Veteran Coalition - Davis, CA; Fay-Penn Economic Development Council - Lemont Furnace, PA; Flats Mentor Farm - Lancaster, MA; Florida Organic Growers - Gainesville, FL; GrassWorks - New Holstein, WI; Hmong National Development, Inc. - St. Paul, MN and Washington, DC; Illinois Stewardship Alliance - Springfield, IL; Institute for Agriculture and Trade Policy - Minneapolis, MN; Iowa Natural Heritage Foundation - Des Moines, IA; Izaak Walton League of America - St. Paul, MN/Gaithersburg, MD; Kansas Rural Center - Whiting, KS; The Kerr Center for Sustainable Agriculture - Poteau, OK; Land Stewardship Project - Minneapolis, MN; Michael Fields Agricultural Institute - East Troy, WI; Michigan Food & Farming Systems (MIFFS) - East Lansing, MI; Michigan Organic Food and Farm Alliance - Lansing, MI; Midwest Organic and Sustainable Education Service - Spring Valley, WI; National Catholic Rural Life Conference - Des Moines, IA; The National Center for Appropriate Technology - Butte, MT; Nebraska Sustainable Agriculture Society - Ceresco, NE; Northeast Organic Dairy Producers Alliance - Deerfield, MA; Northern Plains Sustainable Agriculture Society - LaMoure, ND; Northwest Center for Alternatives to Pesticides - Eugene, OR; Ohio Ecological Food & Farm Association - Columbus, OH; Organic Farming Research Foundation - Santa Cruz, CA; Rural Advancement Foundation International - USA - Pittsboro, NC; Union of Concerned Scientists Food and Environment Program - Cambridge, MA; Virginia Association for Biological Farming - Lexington, VA; Wild Farm Alliance - Watsonville, CA.

Many of the farmers that NSAC works with and represents choose to grow only non-GE crop varieties because the markets they serve demand GE-free products; because they have concerns about potential adverse health, environmental, or agronomic impacts of GE crop technologies; or because they are USDA certified organic. These producers sustain substantial economic losses when their products contain unintended GE material at levels exceeding market or organic certifier specifications. In addition, exposure of organic or non-GE fields to GE pollen, pesticides, and herbicides from neighboring farms utilizing GE crop technology packages can lead to adverse ecological and agronomic consequences for the non-GE producer, as well as tensions among farmers. Thus, the challenges of coexistence among contrasting farming systems directly impact the economic, environmental, and social sustainability of our nation's agriculture and rural communities, and are therefore of great concern for NSAC.

We appreciate USDA's attention to agricultural coexistence issues and believe that there is a significant need for a robust framework that ensures that the diverse sectors of American agriculture can thrive. This framework must include:

- Sound, science-based information that empowers farmers to make good decisions regarding their production systems and to implement stewardship practices that enhance coexistence;
- Effective measures to prevent contamination of organic and other non-GE farm products and crop seed with unintended GE content;
- A fair and workable system of compensation in the event that GE contamination leads to economic losses for organic and non-GE producers; and
- Mechanisms for preventing and responding to problems associated with drift of agricultural chemicals associated with GE crops onto neighboring farms, including concerns for not damaging crops and natural resources such as pollinator habitat.

Our comments focus first on the critical aspects of a viable coexistence framework, including:

- The need to use existing authority to update and revise the existing regulatory framework on GE crop technologies;
- The need to establish a strong contamination prevention framework;
- The need for a fair compensation mechanism when contamination occurs; and
- The need for addressing pressing research needs related to coexistence and the use of GE products.

We then respond to the questions in the Federal Register notice concerning voluntary communication and collaboration strategies.

The following people from NSAC member organizations contributed to the drafting of these comments: Mark Schonbeck with Virginia Association for Biological Farming, Doug Gurian-Sherman with the Union of Concerned Scientists, Harriet Behar with the Midwest Organic and Sustainable Education Service, Alicia Harvie with FarmAid, and Brian Snyder with the Pennsylvania Association for Sustainable Agriculture.

We look forward to working with you to establish a workable and robust coexistence framework that allows for the diverse sectors of American agriculture to thrive.

Sincerely,

A handwritten signature in cursive script that reads "Ariane Lotti".

Ariane Lotti
Assistant Policy Director, National Sustainable Agriculture Coalition

COMMENTS ON AGRICULTURAL COEXISTENCE

I. Critical Aspects of a Viable Agricultural Coexistence Framework

NSAC appreciates USDA's efforts to facilitate a much-needed discussion about agricultural coexistence. The advent of genetically engineered (GE) crop varieties and the associated technology packages has brought critical new challenges regarding the compatibility of different agricultural production systems within rural America.

USDA took a step forward by reconvening the Advisory Committee on Biotechnology and 21st Century Agriculture (AC21). This committee identified a number of core issues, many of which remain unresolved. For example, AC21 members acknowledged that contamination of non-GE crops with unintended GE content can and does take place, but members were "not in agreement about the extent to which a systemic problem exists and whether there is enough data to warrant a compensation mechanism to address it."² The report further acknowledged that there are insufficient data to accurately assess the extent of the contamination issue.

The AC21 also identified compensation for non-GE producers suffering economic losses owing to unintended GE presence in their product as a major issue, but reached no consensus on a fair compensation mechanism. Viewpoints within AC21 varied so widely that there was little support for the recommendation of the report "that compensation mechanisms ... be modeled on existing crop insurance."³ Finally, AC21 aptly outlined needs for more research into issues of crop seed purity, preservation of genetic diversity and regionally adapted cultivars.

Given the scope of issues discussed by AC21 and the challenges around coexistence, we are disappointed by the limited scope of the questions USDA asks in the Federal Register notice requesting public input on enhancing agricultural coexistence (Docket No. APHIS-2013-0047). Before determining "how we can best foster communication and collaboration among those involved in diverse agricultural systems on the topic of coexistence as well as how USDA can best communicate and collaborate with those entities,"⁴ a number of issues, including those outlined above, need to be addressed. Without addressing these issues, the voluntary communication and collaboration efforts being explored by USDA will do little to establish and facilitate a system of true coexistence in which certain agricultural practices do not damage or preclude the use of other agricultural practices.

NSAC believes that agricultural coexistence can be successful only when *all* producers feel secure that their choices of production system and markets will not be compromised or foreclosed due to impacts of contrasting production systems employed by other producers.

We make recommendations below on issues that must be addressed before USDA moves forward with voluntary communication and collaboration strategies for addressing issues of agricultural coexistence. These include:

² *Enhancing Coexistence: A Report of the AC21 to the Secretary of Agriculture*. November 2012. Page 9.

³ *Ibid*, page 15.

⁴ 78 Fed. Reg. 65961

- The need to use existing authority to update and revise the existing regulatory framework on GE crop technologies;
 - The need to establish a strong contamination prevention framework;
 - The need for a fair compensation mechanism when contamination occurs; and
 - The need for addressing pressing research needs related to coexistence and the use of GE products.
- A. USDA must use broad authority granted through the Plant Protection Act of 2000 to revisit and substantially strengthen the regulatory framework for genetically modified organisms.**

The Secretary of Agriculture possesses expansive authority under the Plant Protection Act (PPA) of 2000 to broadly assess and regulate economic, environmental, public health, agricultural, and other impacts of genetically modified organisms (GMOs). PPA provides broad authority, under its noxious weed provisions, for USDA to regulate possible direct or indirect environmental and economic harm caused by GE products. In particular, the noxious weed provisions of PPA are intended to supplant provisions in the Noxious Weed Act (NWA). The broader language defining noxious weeds in the PPA compared to NWA reflects the intent of Congress that USDA should address the broader issues encompassed by the updated language.

Congress expressly gave USDA this expanded authority, yet USDA has failed to implement this broader authority. USDA has twice released draft regulations but those proposed regulations also narrowly defined plant pests, including noxious weeds, and failed to meet Congressional intent. USDA has not finalized the regulations and continues to rely on outdated regulations in C.F.R. Part 340.

Given the challenges identified in establishing a viable coexistence framework for agriculture and the need to update the regulatory framework governing the release of GE crops and products, USDA should abandon earlier versions of draft regulations for PPA that defined the noxious weed provisions of PPA narrowly and instead issue a new version of these regulations that reflect the full effects of GE crops, including their potential for damage.

In its Federal Register notice on coexistence, USDA focuses on voluntary adoption of “stewardship practices” by farmers to prevent or limit unwanted gene flow, and good communication between GE and non-GE producers as a means to coexistence. Farmers are of course already relying on voluntary measures, yet contamination persists. As long as provisions to prevent contamination are borne only by non-GE farmers, potentially effective measures that can be undertaken by those selling GE seed will not be implemented. A strategy based solely on voluntary measures will be insufficient for addressing coexistence issues. A regulatory response is also essential.

Until USDA promulgates new regulations, efforts to achieve viable and workable coexistence strategies will fall short of achieving the needed changes and structures to prevent GE contamination, address the economic harm caused by GE crops, provide for adequate compensation, and create a robust regulatory framework for new, more complex, stacked GE products.

Recommendation: USDA should abandon earlier versions of draft regulations for PPA that defined the noxious weed provisions of PPA narrowly and instead issue a new version of these regulations that reflects the full effects of GE crops, including their potential for damage, in order to establish a viable agricultural coexistence framework.

B. USDA must focus on contamination prevention.

Before moving ahead with voluntary communication and collaboration strategies, USDA should focus first and foremost on developing *effective means to prevent the unintended presence of GE material in organic and other non-GE crop seeds and crop harvests*. The crux of the coexistence issue is the right of all farmers to choose what they produce and how, and what markets to serve, free from human-caused interference related to contrasting production systems. For the organic and non-GE producer, this means freedom from the threat of GE contamination, both in crop seed and in pollen brought into their field by wind or insects. Although all farmers should implement good stewardship practices to limit gene flow from GE into non-GE fields, the non-GE farmer who does not utilize or benefit from this technology must not be expected to bear the brunt of the responsibility for preventing GE contamination.

Currently, the burden to prevent contamination falls primarily on the non-GE farmer. Numerous reports indicate that contamination has substantial impact on the livelihoods of those growing non-GE crops. Non-GE markets reject contaminated crops, and preventative measures, such as buffers or altered planting schedules that prevent overlap in crop flowering periods, result in reduced income. Buffers represent farmland that is underutilized or can lose premiums, while adjusted planting schedules prevent farmers from taking advantage of optimum planting dates. So far, the burden of prevention of contamination and loss of income is borne by those imposed upon by the production of GE crops. This represents an asymmetric and unfair burden on non-GE farmers.

Recommendation: USDA should initiate a dialogue among coexistence stakeholders to develop a strategy focused around preventing the contamination of non-GE crop seeds and harvests by GE pollen and drift.

1. Better data are needed on the scope of contamination.

As part of a strategy to prevent GE contamination, it is critical for USDA to understand the scope of contamination. The incidence of unintended GE presence in organic, identity preserved, and other non-GE crop seed and crop harvests, and the incidence and frequency of economic losses to non-GE producers, including crop seed growers, is simply not known. USDA has not undertaken systemic efforts to collect this vital information. Furthermore, non-GE farmers may be reluctant to speak out about GE contamination of the crops for fear of loss of markets, tension with neighboring GE farmers, or retaliation by GE technology patent holders.

Recommendation: A top research priority for USDA should be to undertake a systematic survey of the incidence of unintended GE content in crop harvests on non-GE farms, and in crop seeds produced or planted by non-GE producers. In addition, economic losses (rejection or price dockage by non-GE markets) need to be documented. Because of the sensitive nature of this information, farmers must be offered the option of providing this information to USDA anonymously.

2. Research is needed to inform contamination prevention strategies.

USDA must compile sound, research-based information on effective contamination prevention strategies for *each crop for which commercially available GE varieties are being produced*, including isolation distances, buffers (hedgerows, windbreaks, etc), modifications of planting date (if these are economically feasible for producers), and other measures. In some cases, this information is not available, and must become a priority topic for USDA research.

Recommendation: USDA should prioritize research needs for establishing effective contamination prevention strategies for each crop for which a commercially available GE variety is being produced.

3. GE contamination includes both genetic contamination and contamination from chemical drift used in GE crop production.

In addressing contamination issues, we urge the USDA to consider the entire technology package of which a given GE crop is part – which can include increase risks of pesticide drift or development of pest resistances. For example, Roundup Ready crops entail a greatly increased use of glyphosate, which could potentially increase risk of herbicide drift as well as the documented evolution of weeds resistant to glyphosate. While the spread of glyphosate-resistant weeds onto organic farms may have little impact (since USDA certified organic does not allow this herbicide), other non-GE identity preserved producers who rely on judicious use of glyphosate as part of their management systems may be forced to switch to older, more toxic herbicides.

Recent requests for deregulation of GE crops with resistance to 2,4-D or dicamba herbicides raise new concerns, because the new herbicide resistant crops will likely lead to several-fold increase in the use of these volatile materials, which are notorious for drift problems resulting in damage to broadleaf crops. Organic producers are subject to potential decertification of fields subject to chemical drift, and *all* specialty crop producers are vulnerable to severe crop damage or complete loss if their crops are exposed to these herbicides.

Widespread planting of corn and other crops engineered to synthesize the microbial pesticide *Bt* throughout their life cycle has led some lepidopterous (caterpillar) pests to develop resistance to *Bt*. Migration of these pests into organic and non-GE crop fields can reduce or abolish the efficacy of *Bt* spray applications, one of the safest pest control materials, and one that is allowed for USDA organic certification.

Recommendation: As part of a contamination prevention framework, USDA should establish mechanisms for preventing and responding to problems associated with drift of agricultural chemicals associated with GE crops onto neighboring farms, including concerns for maintaining the integrity of specialty crops and natural resources such as pollinator habitat.

C. If contamination occurs, USDA must provide adequate compensation.

One of the main charges to AC21 was to discuss types of compensation mechanisms for economic losses due to GE contamination. Taken within the broader discussion about agricultural coexistence and GE contamination prevention, this is an important issue because contamination does occur and non-GE farmers suffer a loss. We provide recommendations below for establishing a fair compensation mechanism.

1. Crop insurance is not a good model for compensation.

NSAC disagrees with the AC21's recommendation that if the Secretary determines based on loss data that there is a need for a compensation mechanism, that that mechanism should be based on a crop insurance model. We agree with the statement that "any compensation mechanism that may be put in place that is perceived by one segment of agriculture as placing unfair burdens on that sector will only divide agriculture."⁵ Yet, the committee's recommendation of a crop insurance model in which organic and non-GE producers take out additional crop insurance to cover GE contamination related losses, places unfair burdens on one segment of agriculture. Placing the burden on non-GE producers who do not stand to benefit from the technology, or on taxpayers (through insurance subsidies), would be the least fair options of all.

While a crop insurance model could "build on existing structures administered by USDA's Risk Management Agency and its Farm Service Agency,"⁶ it is a fundamentally flawed approach. Unlike events that farmers usually insure against, GE contamination is a man-made occurrence that is not inevitable. Furthermore, GE contamination is often not an isolated incident that is linked to one instance or pathway of contamination.

Recommendation: USDA should not adopt a crop insurance model to address compensation issues arising from GE contamination of non-GE seeds, crops, and harvests.

2. Patent holders should pay for losses due to contamination through a fund.

Fairness and logic dictate that those who enjoy the economic gains from the use of GE crop technologies should also bear the onus of compensating non-GE producers for losses related to unintended trespass of GE material into their fields or crop seeds. While GE producers do profit from the sale of these crops, it is the GE technology patent holders who make the majority of profits related to GE technology. Thus, they should bear the primary responsibility, both for preventing GE contamination of non-GE crops, and for compensating non-GE farmers adversely affected by such compensation.

We strongly recommend that USDA develop and implement a general compensation fund, funded primarily by GE crop technology patent holders. Patent holders retain effective ownership of GE seed, and therefore should accept the responsibility of adequate stewardship of the technology and compensation of those harmed by contamination. The exact form and size of the general compensation fund will need to be determined based on the outcome of USDA's research into the extent of GE contamination and associated economic impacts to organic, IP, and other non-GE producers.

Recommendation: USDA should adopt a compensation mechanism based on a fund model and should rely on GE patent holders to provide the majority of funds to compensate for losses of GE contamination.

D. USDA should address pressing research needs related to agricultural coexistence.

⁵ *Enhancing Coexistence: A Report of the AC21 to the Secretary of Agriculture*. November 2012. Page 9.

⁶ *Ibid*, page 10.

1. USDA should move forward on implementing the Research and Seed Quality recommendations from AC21.

NSAC strongly supports the AC21 recommendations regarding Research and Seed Quality.⁷ As noted earlier in our comments, quantification of incidence of unintended GE content in non-GE crops and crop seeds, and of economic losses resulting therefrom, should be high priorities for research conducted or funded by USDA. We also strongly concur that crop-by-crop assessment of existing GE-contamination mitigation techniques for both crop seed and crop harvest and development of improved techniques are critical to the future of agricultural coexistence.

We also agree strongly that “continued seed industry attention to the continued maintenance of an ample supply of regionally adapted, high quality, GE, IP non-GE, conventional, and organic seeds for people wishing to produce such crops will be critical in order for the associated agricultural sectors to flourish,”⁸ and we support the AC21 recommendation that USDA task the National Genetics Resources Advisory Council to work with the seed industry to develop an ongoing evaluation plan to ensure that this goal is accomplished. Development of an “organic seed finder” and similar services for other IP non-GE producers would be useful tools for farmers.

Recommendation: USDA should swiftly move to implement the Research and Seed Quality recommendations from AC21.

2. USDA should address additional research needs related to the use of GE crops.

NSAC urges USDA to address other urgent GE-related research needs related to potential agronomic, environmental, human-health, and livestock-health impacts of GE crop varieties and technology packages. Although the AC21 Final Report asserts that “GE products in the marketplace ... have been evaluated by scientific experts and regulators, and have been determined to be as safe for humans and the environment as conventional crops,”⁹ not all AC21 members agreed with this assertion and there is abundant evidence that it is not entirely true. In his additional comments, for example, AC21 member Charles Benbrook states that “neither the Food and Drug Administration, nor any other U.S. government agency, conducts an independent evaluation of the nutritional quality or safety of GE foods ... the FDA simply accepts the assertions by the technology provider.”¹⁰

There are a number of research issues that need to be addressed around issues of GE product safety:

- **Independent scientists must have access to patented GE crop germplasm:** GE patent holders have limited the access of independent scientists to patented GE crop germplasm to conduct more in-depth studies to fully investigate potential health and environmental concerns raised in preliminary studies – basically shutting down research into these vital questions.

⁷ Ibid, pages 21-25.

⁸ Ibid, page 23.

⁹ Ibid, page 6.

¹⁰ Ibid, page 29.

- **Regulations used to evaluate current GE crops are inadequate, according to many scientists and others:** USDA relies on the very limited plant pest provisions of the Plant Protection Act. The limitations can be summarized as a lack of sufficient rigor, as noted by the National Research Council in its 2002 report evaluating USDA regulation of GE crops. Many of those limitations have not been remedied. For example, the epidemic of resistant weeds that have been exacerbated by the overuse of glyphosate herbicides likely cannot be adequately regulated under the plant pest provisions, despite causing great harm to farmers and the environment.
- **Development of future GE crops:** There is no assurance that future crops will not cause harm, especially if the current severe limitations of USDA GE regulations are not corrected.

Additionally, several incidents of contamination have also occurred prior to deregulation and commercialization that have resulted in substantial cost to farmers and disruption of export markets. The focus on post-commercialization GE crops does not address this problem. USDA has not tested for the extent of possible contamination at this stage of development of GE crops, and should do so to better determine vulnerabilities. USDA also needs to strengthen field trial confinement requirements to limit such incidents in the future, and provide for a means of compensation to farmers harmed by these incidents.

Recommendations: USDA should address additional research needs related to the use of GE technologies. Specifically, in order to assess more independently the safety and ecological, agronomic, and health impacts of GE technologies, USDA should require patent holders to release their GE crop germplasm and isogenic non-GE varieties needed as proper controls for evaluation and review by independent scientists; and revise existing regulations to require sufficient scientific rigor in evaluating current and future GE crops. Additionally, USDA should strengthen GE field trial confinement requirements to prevent GE contamination events during the pre-commercialization period.

II. Responses to the Questions Posed in the Federal Register Notice

We offer the following comments on specific questions in the Federal Register notice for Docket No. APHIS-2013-0047, within the broader context provided above. While good farmer-to-farmer communication and cooperation are laudable goals, we emphasize that such voluntary communication strategies are not, by themselves, the solution to the coexistence challenges posed by GE crop technologies.

Question 1. As we seek improved communication and collaboration among agriculture stakeholders, we are interested in identifying information needs and exploring successful communication methods.

- *When you or members of your organization seek information related to coexistence, what type of information are you seeking and where do you go to get it? Why?*

Response:

Farmers need accurate information regarding several aspects of GE crop varieties in order to make sound decisions regarding whether and how to use GE technology on their farms, and how to avoid unintended GE material in non-GE crops. These include:

- Agronomic risks as well as potential benefits associated with GE varieties. Known risks include evolution of herbicide resistant weeds where herbicide tolerant GE crops are grown with increased use of the corresponding herbicides; and evolution of pest resistance from planting crops engineered to produce *Bt*. Potential risks also include impacts of GE crops on soil life, and changes in nutritional quality of feed grains and forages that can lead to potential livestock health problems.
- Potential environmental and human health risks of GE crop varieties have not been adequately researched. Preliminary studies have revealed some potential concerns that need to be evaluated further through additional research by impartial scientists. However, GE crop patent holders have denied independent scientists permission to use the GE varieties for research, thereby preventing the needed studies from taking place.
- Accurate information is needed on outcrossing distances for different GE crops, and appropriate minimum buffer distances to meet the criteria for non-GE markets, and the higher criteria for non-GE crop seed production, or for GE crops with “functional” traits like amylase corn. Traits for industrial or pharmaceutical genetically engineered crops not intended for the food supply raise additional issues that must be addressed.
- Sound advice on other measures that GE farmers should take to minimize gene flow beyond farm boundaries, and that non-GE farmers should take to avoid or minimize risks to their crops.
- Maps or other means to identify location of both GE and non-GE production of different crops, so that farmers are informed about potential sources of GE pollen, or locations of sensitive non-GE crop production.
- Accurate information regarding purity (freedom from unintended GE content) of non-GE crop seed from different sources.
- Much more complete and accurate information on the incidence of economic losses to non-GE farmers from unintended presence of GE material in crop seed or crop harvests. More information on the dollar losses incurred by farmers affected.
- Research into drift from pesticides used as part of GE crop production and the potential effects of drift on specialty crops and on natural resources, such as pollinator habitat.

A lot of this information is not yet available, and should be top priority for USDA-funded research, as discussed above.

As the number of GE traits and the number of crop species for which GE crop varieties are released for commercial production increase, the need for additional research to generate vital information will multiply. Whether this research is conducted intramurally by USDA, or through extramural grant programs such as the Biotechnology Risk Assessment Research Grants (BRAG) Program or the Agriculture and Food Research Initiative, this research need will entail a considerable investment of tax dollars. The BRAG program has only received minimal funding to examine important research questions about biotechnology impacts and hazards and as USDA seeks to establish a more viable coexistence framework, it should provide more funding to examine GE crops through programs like BRAG.

Taking steps now to generate and integrate adequate research data for existing GE crops will help USDA and the farming community get a more accurate view of the fundamental issues raised by AC21, and may thereby facilitate more informed decisions regarding future GE crops and traits.

- *What information regarding coexistence, in what format, is currently available (printed or electronic brochures, factsheets, blog posts, websites, discussion forums, etc.)? Is this information useful? Why or why not? What additional information, in what format, would be useful to you or members of your organization?*

Response:

There is not sufficient information available to farmers on the issue of coexistence to be useful and practical. While there are certain informational resources available, the risk is that the resources will be focused exclusively on providing information to organic and non-GE farmers about how to avoid GE contamination, which would continue placing all of the burden of preventing contamination on non-GE farmers.

Much of existing information available to farmers related to GE crops is released by GE patent holders and vendors of GE crop seeds. This information is inherently biased, as it is designed in part to market the technology, and will thus emphasize or even embellish the benefits of GE crop technology, and downplay its potential risks and drawbacks. Farmers need *unbiased, third-party* information in order to make sound decisions regarding production system and stewardship measures to promote coexistence.

At the farm level, additional information is needed so that farmers using GE crops know how to avoid contaminating nearby non-GE crops. This information could include practices and strategies on-farm to avoid pollen and pesticide drift and contamination of nearby crops.

- *Please indicate your preferences with respect to receiving information or communications from USDA. Would you be interested in receiving information or communications from non-USDA sources? How might you or your organization, as agricultural stakeholders, want to be involved in disseminating information?*

Response:

As noted in response to the last question, farmers need accurate, unbiased information from impartial sources. Independent researchers or educators, or non-governmental organizations working with farmers, especially those working with organic, sustainable, and IP non-GE producers could provide this information. USDA and Cooperative Extension can play a role in compiling and disseminating this information, provided that they adhere closely to principles of impartiality and sound science, and do not simply accept GE seed industry materials as “information.”

- *Where should USDA focus its efforts to best foster communication and collaboration amongst stakeholders? What would best facilitate farmer-to-farmer communication and collaboration?*

Response:

As discussed in depth above, USDA must first focus on efforts to prevent or minimize GE contamination of non-GE crops, and on conducting the large volume of research needed in order to provide an adequate science-based foundation for effective contamination prevention and thus agricultural coexistence. Because on-farm stewardship and farmer-to-farmer communication cannot alone be expected to prevent GE gene flow – especially in strongly outcrossing crops such as corn, canola, alfalfa, and sugarbeet – USDA must assess the needs for regulatory measures to protect non-GE crop seed and crop harvests from unintended GE presence. USDA must then promulgate and enforce appropriate regulations on each GE crop to prevent contamination of non-GE crop seeds and crop harvests.

Without this foundation, efforts to achieve coexistence through farmer-to-farmer communication alone will fail to protect the non-GE producer from unwanted GE presence in their crops, and will thus not yield true coexistence. The strong focus on farmer-to-farmer communication and collaboration places on both non-GE and GE farmers the burden of solving problems that are inherent to the GE crop technologies themselves, and thus not readily solvable by farmers themselves.

The question at hand is one of collaboration and communication amongst *all stakeholders* – including GE patent holders, GE seed vendors and distributors, as well as producers, crop seed growers, and others along the production chain. GE seed patent holders and vendors must be required to provide GE farmers with accurate information regarding their crops, including outcrossing distances and other parameters related to risk of GE trespass onto non-GE farmers’ fields, and stewardship measures that the farmer should take to minimize risk. Contracts between GE seed suppliers and farmers must include a requirement to implement these stewardship measures.

- *Please share any examples of and feedback regarding successful communication models, including those that have worked well for other issues.*

Response:

Most states have pesticide laws that are enforced when a pesticide is known to have moved from the targeted area over the property line to another field. Depending on the state, the fines levied per occurrence may be sufficient to encourage the pesticide applicator to be more careful the next time, or they may not be strong enough to prevent repeat events. This would be an example of a feedback model that has shown some effectiveness in preventing contamination, but it could be improved by having federal enforcement for GE contamination when a patented seed causes damage.

It is important to note that management of GE contamination may require a somewhat different model from pesticide drift contamination, since GE traits can propagate and spread from generation to generation, while pesticide residues persist and decline in a manner determined by a particular chemical’s half life under existing environmental conditions.

Question 2. As part of USDA’s outreach and education efforts, we are interested in identifying education needs and exploring the creation of “outreach toolkits” that will encourage communication, planning, and crop-specific practices to facilitate successful coexistence.

- *What tools and educational services are already available? Are these tools and services useful? What tools and educational services would be useful to you?*

Response:

There is a need for educational services and tools for GE farmers to understand contamination prevention protocols. Classes for farmers that use GE seeds could complement written contamination prevention materials included in outreach materials or contracts. Tools for GE farmers to help them reduce gene flow can also include appropriate provisions in contracts with GE patent holders.

Seed vendors who carry GE crop varieties must be educated as to the nature of each GE crop / variety, and what are the risks it carries, and what the farmer who buys the seed must know. While a lot of this should be contained in the technology agreement that the farmer signs with the patent holder, it would be helpful for vendors to know just what they are handling, including its risks as well as its potential benefits. Outreach toolkits should be designed for vendors for this purpose.

- *How might USDA assist farmers to better understand the contracts they enter into (e.g., contracts to provide organic products and IP products for specialty markets) and their commitments with respect to coexistence?*

Response:

This question needs to be broadened to include contracts that both GE and non-GE farmers enter into with seed providers (GE) and markets/buyers (both). GE crop technology agreements should be written to ensure that farmers understand their obligations to neighboring farmers (to prevent unwanted gene flow) as well as to their GE seed providers. Organic and IP non-GE farmers need to understand their marketing contracts in terms of tolerances for unintended GE content.

- *What geographic information, in what format, is available regarding the location of crops that are planted and grown using different types of agricultural systems (e.g., pinning maps)? Is the information updated regularly? What are stakeholders doing to make this type of geographic information more widely available? What can USDA do to assist in these efforts?*

Response:

USDA can assist in the effort of providing geographic information by creating a database or registry to track where GE crops are planted so that non-GE farmers can easily access information about GE crops in their area. A database or registry, regularly maintained, could help track sources of GE contamination.

Such a tool could also address the challenge that non-GE farmers face currently in trying to figure out who is farming the land adjoining theirs and what is being planted. With the majority of land being operated by nonresident landowners, larger operations farming the land using a variety of custom operators to perform various activities, and land leases only one year rather than multiple years, it has become difficult to find the entity that is buying the seed and planting it. A farmer cannot assume the landowner is able to provide contact information for the person who both makes the decisions on crop planting as well as the person actually doing it. It is a huge burden to place on

the non-GE farmer to ask them to find and discuss planting protocols and other issues with the manager of the neighboring land, especially when management of farming operations has become very complex.

- *Would a decision support system, i.e., a computer-based information system that could be used to support data-based, planting-related decisions, with topics such as when and where to plant, suitable isolation distances, and gene flow, be useful? Why or why not? If such a decision support system would be useful, what data would be needed for the system to be effective?*

Response:

Trying to identify a decision support system for farmers at this point is very premature. There simply is not a sufficient database of impartial, science-based information to create valid algorithms for each crop and each GE trait, without which no credible decision support system can be generated. Information for crop species with existing GE varieties in production is scant and often biased; information for additional crop species with GE varieties in development does not yet exist.

Question 3. Farmers and others in the food and feed production chain have an important role in collaborating to make coexistence work, particularly with reference to stewardship, contracting, and attention to gene flow. As we seek to improve collaboration among those involved in diverse agricultural systems, we are interested in hearing what practices and activities that support collaboration are available or in use and how USDA can help make collaboration and coexistence work for everyone involved.

Because much of the problem of unintended GE presence in non-GE crops relates to the nature of the technology itself, and not to farmer practices or stewardship, the GE technology patent holders must play the primary role in making coexistence possible, with strong backing from USDA in its regulatory capacity with regard to GE crops. For example, a strongly outcrossed, functional GE crop variety like amylase corn for biofuel may pose such a severe threat to the marketability of flour and starch from corn that USDA may need to impose strict regulations on where GE amylase corn can be grown – or even possibly ban it altogether. Similarly, non-GE crop seed production will need a much higher level of regulatory protection from GE contamination.

Efforts to place the burden on farmers' shoulders will not help improve relationships and may end up pitting farmer against farmer, thus severely undermining the social sustainability of rural communities across America.

- *What are factors that might prevent or promote the broad adoption of local, voluntary solutions aimed at facilitating coexistence?*

Response:

Factors that prevent the broad adoption of local, voluntary solutions include many of the issues discussed above:

- Lack of adequate information;
- Lack of a robust regulatory framework to prevent contamination;
- Lack of adequate and fair compensation mechanisms when contamination does occur; and

- Inherent nature of strongly outcrossed species.

Voluntary solutions are simply not sufficient for addressing the challenges surrounding GE contamination.

- *Please provide examples of effective coexistence practices (e.g., between neighboring farmers or among regional networks of farms) and on-farm and off-farm techniques for mitigating the potential economic risks from occurrences that affect successful coexistence. How might they be made to be more effective?*

Response:

Effective coexistence practices must be based on proven contamination prevention strategies and the burden of ensuring successful coexistence must not be solely on the non-GE farmer.

Successful coexistence occurs mainly when only primarily self-pollinated GE crops are grown (e.g. soybean, for which a 30-foot buffer or a good hedgerow may be adequate), or when neighboring GE and non-GE producers are growing different crops (e.g., a GE corn field will not affect a nearby organic orchard so long as the corn farmer takes care to avoid pesticide drift, or an effective hedgerow exists between field and orchard). However, if a new enterprise introduces a strongly cross-pollinated GE crop into a region where organic or non-GE production of that crop species is already underway, coexistence is likely to fail. Similarly, a newly establishing organic or non-GE farming enterprise may not be able to grow certain cross-pollinated crops if existing farms are already producing GE varieties of those crops and are unwilling to examine contamination prevention strategies.

- *What types of coexistence practices could be supported in potential joint coexistence plans, i.e., voluntary written plans specifying farming practices (such as farmer-to-farmer communication, cropping plans, temporal and physical isolation, and harvesting techniques) that can be used to support coexistence and identify preserved production? What might an effective, supportable, joint coexistence plan look like? How might USDA encourage adoption of joint coexistence plans?*

Response:

For any GE and non-GE production of a crop occurring within the outcrossing distance, farmer-to-farmer communication leading to adjustments in crop plans, planting dates, and location of plantings to effect adequate isolation could potentially lead to coexistence, especially for the more self-pollinated crops. However, these efforts at cooperation will entail sacrifices on the part of one or both producers to address a problem that is inherent in the technology, and only secondarily related to farmer practices per se. Although instances of successful “win-win” negotiations may exist, it would be unrealistic to expect either the GE or the non-GE farmer to make sacrifices in cropping flexibility and potential earnings in order to prevent GE contamination of a non-GE crop.

Question 4. We also welcome any recommendations regarding collaborative meeting formats that would best ensure coexistence issues will be frankly and fully explored at the public forum that USDA intends to hold following the close of the public comment period.

We support the need for ongoing dialogue about coexistence issues that will be frankly and fully explored at a public forum hosted at USDA. Any such meeting should include a discussion of contamination prevention strategies, fair compensation mechanisms, and an acknowledgement of contamination and loss that non-GE farmers experience.

The dialogue should include a broad, balanced group of stakeholders, including:

- Truly independent, unbiased scientists who can speak to the outcrossing distances and other relevant parameters for each species of crops for which GE varieties are commercially available, and scientists who can speak to the availability and purity of non-GE seed;
- Non-GE farmers and businesses;
- Farmer-based organizations that work with non-GE farmers; and
- Representatives from the GE and non-GE seed industries.