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**Commission/Kommission II**

**Legal Framework of Environmental Law for Agricultural Production**

**National Report for the United States of America**

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# Legal Framework of Environmental Law for Agricultural Production

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## I. Agriculture in the US National Legal Structure

The United States developed as an agrarian nation, but the Framers of the US Constitution, adopted in 1787, included no special provisions for agriculture. Indeed, the Constitution and its Amendments make no reference to agriculture. Producers and others involved in the agriculture industry, of course, enjoy the same constitutional rights and protections as other citizens.

Federal and state statutes and regulations govern both individual producers and agriculture as an industry, just as they govern other individuals and businesses. In addition, both the US Congress and state legislatures have enacted laws that apply specifically to agriculture. Federal law are codified in the United States Code,<sup>1</sup> and each state has its own statutory codification. Legal principles of common law, established in court decisions, govern many agricultural issues, including contract and tort claims. Farmers, like others, are subject to common law tort suits to redress harm, including environmental damage, to persons or property.

The US Congress regularly enacts the federal Farm Bill, which authorizes various commodity programs (payment, loans, and other benefits), conservation programs, rural development, disaster assistance, agricultural research, nutrition, and other programs.<sup>2</sup> Other federal statutes govern specialized aspects of agriculture, including packers and stockyards, livestock slaughter, meat and poultry inspection, organic production, plant protection, farmland protection, specific commodities, pesticides, and many other activities.<sup>3</sup> Federal regulations, promulgated by administrative agencies (for example, the US Department of Agriculture, the US Environmental Protection Agency), implement statutory provisions. They are published for public comment in the Federal Register and codified in the Code of Federal Regulations.<sup>4</sup>

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<sup>1</sup> US Code [USC], link from <http://www.gpo.gov/fdsys/>.

<sup>2</sup> E.g., the Food, Conservation, and Energy Act of 2008, Pub. L. 110-234, 122 Stat. 923 (2008).

<sup>3</sup> Title 7 of the US Code codifies legislation for agriculture, but laws in other Titles also apply.

<sup>4</sup> Federal Register [Fed. Reg.] and Code of Federal Regulations [CFR], link from <http://www.gpo.gov/fdsys/>.

States enact statutes and promulgate regulations that apply within state borders. The "police power" allows state regulation to protect and maintain public health, safety, morals, and general welfare. States often delegate police power authority to subdivisions like counties and municipalities. Although the doctrine of preemption<sup>5</sup> applies to prevent state regulation in some areas regulated by federal law,<sup>6</sup> states have broad authority to enact laws that affect agriculture and the environment.

The complex judicial system in the US gives no preference to agriculture and provides no specialized courts for agriculture. Agricultural disputes, like other cases, are heard in the appropriate federal or state trial court, and trial court judgments may be appealed. In fact, with a few exceptions, US courts do not normally specialize in agriculture or other areas.<sup>7</sup>

The jurisdiction of federal courts includes cases that raise federal questions, defined as "civil actions arising under the Constitution, laws, or treaties of the United States"<sup>8</sup> and cases between parties with diversity of citizenship (that is, when plaintiff and defendant are citizens of different states).<sup>9</sup> Cases that involve issues under federal agricultural or environmental legislation, for example, may be filed in federal court. Each of the 50 States has its own court system. State courts have general jurisdiction and can decide any case properly filed. State law often governs questions related to agriculture -- issues of land use or farm nuisance, for example.

Administrative tribunals in federal agencies play a role in resolving some agricultural issues, particularly disputes connected with programs authorized by federal agricultural legislation. For example, parties who receive an adverse decision from an agency in the US Department of Agriculture (USDA) have the right to appeal to the National Appeals Division (NAD). The NAD acts independently of other USDA agencies, and it reports to the Secretary of Agriculture. Federal district courts hear appeals of final NAD determinations.<sup>10</sup>

## **II. Land for Agricultural Production in the United States**

In the US, the majority of land is rural, and agriculture is a major land use. The total land area is about 2.3 billion acres (1 hectare is 2.469 acres). The federal government owns and manages about 29 percent of US land (653 million acres), primarily in Alaska and the mountainous West. More than 60 percent of US land (99 percent of cropland) is privately owned.<sup>11</sup> The 48 contiguous states (that is, excluding Alaska and Hawaii) occupy about 1.9 billion acres, with 402 million acres owned by the federal government. Almost 1.4 billion

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<sup>5</sup> The Supremacy Clause of the US Constitution states that the "Constitution, and the Laws of the United States ... shall be the supreme Law of the Land." US Constitution, Art. VI, § 2.

<sup>6</sup> For example, the Federal Insecticide, Fungicide and Rodenticide Act provides that states may regulate sale and use of pesticides registered under FIFRA, but may not impose "requirements for labeling or packaging in addition to or different from those required under [FIFRA]." 7 USC § 136v(b).

<sup>7</sup> Specialized federal trial courts hear some cases (for example, tax, bankruptcy, federal claims), and the US Court of Appeals for the Federal Circuit is a specialized appellate court.

<sup>8</sup> 28 USC § 1331.

<sup>9</sup> 28 USC § 1332. Diversity cases require an amount in controversy of at least \$75,000.

<sup>10</sup> 7 USC §§ 6991-7002; 7 CFR part 11. See USDA, National Appeals Division, [www.nad.usda.gov](http://www.nad.usda.gov).

<sup>11</sup> Cynthia Nickerson et al., Major Uses of Land in the United States, 2007, at 35-36 (ERS, USDA, EIB 89, 2011). Private land includes land in foreign ownership, about 1 percent of US land (21.8 million acres); 19.5 million acres were farms and forests. *Id.* at 40.

acres are nonfederal rural land: cropland (357 million, including 324 million acres of prime farmland), rangeland (409 million), pasture (119 million), and forest (406 million). Urban uses are only about a small percentage of total US land.<sup>12</sup>

The USDA conducts a census of agriculture every five years. The latest, the 2012 Census of Agriculture, closed officially on 31 May 2013, and results are not yet available.<sup>13</sup> Data from the 2007 Census of Agriculture indicated that the US has 2.2 million farms. Land in farms is 922 million acres, with an average farm size of 418 acres. The majority of US farms are small, both in size and in value of sales. About 1.7 million farms have sales of less than \$50,000, and 1.5 million are smaller than 180 acres; in contrast, about 116,000 farms have sales over \$500,000, and 173,000 are larger than 1000 acres.<sup>14</sup>

Agricultural production adds significant value to the US economy. The USDA estimated that the value of agricultural sector production in 2012 was \$435.7 billion. The value of crop production was \$210 billion; livestock production, \$170.3 billion; services and forestry, \$55.4 billion. After deduction of various expenses, gross value added to the economy from agriculture was \$197.7 billion, and net farm income was \$112.8 billion.<sup>15</sup>

### **III. Regulation and Control of Agricultural Production**

#### **A. Agricultural Legislation**

Since the 1930s, US laws have authorized financial support for agricultural producers and programs to encourage conservation of farmland and other vulnerable rural land. The Agricultural Adjustment Act of 1938 and the Agricultural Act of 1949,<sup>16</sup> with provisions that are now obsolete, constitute much of the "permanent law" that has governed US agricultural policy. Later Farm Bills, with significant changes, suspended application of the 1938 and 1949 laws. The US Congress has enacted a major Farm Bill every few years (for example, 1985, 1990, 1996, 2002, 2008, with another expected in 2013).<sup>17</sup> These federal Farm Bills, supplemented by other legislation, establish policy for agriculture and related areas (for example, rural development) until their provisions expire.<sup>18</sup> USDA agencies implement most federal farm programs; the Farm Service Agency and the Natural Resources Conservation Service play major roles.

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<sup>12</sup> NRCS, USDA & CSSM, Iowa State University, Summary Report: 2007 National Resources Inventory, at 6, 44 (2009).

<sup>13</sup> USDA, Press Release, USDA Announces Final Call for 2012 Census of Agriculture (No. 0088.13, 6 May 2013). The first census was in 1840, and the census "is the only source of consistent and comprehensive agricultural data for every state and county in the nation." *Id.*

<sup>14</sup> NASS, USDA, 2007 Census of Agriculture, United States Summary and State Data, vol. 1, Table 1, at 7 (AC-07-A-51, 2009).

<sup>15</sup> ERS, U.S. and State Farm Income and Wealth Statistics, <http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx#27396>. The 2012 estimates were forecast on 11 February 2013.

<sup>16</sup> Pub. L. 75-430, 52 Stat. 31 (1938); Pub. L. 80-897; 62 Stat. 1247 (1948).

<sup>17</sup> For more information on US farm legislation, see the resources provided by the USDA Economic Research Service, <http://www.ers.usda.gov>.

<sup>18</sup> If provisions of Farm Bills, enacted for limited durations of about five years, expire, "the essentially mothballed permanent law policies" would resume. Jim Monke et al., Expiration and Extension of the 2008 Farm Bill, at 8 (CRS R42442, 2013). Congress is unlikely to allow resumption of permanent law enacted for a bygone era.

The US Congress did not enact a new Farm Bill by 30 September 2012, the end of the federal fiscal year, when authority under the 2008 Farm Bill for some programs and their funding expired. In December 2012, Congress extended most, but not all, major provisions of the 2008 Farm Bill through 30 September 2013 or (for farm commodity programs) through the end of the 2013 crop year.<sup>19</sup>

In Summer 2013, the US Senate and House of Representatives negotiated new agricultural legislation.<sup>20</sup> By late July, Congress had not enacted a new Farm Bill. It seems likely, however, that farm support under the 2013 Farm Bill will focus on disaster assistance (crop insurance), some other commodity support provisions will be repealed, and some environmental programs will be amended or consolidated.

## **B. Effect of US Subsidies on the Environment**

US Farm Bills have authorized support for producers through programs such as commodity support (for example, direct payments, counter cyclical payments, average crop revenue election), loans, and disaster assistance. Since 1985, Farm Bills have also emphasized conservation and the environment. Conservation programs are designed to encourage agricultural practices that protect the environment. Some commodity support provisions under recent Farm Bills, however, have faced criticism for their environmental impact.

### **1. Commodity Support**

One criticism of US support for agriculture is that Farm Bill programs, especially subsidies that support field crops, have encouraged farmers to produce intensively, resulting in "large-scale monoculture megafarms."<sup>21</sup> These megafarms, it is argued, affect water quality, degrade soil, decrease biodiversity and habitat, cause air pollution, and contribute to climate change.<sup>22</sup> Others have noted that commodity support has encouraged adoption of industrial-scale agriculture and has thereby led to a "dramatic loss of agrobiodiversity," both in food crops and livestock, that may threaten food supplies.<sup>23</sup>

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<sup>19</sup> American Taxpayer Relief Act of 2012, Pub. L. 112-240, 126 Stat. 2313, §§ 701-702. For details, see Monke et al., *supra* note 18. A Continuing Resolution, enacted in September 2012, had authorized continued funding for discretionary programs (those that receive funding from congressional appropriations) until 27 March 2013. Joint Resolution -- Making continuing appropriations for fiscal year 2013, and for other purposes, Pub. L. 112-175, 126 Stat. 1313 (2012). The Continuing Resolution did not apply to programs that received their permanent program authority and mandatory funding in the 2008 Farm Bill.

<sup>20</sup> The House Bill is the Federal Agriculture Reform and Risk Management Act of 2013, H.R. 1947; the Senate Bill is the Agriculture Reform, Food and Jobs Act of 2013, S. 954.

<sup>21</sup> William S. Eubanks II, *The Sustainable Farm Bill: A Proposal for Permanent Environmental Change*, 39 Environmental Law Reporter News and Analysis 10493, 10493 (2009). Most commodity payments are associated with corn, soybeans, wheat, rice, and cotton. *Id.* at 10497.

<sup>22</sup> *Id.* at 10498-10504. In terms of water, for example, chemical fertilizers have environmental consequences, sediments pollute water bodies, pesticides may contaminate water, and livestock manure is a significant pollutant.

<sup>23</sup> E.g., Carmen G. Gonzalez, *Climate Change, Food Security, and Agrobiodiversity: Toward a Just, Resilient, and Sustainable Food System*, 22 Fordham Environmental Law Review 493, 495 (2011).

The effect of Farm Bill support extends beyond intensive crop production and may also encourage conversion of grassland to cropland. Grassland includes land for hay, pasture, and range; some is suitable for cultivation, but grassland provides wildlife habitat and offers environmental benefits. Much native grassland in the US is in the Prairie Pothole Region of the Northern Plains, a region with critical habitat for migratory birds and for half of duck production in North America.<sup>24</sup>

A government report published in 2007 concluded that federal farm program payments were a significant factor in farmers' decisions to convert grassland to cropland.<sup>25</sup> Interestingly, conservation compliance (discussed below), which applies to highly erodible land, does not prevent conversion of grassland, because much grassland is not highly erodible.<sup>26</sup> More recently, USDA analyzed the role of selected support programs in conversion of grassland to cropland between 1997 and 2007. The study concluded that disaster assistance, crop insurance, and marketing loans (in that order of significance) "increased land in cultivated crops by ... roughly 2.9 percent of cultivated cropland acreage."<sup>27</sup>

To protect grasslands, the 2008 Farm Bill added a "sodsaver" provision. A farmer who produces crops on over five acres of native sod, newly tilled to produce an annual crop, is ineligible for certain federal crop and disaster insurance benefits for the first five years of cultivation.<sup>28</sup> In the vulnerable Prairie Pothole Region, state governors must elect to implement this provision, but no governor had opted in by June 2011. If implemented, the sodsaver provisions are likely to have only a "modest effect" on land-use decisions.<sup>29</sup>

## 2. Conservation Measures

### *a. Environmental Compliance*

Conservation (environmental) compliance, introduced in 1985, protects both the environment and the long-term productivity of US farmland. Producers who receive payments under federal farm legislation (including commodity support and conservation payments) must implement measures to conserve highly erodible land and to protect wetlands from conversion. Producers who fail to comply normally lose federal farm program payments for all commodities and on all land farmed by the producer. Conservation compliance is

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<sup>24</sup> Roger Claassen et al., *Grassland to Cropland Conversion in the Northern Plains*, at iv, 15 (ERS, USDA, ERR 120, 2011) Much of the land enrolled in the Conservation Reserve Program, especially in the Northern Plains region, is grassland. *Id.* at 5, 46.

<sup>25</sup> GAO, *Farm Program Payments Are an Important Factor in Landowners' Decisions to Convert Grassland to Cropland*, at 20 (GAO-07-1054, 2007) (analyzing data from South Dakota). Farmers' decisions, of course, also depend on other factors, including higher crop prices, use of genetically modified crop varieties that tolerate drought, and "advances in crop production technology."

<sup>26</sup> *Id.* at 26.

<sup>27</sup> Claassen et al., *supra* note 24, at v (analyzing data in counties in North Dakota and South Dakota). USDA economists focused on these three programs because, unlike decoupled commodity programs, they depend on current production.

<sup>28</sup> 7 UCS §§ 1508(o), 7333(a). Regulations define native sod. 7 CFR §§ 407.9 & 457.8.

<sup>29</sup> Claassen et al., *supra* note 24, at iv-v, 47. Sodsaver applies only in Iowa, Minnesota, Montana, North Dakota, and South Dakota.

voluntary, because farmers need not comply if they do not receive federal farm payments.<sup>30</sup> For many farmers, however, those payments are significant.<sup>31</sup>

Conservation compliance is designed to keep highly erodible land in production, to protect soil productivity, and to reduce off-site damage (for example, water pollution) from soil erosion. To be eligible for farm program support, the producer who cultivates highly erodible land must apply a conservation plan using approved conservation systems.<sup>32</sup> These systems must be technically and economically feasible, based on local conditions, and cost-effective; they must not cause undue economic hardship to producers. Many approved systems are inexpensive.<sup>33</sup> These measures protect farmland, and erosion from highly erodible land has declined in recent years.<sup>34</sup>

Environmental compliance also protects wetlands. For decades, government policy encouraged and supported drainage and clearing of wetlands for cultivation, and nearly half of US wetlands have been drained, primarily for agricultural use.<sup>35</sup> To protect wetlands from further loss, the "swampbuster" provision makes producers ineligible for certain federal farm program benefits if they produce commodities on converted wetlands after 1985 or convert wetlands for crop production after 1990.<sup>36</sup> USDA estimated that this provision protects between 1.5 and 3.3 million acres of wetlands vulnerable to conversion.<sup>37</sup>

Environmental compliance offers significant protection to the rural land and the environment. If direct payments and other commodity support programs are replaced with subsidized federal disaster insurance, many producers would have less incentive for environmental compliance.<sup>38</sup> An authoritative organization recommended strongly that conservation

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<sup>30</sup> For a more extensive discussion of federal conservation programs (from which this summary is adapted), see Margaret Rosso Grossman, *Farmland and Food Security: Protecting Agricultural Land in the United States*, at 233-271, in Otto Hospes & Irene Hadiprayitno, eds., *Governing food security: Laws, politics and the right to food* (2010).

<sup>31</sup> In 2009, about 37 percent of farms received federal farm payments, with the majority of commodity payments (74 percent) going to commercial farms. Farms with sales of \$1 million or more received 23 percent of commodity payments. T. Kirk White & Robert A. Hoppe, *Changing Farm Structure and the Distribution of Farm Payments and Federal Crop Insurance*, at 11, 22 (ERS, USDA, EIB 91, 2012).

<sup>32</sup> 16 USC § 3811(a); regulations at 7 CFR pt. 12. Requirements apply to a producer "who in any crop year produces an agricultural commodity on a field on which highly erodible land is predominate."

<sup>33</sup> Common practices include conservation tillage (at least 30 percent of residue remains on the soil surface at planting time), seasonal crop residue management (residue remains; land is tilled before planting), and conservation cropping (e.g., cover crops for part of the season). Roger Claassen et al., *Environmental Compliance in U.S. Agricultural Policy: Past Performance and Future Potential*, at 19-21 (ERS, USDA, AER 832, 2004).

<sup>34</sup> NRCS, USDA, 2007 National Resources Inventory, *Soil Erosion on Cropland*, at 5-6 (2010).

<sup>35</sup> See George A. Pavelis, ed., *Farm Drainage in the United States: History, Status, and Prospects*, at 2 (ERS, USDA, Misc. Pub. 1455, 1987). In 1977, a presidential order directed federal agencies to "minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." Jimmy Carter, Executive Order No. 11,990, 42 Fed. Reg. 26,961 (24 May 1977).

<sup>36</sup> 16 USC § 3821; regulations at 7 CFR pt. 12.

<sup>37</sup> Claassen et al., *supra* note 33, at 22-24. Most of the 92 million acres of wetlands potentially subject to swampbuster are less vulnerable because they are not adjacent to cropland or cannot be converted to cropland profitably. Other laws protect wetlands, including CWA § 404, 33 USC § 1344.

<sup>38</sup> Roger Claassen, *The Future of Environmental Compliance Incentives in U.S. Agriculture*, at 5 (ERS, USDA, EIB 94, 2012).

compliance, which "discourages the adverse use of farmland," be a requirement of any new "revenue assurance program" enacted by Congress in the next Farm Bill.<sup>39</sup>

*b. Voluntary programs*

US agricultural legislation has also included financial and technical incentives for conservation, as well as voluntary programs that support conservation practices. Since 1985, Farm Bills have supported land retirement and encouraged conservation practices on working land. Because the 2013 Farm Bill may amend and consolidate conservation programs, this Report mentions programs authorized by the 2008 Farm Bill only briefly.

The Conservation Reserve Program retires environmentally sensitive cropland from production.<sup>40</sup> In exchange for annual rental payments, landowners, operators, or tenants enter 10- to 15-year contracts with the federal government. They retire eligible land from agricultural use, implement an approved conservation plan, and plant approved vegetative cover. The federal government offers technical assistance and shares the cost of establishing conservation practices required by contract.<sup>41</sup> A smaller Wetlands Reserve Program protects farmed or converted wetlands through permanent or 30-year easements, restoration cost-share agreements, or both.<sup>42</sup>

USDA conservation programs for working lands help eligible producers to implement conservation measures that protect the environment.<sup>43</sup> The Environmental Quality Incentives Program (EQIP)<sup>44</sup> promotes good environmental practices and helps producers to comply with regulatory requirements concerning soil, water, and air quality and to protect wildlife habitat and conserve water. By contract, producers agree to implement conservation practices under an EQIP conservation plan, in exchange for payments for income foregone and for costs of implementation of conservation practices and installation of conservation structures. The Conservation Stewardship Program (CSP),<sup>45</sup> a voluntary payment-for-performance program, encourages farmers to improve, maintain, and manage current conservation

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<sup>39</sup> The Chicago Council on Global Affairs, U.S. Agriculture and Nutrition Policy Statement: Transforming American Food and Agriculture Policy, at 11-12 (Catherine Bertini et al., co-chairs, 2012). See also Craig Cox & Soren Rundquist, *Going, Going, Gone! Millions of Acres of Wetlands and Fragile Land Go Under the Plow* (Environmental Working Group, 2013) (attributing losses between 2008-2012 to high crop prices and federal subsidies, especially subsidized crop insurance).

<sup>40</sup> 16 USC §§ 3831-3835a; regulations at 7 CFR part 1410.

<sup>41</sup> As of 30 April 2013, 27 million acres on 390,000 farms were enrolled in CRP, with average rental payments of about \$61 per acre. FSA, CRP Status -- End of April 2013, [http://www.fsa.usda.gov/Internet/FSA\\_File/april2013onepager.pdf](http://www.fsa.usda.gov/Internet/FSA_File/april2013onepager.pdf). The 45th General Sign-Up was 20 May to 14 June 2013, and USDA accepted 1.7 million acres into the CRP. USDA, Press Release, USDA Announces Results for 45th Conservation Reserve Program General Sign-Up (No. 0149.13, 22 July 2013).

<sup>42</sup> 16 USC §§ 3837-3837f; regulations at 7 CFR part 1467. Over 2.3 million acres are enrolled. NRCS, Wetlands Reserve Program, <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/wetlands/>

<sup>43</sup> Other voluntary conservation programs under the 2008 Farm Bill include the Grasslands Reserve Program, 16 USC §§ 3838n-3838q; regulations at 7 CFR part 1415; the Wildlife Habitat Incentives Program, 16 USC § 3839bb-1; regulations at 7 CFR part 636; the Farmland Protection Program, 16 USC §§ 3838h-3838i; regulations at 7 CFR part 149 (providing matching funds for purchase of conservation easements on privately-owned productive farmland).

<sup>44</sup> 16 USC §§ 3839aa-3839aa-9; regulations at 7 CFR part 1466. Environmental practices related to livestock production receive 60 percent of EQIP funding.

<sup>45</sup> 16 USC §§ 3838d-3838g; regulations at 7 CFR part 1470.

activities and to undertake additional conservation practices. Producers who qualify for enrollment enter stewardship contracts, which require implementation of a conservation stewardship plan on their whole farming operation. Annual payments reflect the value of environmental benefits from their conservation practices.<sup>46</sup>

Farm Bill conservation programs protect the soil, air, and water. But in addition, as the USDA noted, "[a]griculture could play a prominent role in U.S. efforts to address climate change if farms and ranches undertake activities that reduce greenhouse gas ... emissions or take greenhouse gases out of the atmosphere."<sup>47</sup> In 2011, agriculture contributed eight percent of US greenhouse gas emissions, especially methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), but some agricultural land uses helped to sequester carbon.<sup>48</sup> USDA conservation programs encourage and support sustainable practices in both crop and livestock production that help to mitigate climate change and sequester carbon. Indeed, a federal report indicated that both the Conservation Reserve Program and EQIP help to mitigate the emission of greenhouse gases.<sup>49</sup> Environmental practices like conservation tillage and careful nutrient management can reduce N<sub>2</sub>O emissions; improved management of livestock and manure can reduce CH<sub>4</sub> emissions. Federal law offers financial incentives for adoption of improved technologies (for example, methane recovery). Agricultural and forest lands sequester carbon, taking greenhouse gases out of the atmosphere and offsetting emissions. USDA programs that retire land, protect wetlands, and preserve grasslands encourage sequestration of carbon, as do programs that encourage conservation practices (for example, no till, windbreaks) on working land.<sup>50</sup>

## C. Traditional Farms and Industrially-Organized Units

### 1. Trend toward Intensification

In the US, large farms are critical for agricultural production, and farming has intensified in recent decades.<sup>51</sup> The average farm size decreased between 1990 and 2010, from 460 to 418 acres,<sup>52</sup> and many farms are small life-style or retirement farms that produce little agricultural income. Nonetheless, USDA research found that between 1982 and 2007, production "shifted

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<sup>46</sup> See NRCS, Conservation Stewardship Program, <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp/>.

<sup>47</sup> John Horowitz & Jessica Gottlieb, *The Role of Agriculture in Reducing Greenhouse Gas Emissions*, at 1 (ERS, USDA, EB 15, 2010).

<sup>48</sup> EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011* (EPA 430-R-13-001, 2013) (providing detailed analysis). Land use and forestry offset 14 percent of 2011 GHG emissions.

<sup>49</sup> Estimates indicate that the CRP mitigated 57.14 TgCO<sub>2</sub>e in 2010 and that practices under EQIP mitigated 6.3 TgCO<sub>2</sub>e in 2010. Estimates for 2015 are 53 TgCO<sub>2</sub>e for CRP and 10.2 TgCO<sub>2</sub>e for EQIP. US Department of State, *U.S. Climate Action Report 2010*, at 72 (2010). TgCO<sub>2</sub>e refers to teragrams of CO<sub>2</sub> equivalent; a teragram is 1 million metric tons.

<sup>50</sup> See Renée Johnson, *Climate Change: The Role of the U.S. Agriculture Sector*, at 7, 9, 18 (CRS RL33898, 2009). See generally Mary Jane Angelo, *Corn, Carbon, and Conservation: Rethinking U.S. Agricultural Policy in a Changing Global Environment*, 17 *George Mason Law Review* 593 (2010).

<sup>51</sup> Federal farm policies in the 1970s focused on increased efficiency and higher output, farming "from fencerow to fencerow." See Robert W. Adler, *Balancing Compassion and Risk in Climate Adaptation: U.S. Water, Drought, and Agricultural Law*, 64 *Florida Law Review* 201, 260 (2012). See Susan A. Schneider, *Reconsidering the Industrialization of Agriculture*, 26 *Journal of Environmental Law and Litigation* 19 (2011).

<sup>52</sup> US Census Bureau, *Statistical Abstract of the United States: 2012*, Table 824, at 536 (2012).

to larger farms that are more likely to be profitable, better able to adopt new technologies, and more likely to use production or marketing contracts."<sup>53</sup> In 1991, farms that produced less than \$250,000 represented 36 percent of total production; in 2009, only 16 percent. Also in 1991, farms that produced over \$1 million were 21 percent of total production; in 2009, 39 percent.<sup>54</sup>

For purposes of research and reporting, the Economic Research Service of the USDA developed a farm typology. ERS revised its typology in April 2013 to recognize inflation in commodity prices and the shift in production to larger farms.<sup>55</sup> The ERS now defines farm types by gross cash farm income (GCFI), instead of gross farm sales. This change includes more types of farm income (for example, timber sales, outdoor recreation) and allows more accurate estimation of income from contracts for production of livestock (hogs and poultry).

The revised typology classifies some small family farms with GCFI less than \$350,000 as retirement farms or off-farm occupation farms. Other small farming-occupation farms are low-sales (GCFI less than \$150,000) or moderate-sales (GCFI between \$150,000 and \$349,999). Midsize family farms (a new category) have GCFI between \$350,000 and \$999,999. The typology classifies large-scale family farms, with GCFI of \$1 million or more, as either large farms (\$1 million to \$4,999,999) and very large farms (\$5 million or more). Nonfamily farms have no sales criteria.<sup>56</sup>

## 2. Legal Distinctions between Farm Sizes

In general, environmental and other laws that govern agricultural enterprises apply regardless of size. In a few instances, however, the applicability of environmental regulations depends on the size of the operation or the level of emissions.

For example, Environmental Protection Agency (EPA) regulations under the Clean Air Act impose requirements for mandatory reporting of greenhouse gas emissions on the basis of emission levels. Livestock facilities with manure management systems must report if their combined CH<sub>4</sub> and N<sub>2</sub>O emissions are equivalent to 25,000 metric tons CO<sub>2</sub>e per year. The EPA calculated that reporting would be required for beef facilities with an average annual population of more than 29,300 animals; dairy, 3,200; swine, 34,100.<sup>57</sup> The EPA cannot require reporting under this regulation, however, because Congress has prohibited the expenditure of funds to require reporting from livestock facilities.<sup>58</sup> Similarly, the Clean Water Act requires permits for concentrated animal feeding operations, based on size and discharge. These CWA requirements are discussed below.

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<sup>53</sup> Erik J. O'Donoghue et al., *The Changing Organization of U.S. Farming*, at 12 (ERS, USDA, EIB 88, 2011).

<sup>54</sup> White & Hoppe, *supra* note 31, at 17.

<sup>55</sup> Robert A. Hoppe & James M. MacDonald, *Updating the ERS Farm Typology* (ERS, USDA, EIB 110, 2013). The National Agricultural Statistics Service uses a slightly different farm typology. NASS, *supra* note 14, Table 64, at 234-61.

<sup>56</sup> A family farm is "any farm where the majority of the business is owned by the operator and individuals related to the operator." Fewer than 50,000 of 2.193 million farms are nonfamily farms. Hoppe & MacDonald, *supra* note 55, at iii-iv, 10.

<sup>57</sup> 40 CFR part 98, subpart JJ, §§ 98.360-98.368 & Table JJ-1.

<sup>58</sup> See, EPA, Subpart JJ -- Manure Management Rule Information, <http://www.epa.gov/ghgreporting/reporters/subpart/jj.html>

## IV. Environmental Rules for Agricultural Production

In the US, as in the EU, farming depends on healthy soil, water, and air for production of crops and livestock. But agriculture itself, especially intensive production, is a significant source of pollution. Nutrients and chemicals from crop production reach surface and ground waters. Indeed, a "dead zone" (a low-oxygen area), sometimes as large as 8,500 square miles, in the Gulf of Mexico at the mouth of the Mississippi River is due, in large part, to nitrogen and phosphorus from agricultural runoff.<sup>59</sup> Wastes from intensive livestock production cause water pollution, and emissions of pollutants and odors result in air pollution.

US environmental laws have not been entirely effective in regulating pollution from many agricultural activities. Though the polluter pays principle suggests that agriculture should be subject to environmental regulation like other industries,<sup>60</sup> agriculture is exempt from some environmental requirements that apply to other industries.<sup>61</sup> In some instances, statutes provide explicit exemptions for agriculture. In others, the nature of agricultural pollution, which often results from diffuse land uses, makes regulation difficult.

### A. Clean Water Act

The Clean Water Act (CWA)<sup>62</sup> require permits for point sources of water pollution under the National Pollutant Discharge Elimination System.<sup>63</sup> The CWA defines point sources broadly. It includes a "concentrated animal feeding operation" (CAFO) as a point source, but excludes "agricultural stormwater discharges and return flows from irrigated agriculture."<sup>64</sup> Moreover the CWA prohibits requirement of an NPDES permit for "discharges composed entirely of return flows from irrigated agriculture."<sup>65</sup> Thus, the CWA does not regulate these discharges from arable farming that result in water pollution.

EPA regulations for CAFOs under the NPDES system include national effluent limitation guidelines and standards and permit requirements.<sup>66</sup> CAFO regulations have been controversial, and appellate court decisions vacated portions of EPA regulations promulgated

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<sup>59</sup> *What Causes Ocean "Dead Zones"?*, Scientific American, 25 September 2012, <http://www.scientificamerican.com/article.cfm?id=ocean-dead-zones>.

<sup>60</sup> Margaret Rosso Grossman, *Agriculture and the Polluter Pays Principle: An Introduction*, 59 *Oklahoma Law Review* 1, 42 (2006) [hereinafter *Polluter Pays Introduction*]. See generally Margaret Rosso Grossman, ed., *Agriculture and the Polluter Pays Principle* (2009) [hereinafter *Agriculture*].

<sup>61</sup> See Susan A. Schneider, *A Reconsideration of Agricultural Law: A Call for the Law of Food, Farming, and Sustainability*, 34 *William & Mary Environmental Law & Policy Review* 935, 947-48 (2010) (discussing environmental exemptions for farmers). See also J.B. Ruhl, *Farms, Their Environmental Harms and Environmental Law*, 27 *Ecology Law Quarterly* 263 (2000). Some laws, of course, do not exempt farmers. For example, farmers, like others, must follow label instructions on pesticides and herbicides regulated under FIFRA, 7 USC §§ 136-136y.

<sup>62</sup> 33 USC §§ 1251-1387.

<sup>63</sup> 33 USC § 1342(a).

<sup>64</sup> 33 USC § 1362(14).

<sup>65</sup> 33 USC § 1342(l).

<sup>66</sup> 40 CFR part 412 (effluent limitation guidelines) & part 122 (permit requirements). An animal feeding operation is a lot or facility where animals are confined and fed for at least 45 days in a 12-month period and where vegetation is not present during the normal growing season. A CAFO is an animal feeding operation that is "defined as a Large CAFO or as a Medium CAFO ... or that is "designated as a CAFO" because it is a "significant contributor of pollutants." 40 CFR § 122.23(b).

in 2003 and amended in 2008.<sup>67</sup> Current EPA permit regulations, amended to comply with court orders, state that "a CAFO must not discharge unless the discharge is authorized by an NPDES permit," and the CAFO must have the permit at the time it discharges.<sup>68</sup> Discharges that result from land application of livestock wastes are also subject to the permit requirement.<sup>69</sup> EPA effluent limitation guidelines generally apply to Large CAFOs (1000 or more animal units); with some exceptions (for example, significant precipitation), the guidelines allow no discharge. Certain Large CAFOs must comply with best management practices for land application; they must develop and maintain a site-specific nutrient management plan that makes agronomic use of wastes and minimizes movement of nitrogen and phosphorus to surface waters.<sup>70</sup> Because the permit requirement applies only to CAFOs that discharge, relatively few livestock facilities actually require permits under EPA regulations.<sup>71</sup> Nonetheless, the EPA recently indicated plans to make CAFOs one of its six national enforcement initiatives for 2014-2016.<sup>72</sup>

The CWA governs facilities that are not point sources of water pollution as nonpoint sources. Livestock facilities not defined as CAFOs (that is, the majority of livestock operations) and runoff from cropland are nonpoint sources of pollution. The CWA requires state assessment, disclosure, and management programs for nonpoint pollution.<sup>73</sup> Little direct regulation, however, means that many emissions from agriculture escape regulation. Although a few states require farmers to apply measures to limit erosion, most states offer incentives to encourage best management practices, often identified or recommended by the federal EPA or USDA, to prevent nonpoint source pollution.<sup>74</sup>

Nonpoint pollution from agriculture may also be regulated by the CWA Total Maximum Daily Load (TMDL) provision, which applies to both point and nonpoint pollution.<sup>75</sup> Under this provision, states are to identify impaired water bodies and their maximum loads of pollutants. States must then implement plans to reduce pollutants from impaired water bodies. States have been reluctant to apply TMDLs to govern runoff from agriculture.

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<sup>67</sup> *Waterkeeper Alliance et al. v. EPA*, 300 F.3d 486 (2d Cir. 2005); *National Pork Producers Council et al. v. EPA*, 635 F.3d 738 (5th Cir. 2011). See EPA, CAFO Rule History, <http://cfpub.epa.gov/npdes/af/aforule.cfm>; EPA, 77 Fed. Reg. 44,494 (30 July 2012).

<sup>68</sup> 40 CFR § 122.23(d), (f). The CAFO owner or operator must apply for an individual permit or be covered under a general permit. Most states have authority to implement the NPDES permit program for CAFOs within their borders.

<sup>69</sup> 40 CFR § 122.23(e). When the CAFO owner or operator applies manure, litter, or process wastewater "in accordance with site specific nutrient management practices," a "precipitation-related discharge" is an agricultural stormwater discharge, not subject to regulation.

<sup>70</sup> 40 CFR § 412.4. The permit regulation, 40 CFR § 122.42, also requires implementation of a nutrient management plan that meets the standards of 40 CFR part 412.

<sup>71</sup> For estimates, see Claudia Copeland, *Animal Waste and Water Quality: EPA Regulation of Concentrated Animal Feeding Operations (CAFOs)* (CRS RL31851, 2010).

<sup>72</sup> EPA, Public Comment on EPA's National Enforcement Initiatives for Fiscal Years 2014-2016, 78 Fed. Reg. 5799 (28 January 2013). For a cooperative effort, see U.S. Department of Agriculture, U.S. Environmental Protection Agency, *Unified National Strategy for Animal Feeding Operations* (1999), <http://www.epa.gov/npdes/pubs/finafost.pdf>.

<sup>73</sup> 33 USC §§ 1288, 1329.

<sup>74</sup> Grossman, *Polluter Pays Introduction*, *supra* note 60, at 41.

<sup>75</sup> 33 USC § 1313(d). See *Pronsolino v. Nastri*, 291 F.2d 1123 (9th Cir. 2002) (holding that TMDLs apply to pollution from nonpoint sources).

State programs enacted under the Coastal Zone Management Act<sup>76</sup> may also impose requirements on agricultural operations. The law encourages states to preserve and protect coastal areas; one important goal is to protect coastal waters from nonpoint source pollution. States with federally-approved coastal zone management programs must have programs to control nonpoint pollution.<sup>77</sup> An EPA guidance document specifies management measures, and practices to achieve those measures, appropriate for agricultural sources, including erosion, nutrients, pesticides, irrigation, and livestock confinement or grazing.<sup>78</sup> State programs are subject to federal approval; one state program, for example, relies on best management practices for agriculture, with enforcement options for noncompliance.<sup>79</sup>

## B. Clean Air Act

Livestock facilities emit particulate matter, gases (including methane, a greenhouse gas), vapors, and odors from confinement buildings, manure storage facilities, and land application of waste. Air emissions from livestock facilities include pollutants (for example, particulate matter, a criteria pollutant) regulated by the federal Clean Air Act (CAA).<sup>80</sup> Major sources of regulated air pollutants must normally obtain operating permits, but few livestock facilities have been required to obtain permits, in part because calculating air emissions from livestock facilities is difficult.<sup>81</sup> In 2005, the EPA established a voluntary Air Compliance Agreement with livestock producers. Participating livestock farms (over 90 percent of the largest US operations),<sup>82</sup> who were considered to be in regulatory compliance during the study, helped to fund research on emissions data from animal confinement structures as well as manure storage and treatment units. A two-year study monitored 24 facilities in nine states.<sup>83</sup> Using data from the study, the EPA has developed emissions estimating methodologies.<sup>84</sup> In March 2012, the EPA published and requested comments on draft documents that developed methods for estimating emissions for broiler operations and for lagoons and basins at swine and dairy operations.<sup>85</sup> Livestock facilities will use the EPA's final emissions estimating

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<sup>76</sup> 16 USC §§ 1451-1466.

<sup>77</sup> 16 USC § 1455b.

<sup>78</sup> EPA, Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, chap. 2 (EPA 840-B-92-002, 1993)

<sup>79</sup> See, e.g., California's program approval and information about other approved programs, at NOAA, Coastal Nonpoint Program Approval Findings, [http://coastalmanagement.noaa.gov/nonpoint/pro\\_approve.html](http://coastalmanagement.noaa.gov/nonpoint/pro_approve.html).

<sup>80</sup> 42 USC §§ 7401-7671q. On the CAA and CAFOs, see J. Nicholas Hoover, *Can't You Smell That Smell? Clean Air Act Fixes for Factory Farm Air Pollution*, 6 *Stanford Journal of Animal Law & Policy* 1 (2013).

<sup>81</sup> Grossman, *Polluter Pays Introduction*, *supra* note 60, at 44-45.

<sup>82</sup> Claudia Copeland, *Air Quality Issues and Animal Agriculture: EPA's Air Compliance Agreement*, at 10 (CRS RL32947, 2012).

<sup>83</sup> See Environmental Integrity Project, *Hazardous Pollution from Factory Farms: An Analysis of EPA'S National Air Emissions Monitoring Study Data (2011)* (concluding that some CAFOs produce unsafe levels of particulates, ammonia, or hydrogen sulfide; recommending that the EPA require reporting of emissions and use of technology to reduce harmful emissions).

<sup>84</sup> EPA, Notice of Availability, 77 Fed. Reg. 14,716, 14,717 (13 March 2012). See also Perry Hagenstein et al. [including M.R. Grossman], *National Research Council, Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs* (2003).

<sup>85</sup> The documents are available at EPA, Agriculture -- Air Monitoring, Basic Information, <http://www.epa.gov/airquality/agmonitoring/basicinfo.html>. Each document, including appendices, is more than 2,000 pages. The comment period ended in June 2012. EPA, *supra* note 84, at 14,716.

methodologies to determine their obligations under the CAA and their reporting responsibilities under CERCLA and EPCRA.

### C. CERCLA and EPCRA

Several US environmental laws require facilities to report the "release" of certain hazardous substances into the environment. Both CERCLA (the Superfund law)<sup>86</sup> and EPCRA<sup>87</sup> require reporting of releases of hazardous substances, including hydrogen sulfide, ammonia and phosphorus.<sup>88</sup> Some releases from agriculture are exempt from reporting by statute. CERCLA does not include the "normal application of fertilizer" in its definition of release,<sup>89</sup> and EPCRA defines as hazardous chemicals neither substances used in routine agriculture operations nor fertilizer.<sup>90</sup> After a petition from industry and significant study, the EPA enacted an administrative exemption for air release of hazardous substances from animal waste. Under CERCLA, the EPA exempted from reporting "[r]eleases to the air of any hazardous substance from animal waste at farms."<sup>91</sup> Under EPCRA, the EPA exempted from reporting releases from animal waste at all farms, except those classified as Large CAFOs under the Clean Water Act.<sup>92</sup> These exemptions mean that relatively few farms must report emissions of hazardous substances.

### D. Endangered Species Act

The Endangered Species Act<sup>93</sup> applies to farmers, like other land users, and may require preservation of habitat for endangered species. Under the ESA, it is unlawful for any person to "take" an endangered species of fish or wildlife; the term "take" is defined as "harass, harm, pursue, hunt," and other actions.<sup>94</sup> Moreover, a regulatory definition states that "[h]arm in the definition of 'take' ... means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."<sup>95</sup> Thus, under the ESA and its regulations, the prohibition against taking may require preservation of habitat of an endangered species on private land, including agricultural land.<sup>96</sup>

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<sup>86</sup> Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC §§ 9601-9675.

<sup>87</sup> Emergency Planning and Community Right-to-Know Act, 42 USC §§ 11011-11050.

<sup>88</sup> Reportable quantities are 100 pounds/day of hydrogen sulfide and ammonia; 1 pound/day of phosphorus. See Claudia Copeland, *Animal Waste and Hazardous Substances: Current Laws and Legislative History*, at 2-3 (CRS RL33691, July 2012).

<sup>89</sup> 42 USC § 9601(22)(9)(D).

<sup>90</sup> 42 USC § 11021(e)(5).

<sup>91</sup> 40 CFR § 302.6. See EPA, *CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances From Animal Waste at Farms*, 73 Fed. Reg. 76,948 (18 December 2008).

<sup>92</sup> 40 CFR § 355.31.

<sup>93</sup> 16 USC §§1531-1544. See Ved P. Nanda, *Agriculture and the Polluter Pays Principle in the United States*, chap. 9, at 322, 349 in Grossman, ed., *Agriculture*, *supra* note 60.

<sup>94</sup> 16 USC §§ 1538(a)(1)(B), 1532(19). Another section of the ESA (§ 1536) requires federal agencies to protect endangered and threatened species.

<sup>95</sup> 50 CFR § 17.3.

<sup>96</sup> The US Supreme Court upheld the regulatory definition in *Babbitt v. Sweet Home Communities*, 515 US 687 (1995). A dissent stated that "[t]he Court's holding that the hunting and killing prohibition incidentally preserves habitat on private lands imposes unfairness to the point of financial ruin -- not

## V. Planning Provisions and Mandatory Licenses

### A. Zoning

Local governments in the US generally control the use of privately-owned land. States have authority to govern land use under their general police power, but only a few states have enacted state land-use plans. Instead, most states delegate zoning authority to counties and municipalities, which enact ordinances for their jurisdictions. Zoning often involves a comprehensive land-use plan, supplemented by a zoning map that identifies land-use districts, with the uses and densities permitted in the districts. Although rural land can be subject to zoning restrictions, the majority of rural land is not zoned. Farms and other activities are often free to choose any appropriate location, unless other limitations (see B.2.below) apply.

When rural land is zoned, the purpose is often to protect land for agriculture by identifying agricultural zones and restricting incompatible activities in those zones. To keep land in agricultural use, ordinances may impose exclusive agricultural zoning, which prevents development of agricultural land; area-based zoning, which sets density restrictions; cluster zoning, which allows development on a small parcel of farmland; or minimum lot size zoning.<sup>97</sup>

Some states have limited the authority of zoning officials to restrict agricultural activities. In Illinois, for example, a statute provides that county zoning authority may not be exercised to "impose regulations, eliminate uses, buildings, or structures, or require permits with respect to land used for agricultural purposes."<sup>98</sup> But Illinois counties may require agricultural buildings and structures to comply with building or set-back lines and may establish minimum lot sizes for residences on agricultural land. Other states have similar provisions.<sup>99</sup>

### B. Licenses, Certifications, and Permits

In general, US agricultural producers can operate freely, without securing a license required of other professionals (for example, lawyers, veterinarians, physicians, and many other occupations) under state law. In some situations, federal and state laws require registration or licenses for activities related to agriculture. For example, pesticide manufacturing facilities must be registered under FIFRA.<sup>100</sup> States require licenses for grain dealers, livestock dealers, and other businesses that buy or sell farm products.<sup>101</sup>

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just upon the rich, but upon the simplest farmer who finds his land conscripted to national zoological use." *Id.* at 714 (Scalia, J., dissenting).

<sup>97</sup> See generally Linda A. Malone, *Environmental Regulation of Land Use* §§ 6.28 to 6.32 (2009).

<sup>98</sup> 55 ILCS 5/5-12001. Agriculture, defined broadly, includes "the growing of farm crops, truck garden crops, animal and poultry husbandry, apiculture, aquaculture, dairying, floriculture, horticulture, nurseries, tree farms, sod farms, pasturage, viticulture, and wholesale greenhouses when such agricultural purposes constitute the principal activity on the land." This definition includes industrial agricultural operations, but excludes certain parcels of less than 5 acres.

<sup>99</sup> E.g., Iowa Code Ann. § 358A.2. A few states also protect some activities related to agriculture from zoning restrictions. See, e.g., Mass. Gen. Laws chap. 40A, § 3 (limiting regulation of agricultural activities).

<sup>100</sup> 7 USC §§ 136-136y (registration of establishments at § 136e).

<sup>101</sup> E.g., 225 ILCS 630 (grain dealers); 225 ILCS 645 (livestock dealers).

## 1. Certifications

Certifications play a role in US agriculture. Under the US Organic Food Production Act,<sup>102</sup> for example, certification ensures that products certified as organic meet stringent production standards. This Act established the National Organic Standards Board, which promulgated comprehensive national standards.<sup>103</sup> Under the certification program, agents accredited by the USDA ensure that producers meet statutory and regulatory requirements.

National Organic Program (NOP) standards prohibit the use of specified substances, methods (including genetic engineering), and ingredients in organic crop production and handling. Products labeled as organic may not use excluded methods,<sup>104</sup> and producers must follow an approved organic system plan and avoid unintentional contact with unapproved substances. Those who handle organic products must also "prevent the commingling of organic and nonorganic products and protect organic products from contact with prohibited substances."<sup>105</sup>

NOP standards also apply to organically-produced livestock and their products, which must come from animals "under continuous organic management from the last third of gestation or hatching."<sup>106</sup> Feed for livestock sold as organic must generally be produced organically, and the producer may not use animal drugs or hormones to promote growth.<sup>107</sup> Livestock living conditions must "accommodate the health and natural behavior of animals."<sup>108</sup>

A small farmer or handling operation, whose annual income from organic sales is \$5,000 or less, can sell products as organic without following all federal organic requirements. The small farmer must follow production, handling, and labeling requirements, but is exempt from certification and need not submit an organic system plan.<sup>109</sup> This exemption is significant in light of the number of small farms in the US.

## 2. Permits

Federal environmental laws require permits for some polluting activities. As the discussion above indicated, both the Clean Air Act and the Clean Water Act require some facilities that emit pollutants to operate under permits. Environmental statutes often authorize cooperative federalism, under which states may choose to meet federal requirements to issue and enforce permits in their own jurisdictions.

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<sup>102</sup> 7 USC §§ 6501-6523. Sales of organic food in 2012 were about \$27 billion. Catherine Greene & Robert Ebel, *Organic Farming Systems*, at 37, 38 in *Agricultural Resources and Environmental Indicators*, 2012 Edition (Craig Osteen et al., eds., ERS, USDA, EIB 98, 2012).

<sup>103</sup> 7 CFR part 205. State and private organic certification programs must be at least as strict as federal standards, 7 USC §§ 6506-6507, and some are stricter.

<sup>104</sup> 7 CFR §§ 205.101, 205.105. Labels include "100 percent organic" or "organic" (at least 95 percent organically produced ingredients) or "made with organic ingredients" (at least 70 percent).

<sup>105</sup> 7 CFR § 205.272(a).

<sup>106</sup> 7 USC § 6508; quotation from 7 CFR § 205.236. Exceptions apply to poultry (second day of life) and dairy (one year prior to production of milk products sold as organic).

<sup>107</sup> 7 CFR § 205.237.

<sup>108</sup> 7 CFR § 205.239.

<sup>109</sup> 7 USC § 6505(d); 7 CFR § 205.101. Small farmers' products cannot be used as organic ingredients for further processing.

State laws often impose additional permit requirements for agricultural activities that pose risks to the environment or have the potential to interfere with neighbors. Many states govern the location, construction, and operation of large livestock facilities. The majority of states (32, according to a 2002 study) require permits for construction or operation of livestock facilities, in addition to NPDES permits. Although state requirements vary significantly, some impose standards that are more strict than federal NPDES requirements.<sup>110</sup>

For example, the Illinois Livestock Management Facilities Act<sup>111</sup> recognizes the trend toward larger concentrations of animals (and their excrement) at livestock management facilities and their potential impact on neighbors and the environment. Therefore, it establishes criteria for the location of facilities to protect environmentally sensitive areas, avoid environmental damage, and control odors. Required setbacks are based on size. Large facilities (over 7000 animal units: for example, 7000 cattle, 17,500 swine over 55 pounds) must be located at least one-half mile from an occupied residence and one mile from a populated area. The county or its residents can request a public informational meetings for facilities serving 1000 or more animal units or those that will store waste in earthen lagoons. The law also sets standards for the design of earthen lagoons, concrete storage structures, and other waste handling structures. It requires inspection, registration, and certification of facilities. Facilities with 300 or more animal units must be supervised by a certified livestock manager.<sup>112</sup>

Waste management plans, required for facilities with 1000 or more animal units, must provide for application of livestock wastes at agronomic rates for nitrogen and phosphorus. Livestock sludge, removed periodically from the lagoon, must be tested for nutrient content, and its application must also meet soil nutrient requirements. Other restrictions on land application apply.<sup>113</sup>

## VI. Other Provisions

### A. Biosolids (Sewage Sludge)

The Clean Water Act authorizes the EPA to regulate sewage sludge.<sup>114</sup> Under EPA regulations, many requirements apply to those who prepare biosolids for application and those who operate surface disposal sites or incinerators. Biosolids that meet stringent standards for pollutants, pathogens, and attractiveness to vectors (insects, rodents) are considered "exceptional quality." Because exceptional quality sewage sludge is "considered comparable to standard fertilizer products," no specific requirements apply for land application.<sup>115</sup> If sewage sludge does not meet these standards, land appliers must follow regulatory retirements. For example, the amount of bulk sewage sludge applied to agricultural

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<sup>110</sup> Copeland, *supra* note 71, at 7-8 (referring to a 2002 EPA study).

<sup>111</sup> 510 ILCS 77. For an overview, see Illinois Department of Agriculture, The Livestock Management Facilities Program, <http://www.agr.state.il.us/Environment/LMFA/index.html>. See also the Iowa Animal Agriculture Compliance Act, Iowa Code, chap. 45; rules for Animal Feeding Operations, 567 Iowa Administrative Code, chap. 65.

<sup>112</sup> For regulations, see 8 Illinois Administrative Code part 900.

<sup>113</sup> *Id.*, subpart H: Waste Management Plan.

<sup>114</sup> 33 USC § 1345(d); regulations at 40 CFR part 503. Sewage sludge is "residue generated during the treatment of domestic sewage in a treatment works." 40 CFR § 503.9(w).

<sup>115</sup> EPA, Land Application of Sewage Sludge, at 5 (EPA/831-B-93-002b, 1994). See 40 CFR § 503.10.

or forest land must not exceed the agronomic rate for nitrogen or cumulative pollutant rates prescribed by regulation. Other restrictions apply, including prohibitions on application to flooded, frozen, or snow-covered land or to land less than 10 meters from US waters.<sup>116</sup> States and political subdivisions may impose additional or more stringent requirements for use of biosolids.<sup>117</sup>

## B. Nuisance

Agricultural production, especially intensive farming, may interfere with the use and enjoyment of other land. Odors from animals and manure, fertilizers, dust, insect, application of pesticides and herbicides, and noise may raise claims of nuisance even in rural areas. Nuisance law has offered a remedy when agricultural activities interfere unreasonably with a neighbor's use and enjoyment of land, injure life or health, or interfere with public rights.<sup>118</sup> Private nuisance results from interference with the plaintiff's use and enjoyment of land; it is "a nontrespassory invasion of another's interest in the private use and enjoyment of land."<sup>119</sup> In contrast, a public nuisance interferes with land use of a large number of plaintiffs or with public rights; it is therefore "an unreasonable interference with a right common to the general public."<sup>120</sup> Nuisance is an intentional tort if defendant's use of land caused plaintiff to suffer substantial and unreasonable interference with use of property, and defendant had knowledge ("civil intent") that its activities would injure plaintiffs. In contrast, negligent nuisance requires proof that defendant's activities on its own land (rather than the interference with plaintiff) were unreasonable.<sup>121</sup> Remedies in nuisance suits include injunctions against specific activities and awards of monetary damages.

Nuisance is generally a matter of state common law and focuses on reasonable use of land in light of the circumstances. Although both farmers and their neighbors have the right to reasonable use and enjoyment of their property, since the late 1970s, every US state has enacted right to farm legislation.<sup>122</sup> These laws, originally intended to keep farmland in agricultural use, protect farmers from nuisance litigation resulting from changes in surrounding land uses. State statutes impose different requirements for protection. In the

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<sup>116</sup> 40 CFR §§ 503.12-503.14. Agricultural land is "land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture." 40 CFR § 503.11(a). Biosolids supplied in bags or other containers must meet standards for exceptional quality, and those who apply bagged sludge must follow the instructions provided with the product. EPA, *supra* note 115, at 6.

<sup>117</sup> 40 CFR § 503.5.

<sup>118</sup> This brief explanation of nuisance is adapted from Margaret Rosso Grossman, *Genetically Modified Crops in the United States: Federal Regulation and State Tort Liability*, 5 Environmental Law Review 86, 99-101 (2003).

<sup>119</sup> Restatement (Second) of Torts § 821D (1979).

<sup>120</sup> *Id.* § 821B. Public nuisance cases are normally filed by a government official or, less often, by a private plaintiff with an injury different in kind (a "special injury") from members of the general public.

<sup>121</sup> Zygmunt J.B. Plater et al., *Environmental Law and Policy: Nature, Law, and Society*, at 75 (4th ed., 2010).

<sup>122</sup> The State of North Dakota added a new type of right to farm law to its Constitution in 2013. Approved by voters, the provision prevents laws from interfering with farming practices: "The right of farmers and ranchers to engage in modern farming and ranching practices shall be forever guaranteed in this state. No law shall be enacted which abridges the right of farmers and ranchers to employ agricultural technology, modern livestock production and ranching practices." ND Constitution, art. XI, § 29.

typical statute, a farm that has operated for at least a year cannot become a private or public nuisance because of changed conditions in the surrounding area, typically when the plaintiff comes to the nuisance. Statutes may require that the farm not be a nuisance at the outset and that its operation not be negligent or improper. Some statutes discourage nuisance suits by providing that a defendant who prevails in the suit can collect costs and expenses, including reasonable attorney fees, from the plaintiff.<sup>123</sup> Right to farm laws have deterred nuisance suits against farm operations. They raise constitutional issues, however, and a few courts have found right-to-farm statutes unconstitutional.<sup>124</sup>

## VII. Conclusion

US agricultural producers, who farm millions of acres of land, provide food and fiber for citizens of the US and of the world. Agriculture relies on healthy soil, water, and air for production, and farmers are responsible for stewardship of their land to ensure continued productivity and to protect the environment. Nonetheless, some farm practices, especially from intensive agriculture, emit pollutants to the surrounding environment. Although the US has a sophisticated system of environmental laws, agriculture has been subject to fewer environmental restrictions than other industries, in part because some agricultural emissions are difficult to quantify. Some, but not all, US environmental laws exclude agriculture from requirements that apply to other industries or include less burdensome provisions for agriculture. Moreover, both federal and state laws have avoided regulation, relying instead on incentives, including financial and technical assistance, to encourage farmers to apply good environmental practices.

In recent years, however, the trend toward megafarms and intensive animal production has raised public awareness of the environmental effects of agriculture. In addition, research and technical advances will lead to more accurate measurement of emissions from farms, particularly livestock facilities. These developments may result in stricter regulation of agricultural producers and enforcement of existing standards on more agricultural operations.

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<sup>123</sup> See, e.g., the Illinois Farm Nuisance Suit Act, 740 ILCS 70. Not all right to farm statutes require a change in the use of surrounding land.

<sup>124</sup> See, e.g., *Bohrmann v. Board of Supervisors*, 584 N.W.2d 309 (Iowa 1998) (holding an Iowa right to farm law unconstitutional, because it interfered with a constitutionally-protected property right).