A HOUSE DIVIDED: EXPLORING IMPLICATIONS OF DECENTRALIZED REGULATION OF GENETICALLY MODIFIED CROPS IN THE EUROPEAN UNION

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TABLE OF CONTENTS

I. INTRODUCTION ............................................................................... 528
II. CHALLENGES OF CROP COEXISTENCE ............................................ 531
III. EU FOOD AND AGRICULTURE REGULATION .................................. 538
   A. Food Law in the EU ................................................................. 538
   B. Regulation of Genetically Modified Organisms ....................... 541
IV. THE ESCALATING CONFLICT ........................................................... 545
V. CHALLENGES AND SOLUTIONS ....................................................... 551
VI. CONCLUSION ................................................................................... 554

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I. INTRODUCTION

Despite their increasingly prominent role in American agriculture, genetically modified (GM) crops have received relatively little public attention in the United States. In sharp contrast, use of biotechnology to genetically modify food ingredients has been the subject of mass debate and widespread resistance in the European Union (EU).\(^1\)

In response to public opposition based on uncertainty about potential health and environmental effects, the EU initially banned the growth and importation of genetically modified organisms (GMOs) entirely.\(^2\) The United States, Canada, and Argentina attacked the de facto ban on GM crops, successfully challenging the moratorium at the World Trade Organization (WTO).\(^3\) The WTO ruled that the moratorium violated trade agreements\(^4\) and instructed the EU to implement procedures to promote the use and growth of GM crops.\(^5\) In recent years, a number of different regulatory schemes have been implemented in an attempt to reconcile the concerns of the population and food producers with those of the international trade community.\(^6\)

This Note argues that EU agricultural regulations should protect the interests of European farmers and consumers by preserving the option of a GM-free food market while allowing the segregated growth of GM crops for exportation and research. Most importantly, an ideal system will also reserve regulatory power for a centralized EU authority; this centralization is critical to ensuring uniformity and accountability for food safety throughout member

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\(^1\) See Press Release, Bureau Européen des Unions de Consommateurs [The European Consumers’ Organisation], Force-Feeding Never Works (Feb. 8, 2006), available at http://www.beuc.org (follow “Press Room” hyperlink; then locate by press release date) (describing the EU reaction to a WTO panel decision which disfavors the EU position against GM foods).

\(^2\) The moratorium was officially notified by five EU member states in 1999. Denmark, Greece, France, Italy, and Luxembourg informed the European Commission that they would take steps to have any new authorizations for growing and placing GMOs on the market suspended. Minutes, 2194th Council Meeting (Environment) (June 24–25, 1999).


\(^4\) Id.


\(^6\) See infra Part III.B.
states. Decentralization of authority could lead to dangerous inconsistencies in crop composition, regulation, and control, thereby undermining the ability of EU agencies to ensure that quality standards are met.

The most important practical consideration in the GM food controversy is crop coexistence because cross-contamination is nearly inevitable when GM crops are grown near conventional or organic fields. Because of this agricultural reality, all European farmers and food suppliers—particularly those opposed to the presence of GM material in their products—have a vested interest in creating effective GM regulation.

Political pressure from vocal EU member states led to a recent, groundbreaking development: in July 2010, the European Commission recommended new GM guidelines (Commission GM Guidelines). These new guidelines “mark a turning point in the European policy on gene technology.” However, to date the European Parliament and Council have not yet sanctioned the changes in EU law, which is required for the guidelines to take effect. If the Commission GM Guidelines are sanctioned, member states will be allowed to enforce their own regulations for GM crop coexistence and will be able to set up GM-free zones. Today, countries are only allowed to prohibit the cultivation of certain crops for health and environmental safety reasons.

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7 See Stephen A. Ruckman, Regulations for Nutraceuticals and Functional Foods in Europe and the United Kingdom, in NUTRACEUTICAL AND FUNCTIONAL FOOD REGULATIONS IN THE UNITED STATES AND AROUND THE WORLD 221, 224 (Debasis Bagchi ed., 2008) (“At the core of the EU is the concept of a single internal market. In theory, at least, all products meeting EU requirements should be able to move freely throughout the union.”).


11 Commission GM Guidelines, supra note 9, Annex §§ 1.3–4, 2.4.

12 Directive 2001/18, the current regulation governing GMO release into the environment,
This Note seeks to assess how proposed GM food regulations in Europe can be more effectively harmonized with the unique challenges of European farming practices and consumer culture, and does not take a position on the impact of integration of GM crops with non-GM crops on the global food supply or on the health of humanity as a whole. This Note posits that the newly proposed system of member state-specific coexistence regulation will fail to address the need for compliance with EU trade agreements and more importantly will create inconsistencies in EU food regulation, potentially compromising the food safety and quality standards that are currently in place.

This Note proposes a three-pronged solution: first, the creation of an empowered, centralized regulatory authority to govern GM crop policy in the EU; second, the repeal of existing exceptions that tolerate member state contravention for health or environmental reasons; third, the prevention of unintended crop contamination via creation of geographic zones across Europe that isolate the growth of GM crops. These geographic zones must be regulated at the EU level to ensure that centralized trade regulations can continue to work in coordination with the crop containment measures, as well as to adequately protect growers whose fields are located near state borders and whom are therefore affected by the GM policies of neighboring states.

Part II of this Note discusses the nexus of the GM farming controversy, which is the danger of conventional and organic crop contamination by neighboring GM fields. This section discusses European attitudes toward GM food and describes how the challenge of coexistence is a particularly important factor in Europe, where farms are typically less than fifty acres in size and are tightly concentrated in certain regions. Part III analyzes the existing legal framework governing the controversial GM issues and discusses the EU agencies involved in food and agriculture regulation, focusing on those agencies specifically responsible for monitoring GM materials.


Part IV discusses conflicting preferences with regard to GM crop growth, focusing on the most controversial member states’ policies prior to the recommended Commission GM Guidelines. Analysis of these member states’ approaches serves as a useful tool for predicting likely trends in member state policies moving forward.\footnote{15} European Court of Justice cases also demonstrate the tension between member state sovereignty and the need for EU uniformity.\footnote{16}

Part V proposes solutions that balance member state sovereignty with the need for uniformity. Specifically, Part V advocates for creating geographic zones for GM containment while also enhancing EU regulations to ensure uncompromised central EU authority over GM matters. In light of historic scandals regarding uniformity in food safety regulation, the EU cannot withstand another blow to its ability to regulate important matters of public policy.\footnote{17} By the same token, it would be a disservice to European farmers and consumers if regulations were not put in place to reflect their passionate attitudes toward GM food. If application of these regulations descends into chaos, a patchwork of farmers growing GM crops, especially those on the edge of the GM-free areas, could contaminate conventional and organic fields across Europe. The result would be a continent of crops that European citizens themselves would not want to consume.

II. CHALLENGES OF CROP COEXISTENCE

The European population’s opposition to the growth and consumption of GM food products has been strong, particularly compared to the relative silence on the issue in the United States.\footnote{18} The thrust of the European argument against GMOs is that the field of modern biotechnology is still new, “and there are many potential unknowns associated with introducing..."
GMOs into both the human food chain and the natural environment.”\textsuperscript{19}
Some of the most significant “risks include the evolution of [GMOs] into ‘super weeds,’
cross-pollination introducing herbicide resistance into
existing weeds or introducing undesirable genetic traits into neighboring
crops, and harm to nontarget populations caused by toxins introduced to
create insect resistance.”\textsuperscript{20} Meanwhile, U.S. consumers remain largely
unaware and unconcerned that approximately 75% of American processed
foods contain some GM ingredients and are not labeled as such.\textsuperscript{21}

European farmers, consumers, and activists have a far more passionate
attitude toward GM food.\textsuperscript{22} Some farmers are attracted to the economic
benefit of GM crops; however, many others prefer non-GM crops on the
bases of tradition and principle.\textsuperscript{23} Like the latter group, most European
consumers value organic food produced by traditional means, and are
suspicous of GM materials entering the food supply.\textsuperscript{24} Environmental
activist groups, such as Greenpeace,\textsuperscript{25} are also vocal about their attitudes
toward genetic modification.

In addition to differences in food culture and attitudes toward GM crops,
Europeans must grow GM crops in an agricultural system that is
geographically different from that in the United States. In 2007, the average
farm in the EU was 46.2 acres while in the United States it was 418 acres.\textsuperscript{26}
The subsequent addition of twelve new member states to the European Union
brought with it smaller farm sizes than the original members, resulting in a
U.S. average farm size of more than twelve times that of the average EU

\textsuperscript{19} Id.
\textsuperscript{20} Carl H. Nelson, Risk Perception, Behavior, and Consumer Response to Genetically
Modified Organisms: Toward Understanding American and European Public Reaction, 44
AM. BEHAV. SCIENTIST 1371, 1371 (2001).
\textsuperscript{21} Carlarne, supra note 18, at 313–14.
\textsuperscript{22} Nelson, supra note 20, at 1372 (describing how the regulatory regime is a reflection of
consumer demand for protection from the potential dangers posed by GMOs).
\textsuperscript{23} DIAHANNA LYNCH, AND DAVID VOGEL, COUNCIL ON FOREIGN RELATIONS, THE REGULATION
OF GMOS IN EUROPE AND THE UNITED STATES: A CASE STUDY OF CONTEMPORARY EUROPEAN
\textsuperscript{24} See Reimar von Alvensleben, Beliefs Associated with Food Production Methods, in
FOOD, PEOPLE, AND SOCIETY: A EUROPEAN PERSPECTIVE OF CONSUMERS’ FOOD CHOICES 381,
394 (Lynn J. Frewer et al. eds., 2001) (noting that studies show GM product prices must be
30% to 40% lower than competing non-GM products for European consumers to choose them
over the organic or conventional alternatives).
\textsuperscript{25} Say No to Genetic Engineering, GREENPEACE, http://www.greenpeace.org/international/en/
campaigns/agriculture/problem/genetic-engineering/ (last visited Nov. 8, 2011).
\textsuperscript{26} European Union: Basic Information, supra note 14.
A HOUSE DIVIDED

2012

farm, which became 34.1 acres. Furthermore, farm sizes in the EU vary significantly by country, from an average farm size in the United Kingdom of 171 acres to Hungary’s average of 7.2 acres. It should be noted that “[a]griculture accounts for a nearly identical proportion of total economic activity in the United States and the EU,” however “the EU has more than three times as many farms.” Because the EU’s farm structure is characterized by a larger number of smaller farms, the choice of a single farmer to grow GM crops and the resulting risk of crop contamination to neighboring land can have a significant effect on many other growers in the region.

Agricultural systems are generally described as one of three types: “conventional production systems, conventional production systems utilizing genetically engineered (GE) crops, and organic production systems.” GM systems “use crops that have been genetically engineered to resist pests or disease or to tolerate herbicides.” While the three types of farming systems can be utilized in the same geographic region, producers of conventional or organic crops typically want to avoid the contamination of their crops by GM materials. In the EU, where consumers are wary of GM crops, avoiding crop contamination is particularly important in preserving the European population’s ability to choose between GM and non-GM products for consumption.

The European Commission defines the term coexistence as “the ability of farmers to make a practical choice between conventional, organic and GM-crop production, in compliance with the legal obligations for labelling and/or purity standards.” In a practical sense, coexistence calls into question how

27 Id.
28 Id.
32 Id.
crops intended for different consumers—especially those who desire organic or non-GM food—can be grown in the same region as GM crops without one type of crop compromising the economic and social value of the other.\textsuperscript{34} The operative word is choice: farmers should be allowed to cultivate the crops of their choosing\textsuperscript{35} without interference from neighboring GM fields.\textsuperscript{36}

The issue of coexistence has created “significant controversy” in Europe in recent years.\textsuperscript{37} This controversy can be attributed, in part, to global cultivation of GM crops and resulting GM product availability because although a number of GMOs have been approved for processing or consumption in the EU, few have been approved for cultivation.\textsuperscript{38} Infrequent cultivation approval is most likely a consequence of the GMO approval process—until a seed variety is listed in the EU’s Common Catalogue of Varieties of Agricultural Plant Species,\textsuperscript{39} a variety cannot be sold and planted in any EU member state.\textsuperscript{40}

While EU policy encourages biotech development on its face, including that of GM crops, a complicated system of Directives and Regulations governing GM crop authorization has slowed the process of GM crop growth in the EU.\textsuperscript{41} For example, a lengthy moratorium on GM crop authorization spanning from 1998 through 2004 exacerbated an already slow approval process.\textsuperscript{42}

The issue of coexistence is extraordinarily controversial.\textsuperscript{43} Resolving this issue to all parties’ satisfaction depends on the EU’s ability to retain enough authority to effectively regulate the actions of European farmers. Thus, choosing a capable organization to undertake this challenge is critical to

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\textsuperscript{34} Grossman, supra note 31, at 325.
\textsuperscript{35} Id.
\textsuperscript{37} Grossman, supra note 31, at 325.
\textsuperscript{38} Id. at 326.
\textsuperscript{39} For the complete catalogue as of December 12, 2011, see Common Catalogue of Varieties of Agricultural Plan Species, 2011 O.J. (C 380 A) 1.
\textsuperscript{41} Grossman, supra note 31, at 327.
\textsuperscript{42} Id.
ensuring regulatory uniformity and objectivity. Policymakers seem to think that various member states should regulate coexistence to ensure that the varying “geographical, ecological and climatic conditions” that affect crop production will be duly considered.\textsuperscript{44} The wisdom of this preference is debatable if a uniform and effective system is the ultimate goal. GM lawmaking at the member state level will likely reflect differing biases and priorities, undermining the prospect of an effective, uniform GM regulatory framework.

The problem with decentralized regulation of GM crop growth lies in the nature of its most critical practical challenge: neighboring crop contamination. The problem arises because of “adventitious presence,” defined as “unavoidable variability in seed, grain, and food”—a phenomenon considered natural before the advent of genetic modification.\textsuperscript{45} At issue is the fact that, in addition to genetically modified materials, adventitious presence can also be caused by naturally occurring elements such as weeds, seeds, dirt, and insect parts.\textsuperscript{46} Crops almost unavoidably include the adventitious presence of some foreign materials, often resulting from cross-pollination from neighboring fields.\textsuperscript{47} While most farmers do their best to exclude such materials from their crops, a certain amount of contamination is unavoidable due to factors out of farmers’ control, like wind and insects.\textsuperscript{48} GM crop development has brought this basic reality of farming to the forefront of the debate, as many European producers, consumers, and governments wish to avoid contamination.\textsuperscript{49}


\textsuperscript{45} Serina Vandegrift & Christine Gould, Issues Surrounding the International Regulation of Adventitious Presence and Biotechnology, 44 JURIMETRICS J. 81, 83 (2003); see also What Is Adventitious Presence in Seed?, AM. SEED TRADE ASS’N, http://www.amseed.com/qaDetail.asp?id=52 (last visited Jan. 10, 2012) (“[Adventitious presence] refers to the unintended or unintentional presence of another seed variety or genetic material . . . as a result of natural, mechanical or human means . . . For example, the detection of trace amounts of biotech material in traditional seed would be referred to as adventitious biotech presence.”).


\textsuperscript{47} See EUROPA BIO, supra note 36, at 5 (explaining that close proximity is usually required for cross-pollination to occur).

\textsuperscript{48} Id. at 4 (citation omitted).

Coexistence is described as having both horizontal and vertical elements. The relationship between conventional and organic crop farmers and those who cultivate GM crops is classified as “horizontal.” In other words, horizontal coexistence refers to farmer interaction at the same stage of the production and distribution chain, such as the planting or harvesting stages. GM growers who neighbor conventional or organic fields often impose isolation distances, segregate crops, and notify nearby farmers of crop contents as methods of avoiding cross-contamination. Issues relating to seed content and quality—namely, GMO presence—are categorized as vertical coexistence issues because they involve every stage of the food production chain. Initial seed purity and potential GM contamination of organic or conventional seeds contribute to the overall level of GM material in food sold to consumers.

Scholars almost uniformly postulate that farmers have successfully managed coexistence all over the world, most often citing successful crop separation in the United States. This prevailing view fails to take into account the unique agricultural geography of EU member states, which renders U.S. success with crop isolation methods largely inapplicable in Europe.

In 2002, before the ban on GM crops was instituted, the European Commission Joint Research Centre (ECJRC) conducted an extensive study of GM crop cultivation, evaluating different scenarios for successful coexistence. The purposes of the ECJRC study included:

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51 Id. at 4.
52 Id. at 3.
53 Id. at 5.
55 Brookes, supra note 46, at 3 (stating that GM crops have been, and continue to, co-exist successfully with conventional and organic crops in North America).
• Identifying sources and levels of adventitious presence of GM crops on non-GM farms;
• Assessing potential farming changes that may reduce adventitious presence of GM crops in conventional crops; and
• Estimating the costs of such changes, monitoring systems, and insurance against contamination for non-GM farmers.\(^\text{58}\)

Notably, the ECJRC study estimated costs for growers of non-GM crops rather than GM growers in order to accurately reflect “the present situation in which there is no particular legal obligation for commercial GM crop production to introduce measures to [minimize] adventitious presence of GM crops in non-GM crops.”\(^\text{59}\) The study found that the sources of adventitious presence included “seed impurities, spread of pollen and seeds from field to field by wind, insects and machines, overwintering of plants and plants growing from spread seeds as well as mixing of crops after harvest.”\(^\text{60}\)

ECJRC study findings are useful in illustrating the importance of geographic containment in preventing crop contamination. The study found that in the regions in which 10% of crops were of a GM variety, the non-GM crops contained significant levels of GMO content.\(^\text{61}\) This result is significant because countries that have readily adopted GM crops typically contain 50% GM crops.\(^\text{62}\) While the study found that level of contamination in conventional crops could be maintained below threshold GM labeling levels (1.0%), to do this would require additional costs for precautions and monitoring, and would necessitate neighboring farm cooperation.\(^\text{63}\) Most significantly, the study found that because of the lower threshold of GM material permitted for organic crop production (0.1%), “organic production would not be feasible in a region with GM crop production.”\(^\text{64}\)

This Note does not address the issue of labeling and traceability of GM materials in depth; however, this issue plays a critical role in European crop

\(^{58}\) Id. at iii.
\(^{59}\) Id. at 1, para. 7.
\(^{60}\) Id. at 2, para. 9.
\(^{61}\) Id. para. 10.
\(^{62}\) Id.
\(^{63}\) See id. paras. 12–14 (“Compliance with the 1% [labeling] threshold would result in additional costs (changing farming practices, monitoring system, insurance) of 1% – 9% of current product price for maize and potato. For [oilseed rape] seed production, the equivalent costs to comply with a 0.3% [labeling] threshold would be 10% – 41% of current price.”).
\(^{64}\) Id. para. 13.
coexistence. For instance, most European growers want to keep the adventitious presence of GM material in conventional or organic crops below the threshold level that would require them to label their products as GM for a variety of reasons including consumer preference and regulatory compliance costs.

Coexistence of GM crops and non-GM crops, as explained above, is uniquely challenging in EU because of strong consumer preferences against it, as well as the small-scale agricultural geography of the region. This challenge, although addressed by the European Commission and other agencies through a variety of regulatory schemes, remains unsettled.

III. EU FOOD AND AGRICULTURE REGULATION

A. Food Law in the EU

The fundamental characteristics of EU law and policy have implications for how agricultural regulations are enacted and can succeed. Each of the EU’s twenty-seven member states “relinquish some of their sovereignty to the EU institutions of the European Parliament, the European Commission and the Council of Ministers, who are responsible for proposing and adopting EU legislation.” While member states do retain their laws, they must adopt all European legislation. In circumstances where member state law conflicts with EU law, “EU law prevails.”

EU law is created in three ways. The first is the enactment of legislation “in the form of international treaties laying down basic policies, structures, procedures and powers.” The second is the enactment of “secondary legislation, in the form of regulations, directives and decisions.” The third

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66 See generally Grossman, supra note 31, at 328–32 (describing the adventitious presence of GM crops and coexistence in the EU).
67 See, e.g., Recommendation on Guidelines for GM Development, *supra* note 33, para. 2.1.8 (noting that there is no particular policy instrument that can be recommended for coexistence, and that member states may prefer to explore the use of different policy instruments, e.g., voluntary agreements, soft-law approaches, and legislation).
68 Ruckman, *supra* note 7, at 224.
69 Id.
70 Id.
71 Id.
72 Id.
73 Id.
is development of case law “produced by the European Court of Justice to resolve disputes in interpretation and application of EU law,” which carries legislative force. Secondary legislation, particularly the Novel Foods Regulation and the Food Supplements Directive, has emerged as most relevant to the GM food debate. Timing provisions in regulations and directives are especially critical because “[r]egulations are directly applicable in all Member States from the date they enter force, [but] directives do not apply until implemented in national law.”

European member states are individually represented in the European Commission, which is composed of one independent member from each member state and is responsible for administering Parliamentary policies. Within the European Commission, the Commissioner of Health and Consumer Protection and the Standing Committee on the Food Chain and Animal Health are the primary sources for the development of food safety measures. In addition to representation on the European Commission, the overarching “principle of institutional autonomy” is an important part of the sovereignty of member states. This principle ensures that EU law does not dictate public sector organization of member states. Instead, the national legislature of each member state must create a food safety authority in order to meet the state’s obligation to comply with EU law. Most member states delegate this responsibility to a Minister of Agriculture, a Minister of Public Health, an independent food safety authority, or a combination thereof.

The modern landscape of EU food regulations were largely shaped by the Bovine Spongiform Encephalitis (BSE)—or “mad cow” disease—food crisis

74 Id.
77 Ruckman, supra note 7, at 224.
81 Id.
82 Id.
83 Id.
in 1996. While the European Commission was involved in food regulation prior to the outbreak, its original focus was on “removing barriers to trade,” while “public health concerns played a minor role.” Only after the BSE crisis did food safety emerge as a pressing European community concern. Investigations and resolutions in the aftermath of the crisis signified a “shift to an approach in which economic motives and agricultural policy concerns were no longer dominating issues of public health and consumer confidence.”

In his first speech to Parliament in October 1999, new European Commission President Romano Prodi announced that food safety, and thus consumer confidence in European food, was now a top priority. Prodi emphasized the importance of monitoring “[t]he entire food production chain ‘from the plough to the plate,’” citing the need for “a single, coherent body of legislation.” Importantly, Prodi noted that “[i]n a single market [like the EU] . . . there must be equal protection for all citizens.”

Heeding Prodi’s call to action, in January 2000 the European Commission published its White Paper on Food Safety which included a proposal for an independent EU food agency. The Commission soon passed a regulation, known as the General Food Law (GFL), creating the European Food Safety Authority (EFSA), and a small team at the Directorate-General Public Health and Consumer Protection set up the Authority.

EFSA’s founding regulation states, “the free movement of food and feed within the Community can be achieved only if food and feed safety requirements do not differ significantly from Member State to Member

85 Id.
86 Id. 178–79.
87 Id. at 179.
89 Id.
90 Id.
93 GROENLEER, supra note 84, at 180.
Therefore, “[i]n order to ensure the safety of food, it is necessary to consider all aspects of the food production chain as a continuum . . . up to and including sale or supply of food to the consumer because each element may have a potential impact on food safety.”

However, EFSA’s role in achieving such harmonization was expressly restricted by the regulation to “the provision of support on scientific matters,” requiring the agency to allow the European Community (EC) and member states to develop and implement “food safety standards and trade agreements.”

Despite EFSA’s limited mandate, the GFL became fundamental to most European food law after its passage in 2002. Article 17 of the GFL assigns responsibility for official controls and enforcement of food law to the member states, which includes the duty to monitor and ensure that food business operators are meeting food law requirements. Although the GFL delegates substantial authority to member states, other EU food regulations set certain standards for enforcement and supervision of the states, including requirements for official controls, laboratories, and accreditation.

**B. Regulation of Genetically Modified Organisms**

European Community directives also govern the contained use of GMOs and their deliberate release. Directive 2001/18 concerns GMO traceability...
and labeling requirements, including the release of GMOs themselves on the market or the release of products that contain GMOs.101

Directive 2001/18 requires EU member states to record GM information in registers that include GMO release locations for the requisite field tests as well as a record of GM crops and products that have been approved and placed on the market.102 This requirement is meant to ensure that GMO locations are known to the public so that the potential environmental effects, including nearby crop contamination, can be monitored.103

Under Directive 2001/18 the GMO approval process begins at the member state level with the state’s chosen authority—the Department of Agriculture, for example—receiving information about the GMO, including an environmental risk assessment.104 The process becomes multilateral and cooperative at the next stage; the state authority sends the information and its report to the European Commission and to other member state regulatory bodies who may object the GMO approval if they so choose.105 If all issues are resolved at this stage, the authority of the member state that compiled the initial GMO report must give written consent for the use of the GMO on the market.106 Consent is valid “for a maximum period of ten years,” but consent can be renewed.”107

If a member state or the Commission maintains an objection to approval, the appropriate scientific committee must be consulted.108 If a scientific committee approves the GMO, the Commission then follows a regulatory procedure to give consent to placing the GMO on the market, first requiring approval from a committee made up of member state representatives.109 If the member state committee agrees with the scientific committee, the Commission grants consent.110 If the member state committee disagrees, the Commission works with Parliament and the Council to obtain consent.111

101 Deliberate Release of Genetically Modified Organisms, supra note 13, pt. C.
102 Id. art. 31.
103 Id.
104 Id. art. 13.
105 Id. arts. 14 (2)-(3), 15(1).
106 Id. art. 15(3); see also Case C-6/99, Ass’n Greenpeace France v. Ministère de l’Agriculture et de la Pêche, 2000 E.C.R. I-1651, para. 7(2) (holding that when no objections are raised, the competent authority must give consent to the petitioner seeking release of the GMO).
107 Deliberate Release of Genetically Modified Organisms, supra note 13, arts. 15(4), 17.
108 Id. art. 28(1).
109 Id. art. 15.
111 Id.
A safeguard clause in Directive 2001/18 protects member states’ discretion to restrict or prohibit cultivation of GMOs in their territories, even if the European Council and Parliament approve the GMO. This clause is central to the controversial actions of a number of member states who have attempted to ban GMOs within their borders. Under this clause, a state can restrict use or sale of a GMO if the state has new information showing that the GMO poses a risk to human health or the environment.

An additional member state loophole is found in Article 95(5) of the European Community Treaty. This Article allows member states to introduce their own provisions even after adopting a Council or Commission approval measure “based on new scientific evidence relating to the protection of the environment . . . on grounds of a problem specific to that Member State arising after the adoption of the harmonisation measure.”

In 2008, the European Commission set up the European Coexistence Bureau (ECoB) to “develop technical reference documents for best practices to achieve coexistence.” At the time of this writing, the ECoB has published a “best practices” report for maize crop production, and similar reports for other crops are expected to follow.

On July 13, 2010, the Commission issued a dramatic set of new guidelines for GM and conventional crop coexistence (Commission GM Guidelines). Before these guidelines were issued, the standard rules allowed GM-free zones only on the basis of voluntary agreements between

112 Deliberate Release of Genetically Modified Organisms, supra note 13, art. 23.
113 Rules on GMOs in the EU – Ban on GMOs Cultivation, EUROPA.EU, http://ec.europa.eu/food/food/biotechnology/gmo_ban_cultivation_en.htm (last visited Nov. 9, 2011) (noting that Austria, France, Germany, Greece, Hungary, and Luxembourg apply safeguard clauses on GMO events).
114 Deliberate Release of Genetically Modified Organisms, supra note 13, art. 23(1).
116 See The European Coexistence Bureau, EUROPA.EU, http://ecob.jrc.ec.europa.eu/ (last visited Nov. 9, 2011) (“The European Coexistence Bureau [was] established jointly by the Directorate General for Agriculture and Rural Development and the Joint Research Centre (JRC) of the European Commission at the JRC’s Institute for Prospective Technological Studies (IPTS), Seville, Spain.”).
119 Commission GM Guidelines, supra note 9.
growers, or through exceptions to European Commission guidelines due to environmental risk assessment challenges. The Commission GM Guidelines drastically changed the definition of contamination. Until 2010, a threshold value of 0.9% was regarded as the minimum amount for economic damage because breaching that threshold required labeling as GM material. In contrast, a showing of virtually any GM content can be regarded as an economic loss under the new guidelines.

Under the Commission GM Guidelines, member states are “obligated to regulate the cultivation of genetically modified plants through suitable specifications in such a way that different agricultural systems with or without gene technology can exist side by side in a sustainable manner.” According to the Commission, the economic harm of GMO entry into the conventional crop system has gone beyond the damages of crop contamination. Growers and suppliers have also incurred significant production costs in separating GM from non-GM products.

The Commission GM Guidelines was also motivated by the aforementioned disparity in member state standards for GM regulation and planning. Importantly, the guidelines allow states to designate GM-free zones. Previously, regulatory GM cultivation bans had been repeatedly declared invalid by the European Court of Justice.

The Commission GM Guidelines issued in 2010 are the first step toward implementing changes to the European policy on gene technology announced in 2009. According to the Commission GM Guidelines, the necessary next step is to ensure that regulations for EU GM releases are modified so that approval of GM plants can be considered on grounds other than health and environmental risks. While the Commission calls for new considerations, it also voiced its concern that “[t]he centralised EU approval

120 New Coexistence, supra note 10.
121 Commission GM Guidelines, supra note 9, Annex § 1.1.
122 See id. (“[T]he potential loss of income for producers of particular agriculture products such as organic products is not necessarily limited to exceeding the labelling threshold set out in EU legislation at 0.9 %. In certain cases, . . . the presence of traces of GMOs in particular food crops—even at a level below 0.9 %—may cause economic damages to operators who would wish to market them as non-containing GMOs.”).
123 New Coexistence, supra note 10.
124 Commission GM Guidelines, supra note 9, Annex § 1.1.
125 New Coexistence, supra note 10.
126 Id.
127 Commission GM Guidelines, supra note 9, Annex § 2.4.
128 New Coexistence, supra note 10.
129 Id.
130 Id.
system based on the scientific evaluation of health and environmental risks through the European Food Safety Authority (EFSA) should be maintained." 131 Whether this scheme of centralized approval combined with decentralized enforcement enables effective regulation of GMOs remains to be seen.

IV. THE ESCALATING CONFLICT

As described in Part II, EU member states enjoy a certain degree of leeway as they interpret regulation of GMOs, and if the Commission GM Guidelines are sanctioned member states will have even more discretion. Under the current regime, states may accept EU regulations with conditions and stipulations, and each member state assigns a national authority to monitor GMOs. 132 Though GM crop cultivation is technically authorized throughout the EU, the extent of acceptance varies among member states and their populations. 133

Some states are vehemently opposed to genetic modification and biotechnology, while others are open to the potential opportunities for technological advancement and economic benefit. 134 There are several states whose policies and actions illustrate some of the most important conflicts and potential solutions for the coexistence of GM, conventional, and organic crops. 135 A discussion of the following member states also illustrates the most likely developments across the continent if the Commission GM Guidelines are sanctioned and integrated into national laws at the member state level. States are likely to follow and expand upon their present course of action as the new guidelines take effect.

The first example is Austria, where the public is “hostile to agricultural biotechnology.” 136 Austrian regulations currently mirror the state’s popular opinion and ban several GMOs that were approved as safe at the European level. 137 The national GMO ban has been challenged by the European Commission three times, and in a “stinging rebuff” to EU executive power, it

131 Id.
133 Id.
134 See, e.g., Nelson, supra note 20, at 1371–72 (discussing varying reactions of the American and English populations to GMOs).
135 See generally Country Reports, supra note 15 (highlighting various laws of EU member states regarding GMOs).
137 Country Reports, supra note 15, at 1.
has consistently been upheld. At an EU vote on whether to force Vienna and Budapest to end their GM crop bans, at least twenty-one of the bloc’s twenty-seven member states voted against the measure, reaffirming the “sovereign right” of Austria and Hungary to prohibit GM cultivation. Austria is now “the only remaining country cited in the World Trade Organization case filed against the European Commission by major GM crop growers Argentina, Canada and the United States that still applies bans on specific GM products.”

Because no GM crops are currently cultivated in Austria, coexistence regulations are unnecessary in practice. However most of Austria’s provinces have passed regulatory guidelines for coexistence. These guidelines, along with those of other EU member states, are useful in analyzing best practices, current innovation, and potential solutions for Europe as a whole.

The Austrian Genetic Engineering Act stipulates that coexistence regulations must “safeguard organic and conventional farming methods.” This overall goal is accomplished by state-level regulations, which generally utilize a set of common requirements, such as buffer zones between crops and information sharing among farmers. Austrian provincial regulations provide that “each farmer who wishes to cultivate GMOs is subject to an official (registration or authorisation) procedure,” in which “authorities may impose conditions for, or prohibit, cultivation.” Neighboring farmers are also named as parties to any registration or authorization procedure, to ensure that all affected parties are involved.

Under provincial regulations, conventional and organic farms in Austria are entitled to compensation for “significant adverse effects” that result from

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139 Id.
140 Id.
141 Country Reports, supra note 15, at 1–2.
142 Id. at 1.
144 See id. (“The elaboration of detailed coexistence rules lies within the competence of the federal provinces. The pioneer was the province of Carinthia with its Genetic Engineering Provision law. This was followed by similar laws in Vienna, Lower Austria, Salzburg, Burgenland, Tyrol and Styria . . . .”).
146 Id.
GMO contamination. Such adverse effects can include a resulting inability to sell their harvest, or an inability to sell it as planned. Injunctive relief is also available if a neighboring farmer is responsible for the harm. After a demand for compensation because of significant adverse effects caused by GMOs has been filed, the claim may only be rejected if the farmer using GMO crops is able to prove that his actions did not cause the contamination. This is effectively a guilty until proven innocent standard; however, parties must attempt to reach settlement through arbitration before any legal action can be taken.

Much like Austria, the German public is generally opposed to the cultivation of GM crops. However, many German politicians support biotechnology because of its potential contributions to national economic growth. Despite GMO economic potential, commercial production of GM maize in Germany did not begin until 2004 and in 2005 it accounted for a mere 0.1% of the country’s total maize production. The tension between the German government’s efforts to cautiously allow contained GM crop cultivation and resistance by some members of the militantly anti-GM environmentalist population provides a snapshot of the worst-case scenario for poorly implemented policies. For example, a public register in Germany maps out the location of every farm cultivating GM crops, prompting some environmental activists to easily find and destroy the GM crops.

Germany has established a strict liability standard for GM material contamination, unlike Austria’s fault-based system, which is even more “likely to discourage German producers from planting GM crops.” Farmers growing GM plants are liable for economic losses incurred by neighboring farms due to unwanted contamination regardless of whether or not a direct connection between their actions and the harm can be shown. If a neighboring conventional or organic farmer discovers levels of GM

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147 National Regulations on Coexistence: Austria, supra note 143.
148 Id.
149 Id.
150 Id.
151 Id.
152 Country Reports, supra note 15, at 3.
153 Id.
154 Id.
156 Grossman, supra note 65, at 51.
material that exceed the 0.9% labeling threshold, an “economic loss” exists. Liability attaches even if the GM farmer followed the codes of agricultural practices recommended by government regulation to prevent adventitious presence.159

In another example, in 2004, the Netherlands became the first country in the EU to publish legal coexistence guidelines.160 The van Dijk committee, charged with authoring GMO regulations, brokered a cooperative agreement between conventional and organic farmers, seed producers, and chain organizations governing crop coexistence.161 The Dutch regulations that resulted were noticeably more amiable toward GM growers than those passed in Austria and Germany. For instance, Dutch GM crop farmers must inform neighboring farmers of their plans to produce GM crops by January 31 of each growing year.162 Any farmers who are planning to produce GM-free crops must then inform neighboring GM farmers of their intent to do so within two weeks of that date.163 Specific codes of practice, including minimum segregation distances, must be followed by GM farmers to avoid mixing GM with non-GM crops.164 Minimum separation distances are in place for potatoes, sugar beet, and maize, and vary depending on whether a GM field neighbors a conventional or organic field.165

In regard to crop contamination liability, farmers’ liability under Dutch law differs from both the Austrian fault standard and the German strict liability standard. Dutch GMO growers are automatically exempt from claims of GMO-related economic losses, as long as the accused grower followed coexistence regulations.166 Farmers with neighbors who followed regulations but still caused contamination are compensated from a national fund, to which “[s]eed growers, breeders, farmers (including organic farmers) and processors all contribute.”167

158 Id.
159 Id.
160 Id. at 7.
161 Id.
163 Id.
165 Id. at 8 (“For GM fields adjacent to conventional fields, the separation distances are 3 metres for potatoes, 1.5 metres for sugar beet, and 25 metres for maize. If the GM field is adjacent to a field with an [sic] certified GM-free crop (as is the case for organic farming), the minimum separation distances increase to 10 metres for potatoes, 3 metres for sugar beet, and 250 metres for maize.”).
166 National Coexistence Rules: The Netherlands, supra note 162.
167 Id. The Dutch Government will contribute to the compensation fund during the initial
In contrast, “Spain is arguably the most enthusiastic adopter of GM agriculture in the EU, allowing the cultivation of GM crops without a complete regulation regime.”168 In fact, GM maize has been commercially grown in Spain since 1998, when it became the first member state to allow GM cultivation.169 Coexistence rules have not yet been formally adopted, however, due to ongoing disputes between the Spanish Ministry of Agriculture and the Ministry of Environment, which are each under pressure from divergent advocacy groups.170 Until regulations are adopted, growers must simply follow seed company guidelines together with some specific regulations, such as the Draft Royal Law on Coexistence.171 There are, however, “no compulsory training courses, no specific liability rules and 50-[meter] isolation distances are standard.”172 Furthermore, while Spanish regulations do not currently enforce GM-free zones, “market forces have created region-by-region segregation” of GM crop cultivation in Spain.173 In highly productive Spanish regions, such as Aragon and Catalonia, between 42% and 55% of corn grown is genetically modified.174 Meanwhile, other regions such as Asturias and the Basque Country have declared themselves GM-free.175

The Spanish Ministry of Agriculture and the Ministry of Environment are attempting to enact regulations to better allow farmers to choose whether to produce organic, conventional or genetically modified crops.176 Regulations are in place with specific coexistence provisions that govern the cultivation of maize in Spain.177

Like Spain, the UK government is not opposed to cultivating GM crops, but it has taken an initially cautious approach.178 The UK government policy on GM crops was set forth in a Parliamentary statement issued in March

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169 Country Reports, supra note 15, at 8.
170 Ramessar et al., supra note 168, at 135.
171 The Spanish Government has the Government published a second version of the draft Royal Decree which regulates GM and non-GM crop coexistence, but it has not yet been notified to the EU. The draft is available in Spanish at http://www.agrodigital.com/images/ogm.pdf.
172 Ramessar et al., supra note 168, at 135.
173 Id.
174 Id.
175 Id.
177 Id.
178 Id. at 10.
While the UK government has “concluded that there is no scientific case for a blanket ban on the cultivation of GM crops,” it maintains that “proposed uses need to be assessed for safety on a case-by-case basis,” and will “only agree to the commercial release of a GM crop if the evidence shows that it does not pose an unacceptable risk to human health and the environment.” Nonetheless, there has been no commercial cultivation of GM crops in the UK as of January 2010.

In 2006, the UK Department for Environment, Food and Rural Affairs (DEFRA) issued a consultation paper on proposed coexistence policy for England, and received more than 11,000 responses from the public. The consultation paper proposed GM farmers should observe statutory crop separation distances to minimize GM cross-pollination and be required to notify neighboring farmers of their intention to cultivate a GM crop if land was within a specified distance. DEFRA’s consultation paper also sought views on whether special coexistence rules should apply in relation to organic production; options for maintaining the economic position of non-GM farmers if they have a crop with an unwanted GM presence above the EU 0.9% labelling threshold; the pros and cons of establishing a public register giving the precise location of all commercial GM crops; and possible guidance to farmers who may be interested in creating voluntary GM-free zones.

Most of the responses DEFRA received (approximately 80%) were printed forms or petitions from campaigns against the release of GM crops. For senders of the form letters, the principal concern was that the DEFRA proposals should not institute a 0.9% threshold for GMOs, but instead should attempt to prevent any GM presence whatsoever in

180 Id.
181 Id.
182 Id.
183 Id.
184 Id.
185 Id. at 2.
conventional and organic crops. The public responses that were not form letters either expressed a general opposition to GM crops (about 1,370 in total), or centered on the perceived threat to organic farming (about 390 in total). The UK has yet to publish official regulations on coexistence, but the UK has acknowledged the need to address GMO issues domestically in light of the EU GMO regulatory framework.

The aforementioned differences in member state GMO policies will likely be exacerbated if the July 2010 Commission GM Guidelines are sanctioned. Moreover, member states’ ability to create GM-free zones pursuant to Commission GM Guidelines may create unanticipated obstacles for the EU’s enforcement of food quality and safety standards, as well as for the EU’s capacity to provide adequate legal protections for farmers whose fields are contaminated by GM material from across State borders.

V. CHALLENGES AND SOLUTIONS

The July 2010 Commission GM Guidelines, if sanctioned, will be incorporated into member state laws as directives. While it is difficult to predict the host of challenges that inevitably accompany such sweeping agricultural regulation, it is clear that certain problems will emerge in the coming months and years.

As described in Part I, the coexistence of GM and conventional or organic crops is highly difficult and expensive. Establishing GM-free zones is the most effective and realistic solution to the coexistence problem, and on this subject the 2010 guidelines are laudable. However, the decentralization and delegation of authority to the member states to regulate the location of these zones could have adverse consequences that could be more effectively managed by a centralized EU government policy.

Centralized and effective food safety regulations are particularly important because Europe has experienced several dramatic scandals due to the lack of uniformity, and it is critical that the EU not suffer another blow to its credibility or ability to regulate important issues of public policy.

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186 Id.
187 Id.
189 See New Coexistence, supra note 10 (noting that the guidelines allow member states to develop and enforce coexistence at the state level).
190 For a discussion of the BSE crisis, a food scandal that threatened the continued existence
Additionally, the EU, as the trade authority for EU member states, must act in order to preserve its international standing, uphold its obligations, and assert its ability to bind member states. Disrobing itself of the authority to regulate the coexistence of GM and conventional crops would be a definitive and disfavorable step toward minimizing the EU’s role in negotiating trade agreements with members of the seed, feed, and food communities worldwide.

Furthermore, the EU must protect its member states’ citizens from the unintended consequences of irregular and decentralized food policy. If food trade and safety controls remain regulated by the centralized EU government, but coexistence zone line-drawing is subject to member state authority, there could be disputes between growers in border regions.

This issue presents a particular challenge for EU regulators, because crop contamination involves the influence of wind and other natural forces that carry GM materials over a considerable distance—not merely from one field to an adjacent field.191 States with large agricultural regions bordering those of other countries could encounter challenges if one state’s GM zone borders another state’s GM-free zone.

The most significant challenge that will emerge from the decentralization of coexistence regulation will be the result of dissimilar legal protections for European farmers in the event of crop contamination. As described in Part III, member states have varying approaches to liability for GM material contamination. The dramatically different standards of loss, liability, and fault in member state tort systems may cause unnecessary conflict and lead to inequitable controversy resolutions.

Parties to litigation for crop contamination could include neighboring farmers, other GM farmers in the area, seed producers and distributors, farm equipment providers, and licensing authorities.192 However, since tort law principles vary throughout Europe, different outcomes could result even in comparable fact settings.193

For example, some member state legal systems distinguish between economic loss, which is a “mere consequence of preceding damage to the

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192 Bjarre Askeland et al., Liability and Compensation Schemes for Damage Resulting from the Presence of Genetically Modified Organisms in Non-GM Crops 22 (Bernhard A. Koch, ed. 2007), available at http://ec.europa.eu/agriculture/analysis/external/liability_gmo/full_text_en.pdf (noting that as the size of the recipient and source plots increased, the degree of transgene flow (contamination) also increased).
193 Id. at 23.
person or to tangible property of the victim...and so-called ‘pure’
economic loss which affects the victim’s assets directly without any
intermediary harm to her person or other property.” 194 This distinction is
critical to resolving cases of GM crop mixing. 195 The distinction becomes
outcome determinative in lawsuits because of consumer fear that the crops
may be genetically modified, “even if no actual admixture had occurred.” 196
A farmer could be unable to sell his crops to his intended market because of
this fear, even if the crop was not actually contaminated. The distinction
may also be relevant if a court treats GM material contamination as damage
to a farmer’s crop sales, but not to his non-GM crops or his field. 197

Differing concepts of fault among member states will also dramatically
affect the outcome of factually similar cases. Jurisdictions that utilize
traditional fault concepts will evaluate the defendant’s conduct, while those
under a strict liability system will have no need to do so. Austria, Germany,
Poland and Switzerland are among those that have introduced special strict
liability regimes, which apply specifically to crop coexistence problems. 198

These tort law principles will certainly have an effect on the manner of
GM crop growth in member states, most likely by discouraging widespread
GM cultivation in states with strict liability regimes. However, it is
important to remember that tort law is meant to compensate for past losses,
rather than to safeguard against future harm. For the benefit of food
producers across the EU, harmonized rules on crop coexistence would assist
all farmers’ efforts to avoid contamination damages, afford predictability and
uniformity fostering economic growth and increased profits, and allow
growers to cultivate GM crops without fear of unforeseeable contamination
liability.

The EU has a unique opportunity at this juncture. An EU-commissioned
study highlighted some of the most critical challenges of effective
coeexistence policy, and described the high cost of establishing effective
containment areas and ensuring that food products are GM free from farm to
fork. 199 This knowledge could provide a basis for a continent-wide
containment scheme in which GM crops are grown in easily-contained,
isolated agricultural sectors.

194 Id. A distinction is made between these types of loss in Austria, Cyprus, England, Finland,
Ireland, Norway, Poland, Portugal, Sweden, and Switzerland, but not in other EU States. Id.
195 Id.
196 Id.
197 Id.
198 Id. at 24.
199 BOCK ET AL., supra note 57.
The European population’s overwhelming preference for GM-free food should be respected and enforced by the EU government. Keeping coexistence regulation in the hands of the individual member states generates vulnerabilities in the member states’ balance between responding to economic needs and consumers’ popular opinion. If the decision of whether or not to allow GM crop planting is in the hands of the member states, global companies pursuing GM cultivation could “divide and conquer” the European market, entering and producing GM crops against the wishes of much of the populace. Therefore, in order to respect European’s preference for GM-free food, regulation of coexistence should be maintained at the greater EU level.

VI. CONCLUSION

The European Union has struggled over the past decade to develop an effective solution to the GM crop coexistence problem. An ideal policy would enable the EU to maintain its standing in the world trade community, progress economically by growing GM crops for export to the ready world market, and simultaneously respect and incorporate the passionate opposition to GM foods of the EU populace.

The EU should return to centralized regulation of GM crop policy by repealing the exceptions that tolerate member state contravention. Additionally, GM-free zones should be established across Europe in order to prevent unintended crop contamination. These geographic zones must be regulated at the EU level to ensure that trade regulations can continue to work in harmony with crop containment measures and to adequately protect food suppliers that are central to the economic vitality of the European Community.