



December 12, 2016

Renata Hesse  
Acting Assistant Attorney General  
U.S. Department of Justice Antitrust Division  
950 Pennsylvania Avenue, N.W.  
Washington, D.C. 20530

Re: Proposed Bayer Takeover of Monsanto

Dear Acting Assistant Attorney General Hesse:

On behalf of the Natural Resources Defense Council (“NRDC”), we write to you today to express our opposition to the proposed takeover of the American multinational agrochemical and agricultural biotechnology corporation, the Monsanto Company (“Monsanto”), by the German chemical and pharmaceutical conglomerate, Bayer AG (“Bayer”). Because we believe such a combined company would substantially decrease competition and innovation, hurt farmers and consumers by increasing input costs and limiting choice, and reinforce the chemical intensive growing practices that harm our environment—in particular, the pollinators that support our global food system—we also request that the U.S. Department of Justice (the “Department”) seek to enjoin the proposed takeover.<sup>1</sup>

While, standing alone, a proposal for the takeover of the world’s largest producer of genetically modified seeds by the world’s second largest producer of pesticides is problematic, it is also part of a troubling trend of consolidation in the agricultural sector. In the past year, five of the “Big Six”<sup>2</sup> agrochemical/agricultural biotechnology companies introduced plans to combine with or acquire their competitors. In December 2015, the Dow Chemical Company (“Dow”) and DuPont announced a “merger of equals,”<sup>3</sup> which was followed in February by a \$43 billion bid from ChemChina, a Chinese state-owned chemical company, for the Swiss seeds and pesticides manufacturer, Syngenta.<sup>4</sup> Bayer’s announcement in September of this year that it has agreed to

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<sup>1</sup> While we understand that the Hart-Scott-Rodino Act premerger notification filing has likely not yet been filed for the proposed takeover, because the filing is expected soon, and such filings are not always publically announced, we write now with our concerns. Additionally, while the Federal Trade Commission (“FTC”) may instead be tasked with reviewing the proposed takeover, it is our understanding that the Department likely will review it given its past experience reviewing other Monsanto deals. See David McLaughlin, *Bayer, Monsanto Face Global Review as Farmer Options Shrink*, Bloomberg Markets (Sep. 14, 2016, 7:50 AM), available at <https://www.bloomberg.com/news/articles/2016-09-14/bayer-monsanto-confront-global-review-as-farmer-options-shrink>.

<sup>2</sup> The moniker “Big Six” in these industries commonly refers to BASF, Bayer AG, the Dow Chemical Company, DuPont, Monsanto, and Syngenta.

<sup>3</sup> Dow Chemical Company, *DuPont and Dow to Combine in Merger of Equals* (Dec. 11, 2015), available at <http://www.dow.com/en-us/news/press-releases/duPont-and-dow-to-combine-in-merger-of-equals>.

<sup>4</sup> Bloomberg News, *ChemChina Offers Over \$43 Billion for Syngenta* (Feb. 3, 2016, 1:01 AM), available at <http://www.bloomberg.com/news/articles/2016-02-03/chemchina-offers-to-purchase-syngenta-for-record-43-billion>.

purchase Monsanto for \$66 billion marks the third such merger proposal in a year—by far the largest, and possibly the most consequential.<sup>5</sup>

We know that the well-being of the environment and the well-being of farmers are fundamentally linked, and we believe that the likely effect of the proposed takeover on both would be devastating—especially with respect to bees and other critical pollinators that support our nation’s food supply. As these consequences go hand-in-hand with the significant antitrust issues the proposed takeover creates, we highlight the following major concerns:

## **I. The Proposed Takeover Will Substantially Decrease Competition and Innovation**

The Clayton Act, which the Department administers, prohibits corporate acquisitions where the effect “may be substantially to lessen competition,”<sup>6</sup> and indeed, in the agricultural sector, Bayer’s proposed takeover of Monsanto will do just that.

The first and most obvious anti-competitive effect is also the most straightforward—because Bayer and Monsanto either are, “or likely will become absent [a] merger, substantial head-to-head competitors,”<sup>7</sup> allowing a merger eliminates that competition. Although Bayer is generally viewed as a dominant player in pesticide manufacturing and Monsanto in genetically engineered seeds, each company operates in both markets. The U.S. cottonseed market provides an important example. There, Bayer already commands a 38.5% share of the market and Monsanto a similarly outsized 31.2% share—meaning a combined company would control nearly 70% of all cottonseed sold nationwide.<sup>8</sup> Although intuitively concerning, an independent antitrust review of the proposed takeover by two former Department attorneys (the “Konkurrenz Group”) also confirms that this level of market dominance is “unacceptably high by antitrust standards.”<sup>9</sup>

Bayer and Monsanto also fiercely compete in the pesticides market. Although Monsanto’s glyphosate-based “Roundup herbicides remain the largest crop protection brand globally,”<sup>10</sup> since the expiration of Monsanto’s glyphosate patents more than a decade ago, competitors,

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<sup>5</sup> Drew Harwell, *Bayer and Monsanto to Merge in Mega-Deal That Could Reshape World’s Food Supply*, The Washington Post (Sep. 14, 2016), available at <https://www.washingtonpost.com/news/business/wp/2016/09/14/bayer-and-monsanto-merge-in-mega-deal-aimed-at-domi-worlds-food-supply/>.

<sup>6</sup> 15 U.S.C. § 18.

<sup>7</sup> U.S. Dep’t of Justice and the Fed. Trade Comm’n, *Horizontal Merger Guidelines*, 3 (Aug. 19, 2010) [hereinafter “Horizontal Merger Guidelines”], available at <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>.

<sup>8</sup> Diane Bartz & Greg Roumeliotis, *Bayer’s Monsanto Acquisition to Face Politically Charged Scrutiny*, Reuters (Sep. 15, 2016, 10:53 AM), available at <http://www.reuters.com/article/us-monsanto-m-a-bayer-antitrust-idUSKCN11K2LG>.

<sup>9</sup> Maurice E. Stucke & Allen P. Grunes, *An Antitrust Review of a Bayer-Monsanto Merger*, Konkurrenz Group, 7 (Jul. 22, 2016) [hereinafter “Konkurrenz Antitrust Review”], available at <https://s3-us-west-2.amazonaws.com/sou-assets/Konkurrenz-findings-on-Bayer-Monsanto.pdf>.

<sup>10</sup> Monsanto, *Ideas Big Enough for a Growing World: 2015 Annual Report*, 17 (2015) [hereinafter “Monsanto 2015 Annual Report”], available at [http://www.monsanto.com/investors/documents/annual%20report/2015/2015\\_annual\\_report\\_fullweb.pdf](http://www.monsanto.com/investors/documents/annual%20report/2015/2015_annual_report_fullweb.pdf).

including Bayer, have introduced their own glyphosate-based products.<sup>11</sup> Moreover, with the dramatic increase in glyphosate-resistant weeds in the last decade,<sup>12</sup> Bayer’s glufosinate-based “LibertyLink” line of pesticides—tailored to and packaged with Bayer’s LibertyLink crop seed—appears poised to be the greatest competitor to Monsanto’s longstanding bestseller.<sup>13</sup> Indeed, Bayer’s pre-takeover-proposal promotional materials for its LibertyLink system describes glyphosate as has-been pesticide, noting that “more than 60 million acres of corn, cotton, soybeans and canola now hav[e] the LibertyLink trait, [which affords resistance to LibertyLink pesticides, and] it is anticipated that the number of acres will double across multiple crops in the next few years.”<sup>14</sup>

Accordingly, a proposed takeover not only eliminates immediate competition between these two agricultural titans, but future competition as well. It is clear that each has the “capabilities that are likely to lead it to develop new products in the future that would capture substantial revenues from the other,”<sup>15</sup> as well as the intent to do so absent a successful merger. Indeed, in its 2015 Annual Report, Bayer is explicit about its vision for the “expansion of [its] Seeds business,” which includes “strengthen[ing] [its] positions in [its] established crops – cotton, oilseed rape / canola, rice and vegetables” and “establish[ing] competitive positions in soybeans and wheat.”<sup>16</sup> While Bayer does cite “acquisitions” as one strategy to achieve these goals,<sup>17</sup> its ambitions are unlikely to be dampened by a failure to acquire Monsanto. Allowing the acquisition, therefore, eliminates that prospective competition.

Importantly, as these pressures for future competition diminish, so too does innovation. In the modern agricultural inputs industry, having a competitive advantage tomorrow means investing heavily in research and development (“R&D”) today—a capability now further and further out of reach for small and mid-size firms. A U.S. Department of Agriculture (“USDA”) study found that in 2010, “eight seed-biotechnology companies accounted for 76 percent of all R&D spending” in seeds, and “[i]n agricultural chemicals, five companies . . . were responsible for over 74 percent of the R&D.”<sup>18</sup> With the cost of bringing a pesticide or plant biotechnology trait

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<sup>11</sup> See, e.g., Amazon, “Bayer Garden Super Strength Glyphosate (18 Sachets),” (last visited Dec. 5, 2016), available at <https://www.amazon.co.uk/Bayer-Garden-Strength-Glyphosate-Sachets/dp/B004DCSJHM>.

<sup>12</sup> See Charles M. Benbrook, *Trends in Glyphosate Herbicide Use in the United States and Globally*, 28:3 Environmental Sciences Europe, Fig 2c (Feb. 2, 2016) [hereinafter “Glyphosate Use Study”], available at <https://enveurope.springeropen.com/articles/10.1186/s12302-016-0070-0>.

<sup>13</sup> *Konkurrenz Antitrust Review* at 6 (stating “Bayer’s glufosinate-based herbicide, Liberty, and its glufosinate-tolerant traits sold under the brand, ‘Liberty Link,’ are currently the most direct competitors to Monsanto’s Roundup and Roundup Ready seed.”).

<sup>14</sup> Bayer, *Today’s Real World Solution*, Liberty Link System Brochure (2015), available at <http://www.bayercropscience.us.com/~media/Bayer%20CropScience/Country-United-States-Internet/Documents/Products/Traits/LibertyLink/LibertyLink-System-Brochure.ashx> (stating “Twentieth-century weed control is no longer effective. Glyphosate was a game changer 20 years ago, but we can no longer spray the same chemistry multiple times on the same acre, year in and year out, and expect the same results.”).

<sup>15</sup> Horizontal Merger Guidelines at 23.

<sup>16</sup> Bayer, *Annual Report 2015*, 59 (Feb. 25, 2016) [hereinafter “Bayer 2015 Annual Report”], available at <http://www.annualreport2015.bayer.com/servicepages/filelibrary/files/collection.php>.

<sup>17</sup> *Id.*

<sup>18</sup> Fuglie et al., *Rising Concentration in Agricultural Input Industries Influences New Farm Technologies*, USDA Economic Research Service, 4-5 (Dec. 2012) [hereinafter “USDA Agricultural Concentration Report”], available at [https://www.researchgate.net/publication/235341940\\_Rising\\_Concentration\\_in\\_Agricultural\\_Input\\_Industries\\_Influences\\_New\\_Farm\\_Technologies](https://www.researchgate.net/publication/235341940_Rising_Concentration_in_Agricultural_Input_Industries_Influences_New_Farm_Technologies).

to market now commonly in the hundreds of millions of dollars,<sup>19</sup> R&D has become increasingly dominated by the Big Six. Including all of the proposed mergers, these six companies now wish to condense to four—eliminating competing “parallel path” R&D departments that are critical to driving innovation.<sup>20</sup> This is particularly significant in an industry where the development of new products is expensive and the “probability of commercial success is relatively low”—discouraging investment in innovation absent strong competitive pressure.<sup>21</sup> It is also worrisome in a field where R&D collaboration agreements are common—such as the \$1.5 billion plant biotechnology R&D collaboration between BASF and Monsanto<sup>22</sup>—making the race to innovate even less competitive than initial appearances would suggest. For all of these reasons, the proposed takeover “is likely ‘to diminish innovation competition.’”<sup>23</sup>

Viewing the proposed takeover holistically, it is also important to recognize the anti-competitive effect it would have as one of the largest recent moves towards consolidation in an already highly concentrated industry. A combined Bayer/Monsanto would be the largest seed and pesticide company in the world by a broad margin—with 29% of the global market for seeds<sup>24</sup> and 28% for pesticides<sup>25</sup>—and a dominant player among a shrinking pool of similarly situated firms. Under the leading indicator for market concentration, the Herfindahl–Hirschman Index (“HHI”), many of the staple seed markets are already near or above the Department’s threshold 2500-point level, indicating a “highly concentrated market,”<sup>26</sup> including the markets for corn, soy, and cotton.<sup>27</sup> As the Department’s guidance prescribes, under these conditions, a merger increasing a market’s HHI more than 100 points “often warrant[s] scrutiny,” and at a 200 point increase, it “will be presumed to be likely to enhance market power.”<sup>28</sup> Bayer’s takeover plan is likely to exceed this threshold in several instances.<sup>29</sup> For example, in the cottonseed market, the

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<sup>19</sup> See Phillips McDougall Ltd., *Directions in Global Research and Development for Crop Protection Products: Presentation at APVMA Future Forum*, 4 (Nov. 5, 2014) [hereinafter “Directions in Global R&D”], available at [http://apvma.gov.au/sites/default/files/docs/matthew\\_phillips\\_presentation\\_web\\_version.pdf](http://apvma.gov.au/sites/default/files/docs/matthew_phillips_presentation_web_version.pdf).

<sup>20</sup> See Testimony of Diana L. Moss, PhD., President of the American Antitrust Institute before the U.S. Senate Judiciary Committee, 8-9 (Sep. 20, 2016) [hereinafter “Moss Testimony”], available at <https://www.judiciary.senate.gov/imo/media/doc/09-20-16%20Moss%20Testimony.pdf> (“Maintaining standalone competition in R&D is essential for ensuring that incentives remain strong to continue existing and prospective product development programs.”).

<sup>21</sup> *Id.* at 8. See also *Directions in Global R&D* at 8-9.

<sup>22</sup> See *Id.*; Monsanto, *BASF and Monsanto Announce R&D and Commercialization Collaboration Agreement in Plant Biotechnology* (Mar. 21, 2007), available at <http://news.monsanto.com/press-release/basf-and-monsanto-announce-rd-and-commercialization-collaboration-agreement-plant-biot>.

<sup>23</sup> *Konkurrenz Antitrust Review* at 9 (quoting *Horizontal Merger Guidelines* at 23).

<sup>24</sup> Leah Douglas, *Monsanto-Bayer Mega-Deal a Nightmare for America?*, CNN (May 23, 2016, 3:01 PM), available at <http://www.cnn.com/2016/05/23/opinions/monsanto-bayer-douglas/>.

<sup>25</sup> The Associated Press, *Here’s How a Bayer-Monsanto Merger Affects Workers, Farmers, and Investors*, *Fortune* (May 24, 2016, 4:57 AM), available at <http://fortune.com/2016/05/24/bayer-monsanto-merger/>. As a reference, a theoretical Bayer/Monsanto corporation in 2015 would have had sales of \$23.1 billion as compared to ChemChina/Syngenta’s combined \$14.8 billion in sales and DuPont/Dow’s \$14.6 billion. Bayer & Monsanto, *Creating a Global Leader in Agriculture*, 9 (Sep. 14, 2016), available at <https://www.advancingtogether.com/en/home/>.

<sup>26</sup> *Horizontal Merger Guidelines* at 19.

<sup>27</sup> See *Moss Testimony* at 6; *Konkurrenz Antitrust Review* at 7.

<sup>28</sup> *Horizontal Merger Guidelines* at 19.

<sup>29</sup> Cf. Texas A&M University Agricultural and Food Policy Center, *Effects of Proposed Mergers and Acquisitions Among Biotechnology Firms on Seed Prices*, 24 (Sep. 2016) [hereinafter “Texas A&M Seed Price Analysis”], available at [https://www.afpc.tamu.edu/pubs/0/675/WP\\_16-2.pdf](https://www.afpc.tamu.edu/pubs/0/675/WP_16-2.pdf). This study looked at the HHI effect of the

HHI would nearly double—from 2760 to an astounding 5151 points, much more than has previously supported a judicial “presumption that [a] merger will lessen competition.”<sup>30</sup>

When one adds a hypothetical Bayer/Monsanto merger to the two other major proposed mergers, the agricultural inputs market begins to resemble an oligopoly. Already, the six companies with pending merger plans control approximately 71% of the world’s market for pesticides as well as 76% of the U.S. market for soybean seed and 83% of the U.S. market for corn seed,<sup>31</sup> but even these considerable figures may understate their influence. As most developers of genetic traits license those traits out to other seed producers, the total market share of “trait-acres”—the area of farmland sown to a particular genetically modified crop—for the Big Six (i.e., excluding ChemChina, but including BASF) was calculated *at more than 95%* for corn, soybeans, and cotton in the U.S. in 2009.<sup>32</sup>

Indeed, it is through these licensing agreements that the Big Six’s exercise of superior market power can truly be seen. In their analysis, the Konkurrenz Group observes that many “[o]f the remaining independent seed producers” without their own genetic trait development programs now depend on “cross-licensing agreements with the Big Six to sell seeds with specific combinations of traits.”<sup>33</sup> These agreements enable genetic trait makers to license their patented traits in anti-competitive ways, such as by preventing licensees from combining or “stacking” these traits with those of competitors. In 2007, for example, the Department—finding Monsanto’s restrictive cottonseed trait licensing practices to be anticompetitive in light of another proposed merger—required the company to allow permit licensees to breed and sell cottonseed combining Monsanto and non-Monsanto traits for a period of 10 years.<sup>34</sup>

The dominance of the same seeds and traits firms in the pesticides market also highlights the vertical-integration-based anticompetitive effects of a Bayer takeover. The five “top seed companies—Syngenta, Bayer, Dow, DuPont, and Monsanto—are also market leaders in agricultural chemicals,” and as a result, “[a]griculture is increasingly dominated by bundles of products designed to work together,” such as the “[p]ackages of seeds-traits-and-chemicals that only work with one another” like those sold by Monsanto and Bayer.<sup>35</sup> This means that, increasingly, smaller participants or prospective new entrants into either market will need to

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proposed Bayer/Monsanto merger in conjunction with the proposed Dow/DuPont merger and found that the HHI for the corn market would jump more than 400 points, more than 350 points for soybeans, and around 2,400 points for cotton.

<sup>30</sup> See Konkurrenz Antitrust Review at 8 (quoting *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 716 (D.C. Cir. 2001)); cf. *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559, 570 (6th Cir. 2014), *cert. denied*, 135 S. Ct. 2049 (2015).

<sup>31</sup> Frank, Lessiter, *Monsanto Has More to Worry About Than Just a Bayer Buyout*, No-Till Farmer (Jun. 11, 2016), available at <https://www.no-tillfarmer.com/blogs/1-covering-no-till/post/5778-monsanto-has-more-to-worry-about-than-just-a-bayer-buyout>.

<sup>32</sup> USDA Agricultural Concentration Report at 4. As defined in that Report, “A ‘trait-acre’ is the area sown to [genetically modified or ‘GM’] crops, where stacked GM traits are counted as multiple acres, depending on the number of traits stacked in a single seed.” *Id.*

<sup>33</sup> Konkurrenz Antitrust Report at 17.

<sup>34</sup> See *United States v. Monsanto Co.*, No. CIV 1:07-CV-00992, 2008 WL 5636384, at \*2, \*5, \*10 (D.D.C. Nov. 6, 2008), available at <https://www.justice.gov/atr/case-document/final-judgment-136>.

<sup>35</sup> See USDA Agricultural Concentration Report at 4; David J. Lynch & Guy Chazan, *Bayer-Monsanto Sows Seeds of Doubt Among Regulators*, Financial Times (May 30, 2016), available at <https://www.ft.com/content/e76f4d8a-23f2-11e6-9d4d-c11776a5124d>.

participate in both in order to compete—a task that will also become more and more difficult as the Big Six move to enhance their market power by consolidating to the “Big Four.” Accordingly, even assuming there is no loss of direct head-to-head competition between Bayer and Monsanto from the proposed takeover, the merger would still clearly qualify as anti-competitive under the Department’s Non-Horizontal Merger Guidelines.<sup>36</sup>

Ultimately, it is impossible to ignore that both Bayer and Monsanto are “dominant players” in the agricultural inputs market—an already heavily concentrated one that “do[es] not indicate any trend of reduced concentration” in the near future, especially in light of other proposed mergers among the Big Six.<sup>37</sup> As a Bayer takeover of Monsanto would dramatically “accelerate[] the trend towards increased concentration,” and otherwise substantially decrease competition, the Department can and should seek to enjoin it.<sup>38</sup>

## **II. The Proposed Takeover is Likely to Increase Costs and Limit Options for Farmers**

The animating purpose behind the Clayton Act’s prohibition on anti-competitive corporate mergers and acquisitions is to prevent the harm they inflict on consumers—specifically, the unnecessary or unfair inflation of the price of goods and services and the loss of product innovation and choice. In the world of agriculture, farmers have already borne the brunt of the existing anti-competitive moves in the industry—paying higher and higher prices while selecting from a narrowing field of suppliers—and a Bayer takeover of Monsanto promises to make this bad situation even worse.

In the past several decades, agriculture has become dominated by the use of genetically modified crops, and as the number of firms producing genetically modified seed and traits has shrunk, costs have risen precipitously. Between 1985 and 2000, the Big Six agricultural seed firms acquired about 75% of the small to medium companies conducting agricultural biotechnology research.<sup>39</sup> Since then, the percentage of genetically engineered major row crops has soared—with the percentage of engineered varieties of corn, cotton, and soybeans planted jumping from 25%, 61%, and 54%, respectively, in 2000, to 92%, 93%, and 94%, respectively, in 2016.<sup>40</sup>

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<sup>36</sup> See U.S. Dep’t of Justice, *Non-Horizontal Merger Guidelines*, 26-27 (originally issued Jun. 14, 1984) [hereinafter “Non-Horizontal Guidelines”], available at <https://www.justice.gov/atr/non-horizontal-merger-guidelines>. The Non-Horizontal Guidelines indicate that a merger of two companies primarily engaged in separate but complimentary markets can create or entrench market power where: (1) the degree of vertical integration between the two markets is so extensive that entrants to one market would also have to enter the other simultaneously; (2) entry into the secondary market would make entry into the primary market more difficult and less likely to occur; and (3) the primary market is otherwise conducive to noncompetitive performance. *Id.* With the proposed Bayer takeover, all three conditions are present with respect to both the seed and pesticide markets.

<sup>37</sup> See *Chicago Bridge & Iron Co. N.V. v. F.T.C.*, 534 F.3d 410, 442 n. 12 (5th Cir. 2008) (upholding FTC order, issued pursuant to its authority under Section 7 of the Clayton Act, requiring one of two “dominant players” in the market for industrial storage tanks to divest itself of assets acquired from another dominant supplier because the sale was likely to result in a substantial lessening of competition).

<sup>38</sup> *Id.*

<sup>39</sup> Moss Testimony at 1-2.

<sup>40</sup> See USDA, *Genetically Engineered Varieties of Corn, Upland Cotton, and Soybeans, by State and for the United States 2000-16* (Jul. 14, 2016), available at <http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx>.

Costs have followed suit. As USDA researchers have observed, “for the past two decades, the prices of farm inputs have been rising faster than the prices U.S. farmers receive for their crops,” with the “largest increase [occurring] . . . in crop seed prices, which more than doubled relative to the price received for agricultural commodities.”<sup>41</sup> In a dramatic and relevant example of the rising costs faced by farmers, the price of corn seed has nearly quadrupled in the last 20 years, even as the price per bushel corn has fallen back to roughly the same level it was at in 1996.<sup>42</sup> Although some of these costs are offset by increases in yield, in general, “seed price increases have outpaced yield increases over time,”<sup>43</sup> meaning that farmers have increasingly come to depend on a product where they must invest more and more each year just to maintain or marginally improve existing yield levels.

Compounding the financial squeeze from seed prices, “[h]erbicide prices have also increased.”<sup>44</sup> Due to the “significant transformation” of the pesticide industry from “the commercial introduction of [genetically modified crop] varieties,” demand has dramatically shifted “toward the herbicides to which those crops are resistant” produced by the same “few large multinational firms . . . [that] have both capabilities in agricultural chemical manufacturing and the technology necessary to develop elite germplasm with crop protection traits.”<sup>45</sup> Companies like Bayer and Monsanto have benefited from this shift, with Monsanto seeing the price of Roundup jump from \$11-\$13 a gallon in 2006 to more than \$20 a gallon in 2009, even at a time where the product’s efficacy was decreasing due to the growth of glyphosate-resistant weeds.<sup>46</sup>

USDA researchers have linked these price increases in both markets to industry consolidation, noting that:

“[g]reater market power resulting from the structural changes in agricultural input industries means that farmers may pay higher prices for purchased inputs [like seeds and pesticides]. With stronger legal protection over their intellectual property and fewer firms offering competition, firms can charge higher prices for their new innovations.”<sup>47</sup>

Unsurprisingly then, other independent analysis has predicted that the effect of the proposed Bayer takeover, in conjunction with the other proposed mergers, would raise the price of seeds. Specifically, a recently released Texas A&M University study found that the Bayer/Monsanto and Dow/DuPont mergers, if successful, “would cause the following expected increases in seed prices: 2.3% for corn, 1.9% for soybeans, and 18.2% for cotton,” with a 25% chance that prices would increase “2.6% for corn, 2.1% for soybeans, and 20.2% for cotton.”<sup>48</sup> Although the study

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<sup>41</sup> USDA Agricultural Concentration Report at 5.

<sup>42</sup> Jacob Bunge, *As Crop Prices Fall, Farmers Focus on Seeds*, Wall Street Journal (Oct. 16, 2016, 10:05 PM), available at <http://www.wsj.com/articles/as-crop-prices-fall-farmers-focus-on-seeds-1476669901>.

<sup>43</sup> See Moss Testimony at 5.

<sup>44</sup> Konkurrenz Antitrust Report at 20.

<sup>45</sup> Keith Fuglie et al., *Research Investments and Market Structure in the Food Processing, Agricultural Input, and Biofuel Industries Worldwide*, USDA Economic Research Service, 62 (Dec. 2011), available at <http://ageconsearch.umn.edu/bitstream/120324/2/err-130.pdf>.

<sup>46</sup> Konkurrenz Antitrust Report at 20.

<sup>47</sup> USDA Market Concentration Report at 5.

<sup>48</sup> Texas A&M Seed Price Analysis at 1.

notes that it is sometimes “difficult to isolate the effects of market power and other factors affecting high prices,” it nonetheless concludes that “market power resulting from the structural changes in agricultural input industries make farmers pay higher prices for purchased inputs.”<sup>49</sup> Accordingly, “[c]hanges in market concentration that would result from the proposed [Bayer/Monsanto and Dow/DuPont] mergers meet [the Department] criteria . . . [for being] ‘likely to enhance market power’ in the seed markets for corn and cotton.”<sup>50</sup>

These price increases—due not to real increases in production costs, but the exercise of market power—will also exacerbate the strain on farmers the Department learned about in 2010 when it, along with the USDA, hosted “series of workshops exploring competition in the agricultural sector.”<sup>51</sup> At those sessions, the Department heard directly from the farming community “about the high price of genetically modified seeds, restrictions on the use of genetically modified seeds, and a dearth of choices of genetically modified and conventional seeds . . . especially in the way of conventional corn and soybean varieties.”<sup>52</sup> The Department concluded then: “[t]hese discussions confirm[] that a healthy agricultural sector requires competition and, consequently, vigorous antitrust enforcement.”<sup>53</sup> We hope the Department fulfills that promise now by seeking to enjoin Bayer’s current proposed takeover of the Monsanto corporation.

### **III. The Proposed Takeover Will Likely Cement Current Chemical-Intensive Agricultural Practices That Threaten Pollinators Critical to Our Food Supply**

Lastly, it is important to bring to the Department’s attention the proposed takeover’s potential for significant negative environmental consequences—particularly, on the health of our nation’s pollinators, and, by extension, on the security of the global food supply.

Today, about “[t]hree-fourths of the world’s flowering plants and about 35 percent of the world’s food crops depend on animal pollinators to reproduce,” meaning that roughly “one out of every three bites of food we eat exists because of animal pollinators like bees, butterflies and moths, birds and bats, and beetles and other insects.”<sup>54</sup> Chief among these pollinators are bees—responsible for pollinating more than \$15 billion a year in U.S. crops.<sup>55</sup> Distressingly, however, for the past decade, bee populations and those of other pollinators, such as monarch butterflies, have been plummeting.<sup>56</sup>

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<sup>49</sup> *Id.* at 13, 27.

<sup>50</sup> *Id.* at 1.

<sup>51</sup> See U.S. Dep’t of Justice, *Competition and Agriculture: Voices from the Workshops on Agriculture and Antitrust Enforcement in our 21st Century Economy and Thoughts on the Way Forward*, 2 (May 2012), available at <https://www.justice.gov/sites/default/files/atr/legacy/2012/05/16/283291.pdf>.

<sup>52</sup> *Id.* at 13.

<sup>53</sup> *Id.* at 2.

<sup>54</sup> USDA, *Insects and Pollinators* (last visited Dec. 5, 2016), <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate/>.

<sup>55</sup> NRDC, *Why We Need Bees: Nature’s Tiny Workers Put Food on Our Tables* (Mar. 2011) [hereinafter “Bee Fact Sheet”], available at <https://www.nrdc.org/sites/default/files/bees.pdf>.

<sup>56</sup> See generally IPBES, *The Assessment Report on Pollinators, Pollination and Food Production: Summary for Policy Makers* (2016) [hereinafter “U.N. Pollinator Report”], available at [http://www.ipbes.net/sites/default/files/downloads/pdf/SPM\\_Deliverable\\_3a\\_Pollination.pdf](http://www.ipbes.net/sites/default/files/downloads/pdf/SPM_Deliverable_3a_Pollination.pdf).

Starting in 2006, honey bee colonies in the U.S. began dying at levels never before seen. The phenomenon was named “colony collapse disorder” (“CCD”).<sup>57</sup> Although colony deaths characterized by CCD have diminished since that time, total colony deaths persist at near record levels, with 44% of all managed colonies collapsing from April 2015 to April 2016.<sup>58</sup> The cause of these deaths is multifold, including: the effects of climate change in altering blooming cycles; habitat loss as a result of urban sprawl and monoculture farming; and stresses from parasites and disease.<sup>59</sup> A growing body of research, however, demonstrates that the widespread use of modern pesticides—most notably, neonicotinoid pesticides or “neonics”—is a leading culprit.<sup>60</sup>

Although commercial beekeepers have been able to prevent major agricultural disruptions by splitting surviving healthy colonies in two and importing specially bred queens, there is increasing concern that this practice may be unsustainable in the long term. Moreover, undomesticated pollinators, such as monarch butterflies and the approximately 4,000 species of wild bees found in the U.S., are not artificially maintained. For this reason, wild populations have seen severe declines in recent years—with monarch populations down more than 90 percent since the mid-nineties<sup>61</sup> and the rusty patched bumble bee now slated to be listed as “endangered” for the first time by the U.S. Fish and Wildlife Service.<sup>62</sup>

The grave consequences resulting from a possible loss of these pollinators are confirmed by a recent U.N. report underscoring the “important role [pollinators play] in food security.”<sup>63</sup> It notes that, today, 75% “of the world's food crops . . . depend at least in part on pollination,” and the annual value of crops affected by pollinators at between “US\$235 billion-US\$577 billion.”<sup>64</sup> While “diverse pressures” are responsible for current pollinator losses, the human contribution is undeniable, with the assessment finding that “pesticides, including neonicotinoid insecticides,

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<sup>57</sup> See Bee Fact Sheet.

<sup>58</sup> See Associated Press, *Death Rate for Honeybees Takes Turn for the Worse*, CBS News (May 11, 2016, 10:43 AM), available at <http://www.cbsnews.com/news/death-rate-for-honeybees-takes-turn-for-the-worse/>; Bee Informed Partnership, *Nation's Beekeepers Lost 44 Percent of Bees in 2015-16* (May 10, 2016), available at <https://beeinformed.org/2016/05/10/nations-beekeepers-lost-44-percent-of-bees-in-2015-16/>.

<sup>59</sup> See Bee Fact Sheet.

<sup>60</sup> See, e.g., Ben A. Woodcock et al., *Impacts of Neonicotinoid Use on Long-Term Population Changes in Wild Bees in England*, *Nature Communications* 7, 12459 (Aug. 16, 2016), available at <http://www.nature.com/articles/ncomms12459>; David Goulson, *Neonicotinoids Impact Bumblebee Colony Fitness in the Field: a Reanalysis of the UK's Food & Environment Research Agency 2012 Experiment*, *PeerJ* 3:e854 (Mar. 24, 2015), available at <https://peerj.com/articles/854/>; Raj Rundlöf et al., *Seed Coating with a Neonicotinoid Insecticide Negatively Affects Wild Bees*, *Nature* 521: 77-80 (Apr. 22, 2015), available at <http://www.nature.com/nature/journal/v521/n7550/full/nature14420.html>; Sonia Shah, *Behind Mass Die-Offs, Pesticides Lurk as Culprit*, *Yale Environment* 360 (Jan. 7, 2010), available at <http://e360.yale.edu/content/feature.msp?id=2228>.

<sup>61</sup> Maria Gallucci, *Monarch Butterflies Fall 90% From 1990 Levels, Should Be Declared 'Threatened,' Conservationists Say*, *International Business Times* (Aug. 26, 2014, 5:59 PM), available at <http://www.ibtimes.com/monarch-butterflies-fall-90-1990-levels-should-be-declared-threatened-1670368>.

<sup>62</sup> Laura Zuckerman, *Rusty Patched Bumble Bee Proposed for U.S. Endangered Species Status*, *Reuters* (Sep. 22, 2016, 8:35 AM), available at <http://www.reuters.com/article/us-usa-bumblebee-idUSKCN11R2TI>.

<sup>63</sup> UNEP News Center, *Pollinators Vital to Our Food Supply Under Threat*, *United Nations Environment Programme* (Feb. 26, 2016), available at <http://www.unep.org/newscentre/Default.aspx?DocumentID=27058&ArticleID=36080>.

<sup>64</sup> *Id.*

threaten pollinators worldwide.”<sup>65</sup> Ultimately, the assessment concludes that “many” of the hazards faced by pollinators are “human-made, threatening millions of livelihoods and hundreds of billions of dollars’ worth of food supplies.”<sup>66</sup>

Bayer’s proposed takeover of Monsanto now promises to aggravate this already dire situation by creating a dominant agricultural player with strong incentive to pressure or persuade farmers to maintain the chemical-heavy growing practices currently assaulting our nation’s pollinators.

Specifically, as a leading pesticide manufacturer, Bayer has a strong incentive to make sure that Monsanto’s expertise in genetically modified seeds is used to support its pesticide sales. As Bayer stated in its past promotional materials, its “[l]ong-term” plans for a future combined company would be “the creation of the next generation Herbicide Trait system [using] . . . Bayer’s chemistry and the unique capabilities of Monsanto to modify the genetics of the major row crops.”<sup>67</sup> In other words, Bayer sees a future where its production of genetically modified seeds will be specifically tailored to create a concurrent or future market for its own pesticides.

This business model, of course, is not entirely new. The 2015 annual reports for both Bayer and Monsanto show each company already geared toward it—with Bayer “aim[ing] to build on [its] expertise in the integration of seed technology with chemical and biological crop protection”<sup>68</sup> and “Monsanto’s crop protection business focus . . . [being] to strategically support Monsanto’s Roundup Ready crops through [its] weed management platform that delivers weed control offerings for farmers.”<sup>69</sup> This referenced “platform” is Monsanto’s “Roundup Ready PLUS®” platform, which offers rebates for farmers purchasing “Roundup Ready” seed, provided they also purchase the accompanying pesticides.<sup>70</sup> Perhaps unsurprisingly, the growth of these “platforms” in the last few decades has coincided with a sizeable increase in the use of herbicides,<sup>71</sup> including a more than eleven-fold increase in the use of glyphosate, the active ingredient in Roundup.<sup>72</sup>

A Bayer/Monsanto merger would institutionalize such pesticide-heavy agricultural practices by producing a dominant industry player able to advance its combined seed and pesticide offerings both through the use of its superior market power and, possibly, through further vertical integration. Bayer, for example, wishes to take advantage of “digitization in agriculture” by

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<sup>65</sup> *Id.*; see also Elizabeth Grossman, *Declining Bee Populations Pose a Threat to Global Agriculture*, Yale Environment 360 (Apr. 30, 2013), available at <http://e360.yale.edu/feature/declining-bee-populations-pose-a-threat-to-global-agriculture/2645/>.

<sup>66</sup> UNEP News Center, *supra*, note 63.

<sup>67</sup> Bayer, *FAQ*, 3 (undated), formerly available on the Advancing Together website, but now available at [https://www.sec.gov/Archives/edgar/data/1110783/000110465916132661/a16-12008\\_34ex99d2.htm](https://www.sec.gov/Archives/edgar/data/1110783/000110465916132661/a16-12008_34ex99d2.htm).

<sup>68</sup> Bayer 2015 Annual Report at 59.

<sup>69</sup> Monsanto 2015 Annual Report at 17.

<sup>70</sup> Monsanto, *The Platform: How Roundup Ready PLUS® Crop Management Solutions Incentives Work* (last visited Dec. 5, 2016), available at <http://www.roundupreadyplus.com/platform/howitworks>.

<sup>71</sup> See Danny Hakim, *Doubts About the Promised Bounty of Genetically Modified Crops*, New York Times (Oct. 29, 2016), available at <http://www.nytimes.com/2016/10/30/business/gmo-promise-falls-short.html> (herbicide use in U.S. increased 21% in the last decade, while it fell 36% in France); Beth Hoffman, *GMO Crops Mean More Herbicide, Not Less*, Forbes (Jul. 2, 2013, 11:39AM), available at <http://www.forbes.com/sites/bethhoffman/2013/07/02/gmo-crops-mean-more-herbicide-not-less/#7127b051a371>.

<sup>72</sup> Glyphosate Use Study at Fig. 2c.

creating or acquiring “proprietary digital platforms and data models that can enable [it] to give farmers special agronomic recommendations.”<sup>73</sup> In other words, Bayer envisions itself becoming something of an agricultural “one-stop-shop”—farmers could buy Bayer-produced seeds, plant them in a field monitored by a Bayer digital platform, analyze them with Bayer data models, and then receive recommendations as to when and where to spray Bayer-produced pesticides. Although the ostensible purpose of these “digital farming” efforts is to “make agriculture more sustainable,”<sup>74</sup> when a pesticide manufacturer starts providing farm advice, the incentive to recommend the generous and frequent use of its pesticides is clear.

Ironically, were a combined Bayer/Monsanto corporation to recommend spraying more pesticides, it would likely be supported by its products’ own decreasing effectiveness. Indeed, as glyphosate-resistant weeds have multiplied in the last decade, so too has the total amount of glyphosate applied in the U.S, because “[t]o combat weeds less sensitive to glyphosate, farmers typically increase glyphosate application rates and spray more often.”<sup>75</sup> Further, where weed resistance to a single pesticide reaches a tipping point, the solution offered is often more pesticides. Bayer, for instance, already has plans for combining three different herbicide resistance traits into “an herbicide ‘triple stack’ that brings all three traits together in a single [seed],” allowing spraying of all three corresponding herbicides on the same crop.<sup>76</sup> Likewise, “Monsanto has said that the corn seed of 2025 will have 14 traits and allow farmers to spray five different kinds of herbicide.”<sup>77</sup>

Worryingly, while pesticide-heavy agricultural practices often do not appear to provide clear-cut yield advantages,<sup>78</sup> they do harm pollinators—and a Bayer/Monsanto merger could make it more difficult to eliminate even the least justifiable practices, such as the ones that increase farmer input costs while providing no measurable benefit.

A relevant example is the routine treatment of seeds with neonics—the most widely used class of insecticides in the world and also one of the most toxic for bees.<sup>79</sup> Neonics are long-lived “systemic” insecticides, which, when applied to a plant seed, are taken up into the body of the growing plant, making the plant itself poisonous to insects. Despite the fact that neonic treatment adds to the price of seeds and harms bees, treatment for major U.S. row crops is now pervasive—for example, “[t]oday nearly 100 percent of corn planted in the United States is commercially treated with an insecticide and fungicide seed treatment.”<sup>80</sup> The U.S. Environmental Protection Agency concluded in 2014, however, that, at least with respect to most

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<sup>73</sup> Bayer 2015 Annual Report at 59.

<sup>74</sup> *Id.*

<sup>75</sup> Glyphosate Use Study at Fig. 2.

<sup>76</sup> Bayer Crop Science, *The Future of Farming: What’s Next* (last visited Dec. 5, 2016), available at <https://www.cropscience.bayer.us/learning-center/articles/the-future-of-farming-whats-next>.

<sup>77</sup> Hakim, *supra*, note 71.

<sup>78</sup> *See Id.*

<sup>79</sup> *See* Damian Carrington, *Insecticides Put World Food Supplies at Risk, Say Scientists*, *The Guardian* (Jun. 23, 2014), available at <https://www.theguardian.com/environment/2014/jun/24/insecticides-world-food-supplies-risk>.

<sup>80</sup> Syngenta, *Leading the Industry in Seed Treatment Technology*, Seedcare Product Catalog, 14 (2014), available at <https://www.farmassist.com/SeedTreatment/Seedcare-Product-Catalog.pdf>; *see also* Tom Meersman, *Syngenta Spending \$20 Million to Expand Seed Research Center Near Northfield*, *Star Tribune* (Sep. 5, 2015, 12:50 PM), available at <http://www.startribune.com/syngenta-spending-20-million-to-expand-seed-research-center-near-northfield/324757041/>.

soybeans, “neonicotinoid seed treatments likely provide \$0 in benefits to growers,”<sup>81</sup> and there is concern the same could be true for corn.

In a competitive market, harmful and cost-inefficient pesticide uses, such as neonic seed treatments, are eventually eliminated. But the corrective pressure may disappear when one of the world’s leading producer of neonics, like Bayer, also becomes a globally dominant seed maker. Indeed, seed purchasers in the future wishing to purchase certain proprietary crop seed varieties may have little choice other than to purchase seed coated in non-beneficial pesticides, even if they come at higher cost.

Ultimately, this market failure contributes to the larger global failure to sufficiently curb pesticide use in order to evade further devastation of our pollinator populations. Accordingly, by reinforcing practices that promote increased pesticide use at a time when our nation’s pollinators are already in crisis, there is a significant risk that a Bayer takeover of Monsanto will considerably threaten their continued existence and, consequently, the integrity of our global food supply.

#### IV. Conclusion

As mentioned above, we believe a Bayer takeover of Monsanto will create a dominant player in agricultural markets at a time of unprecedented consolidation in those markets, greatly increasing the risk that it will exercise its formidable market power in a way that reduces competition and innovation, hurts farmers, and threatens our security and our environment. For these reasons, we urge the Department to recognize that the effect of the proposed takeover will be to “substantially to lessen competition, or to tend to create a monopoly,”<sup>82</sup> and move to enjoin it from occurring.

Thank you for your time and attention to this request, and please do not hesitate to contact us if you have any questions or would like to discuss our request.

Respectfully,



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<sup>81</sup> EPA, *Memorandum: Benefits of Neonicotinoid Seed Treatments to Soybean Production*, 2 (Oct. 15, 2014) available at <https://www.epa.gov/pollinator-protection/benefits-neonicotinoid-seed-treatments-soybean-production>.

<sup>82</sup> 15 U.S.C. § 18.