

No. 11-796

IN THE
Supreme Court of the United States

VERNON HUGH BOWMAN,
Petitioner,

v.

MONSANTO COMPANY and
MONSANTO TECHNOLOGY LLC,
Respondents.

**On Writ of Certiorari to the United States
Court of Appeals for the Federal Circuit**

**BRIEF OF *AMICUS CURIAE* BAYHDOLE25, INC.
IN SUPPORT OF AFFIRMANCE**

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- Mark Lynas Lecture to Oxford Farming Conference, 3 January 2013, *available online at:*
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- National Grain and Feed Association, “who we are,” *available online at:*
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INTEREST OF *AMICUS CURIAE*¹

BayhDole25, Inc. (“BayhDole25”) is a non-profit, non-governmental organization named for the Bayh-Dole Act of 1980 (“Bayh-Dole”) and related legislation, and founded on the twenty-fifth anniversary of passage of the Act. BayhDole25 does not receive federal funding, nor has it received financial support from research institutions, universities, or individual biotechnology companies.

BayhDole25’s mission is to increase awareness of the importance of Bayh-Dole for enabling an environment for commercialization and assimilation of new technologies for the creation of economic and social benefit. Since incorporation in 2006, BayhDole25 and its Board have made important contributions to the understanding of public policy priorities relating to technology transfer and the key role of Bayh-Dole in continued United States global competitiveness, particularly in the life sciences area.²

BayhDole25’s educational materials, capacity building programs and web site have become “go-to” resources for policy makers domestically and around

¹ No counsel for a party authored this brief in whole or in part, nor made a monetary contribution intended to fund the preparation or submission of the brief. No one other than *amicus* or counsel made a monetary contribution to the preparation or submission of this brief. Pursuant to this Court’s Rule 37.3(a), letters of consent were filed by the parties.

² BayhDole25 publications and related presentations are available online at: <http://www.bayhdole25.org/resources> (last visited January 14, 2013).

the world.³ Since 2006, BayhDole25 has participated in numerous science and technology seminars in the United States, as well as in Brazil, China, Chile, France, India and Italy, where the benefits of a Bayh-Dole-type approach have been showcased as the way to commercialize public investment in scientific research. The technology transfer scheme of Bayh-Dole, in which ownership of government funded inventions are maintained by the research entities, has been emulated around the world with great success. See The Bayh-Dole Act at 25, at 37-46 (Apr. 17, 2006) (citing both Organization for Economic Cooperation and Development (“OECD”) members and advanced developing countries that have benefited from adoption of technology transfer statutes or related mechanisms.⁴)

The Parties and other *amici* represent the interests of innovative agricultural companies and commercial farmers and, of course, the Government.

³ For example, BayhDole25 publications were cited by *amicus curiae* Massachusetts Institute of Technology in its Brief in Support of Petitioner for Writ of Certiorari, at 6, 8, in *Board of Trustees of the Leland Stanford Junior University v. Roche Molecular Systems, Inc.*, No. 09-1159. Internationally, BayhDole25 publications have distributed by WIPO. See http://www.wipo.int/sme/fr/newsletter/2010/news_0003.html (last visited on January 14, 2013). They have also been cited by policy makers in South Africa and India, among others. Closer to home, the Levin Institute of the State University of New York recommends the use of BayhDole25’s IP Toolkit for an understanding of intellectual property globalization. See <http://www.globalization101.org/suggested-readings-8/> (last visited on January 14, 2013).

⁴ Available online at: <http://www.bayhdole25.org/whitepaper> (last visited on January 14, 2013).

Although BayhDole25 is not an economic stakeholder, it has the broader mission of advocating for the powerful social and economic benefits that have continued to flow from technology transfer relating to agricultural biotechnology advances, both in the United States and in developing and developed countries around the world. As such, BayhDole25 is perhaps uniquely situated to provide an additional perspective that may be useful to the Court.

SUMMARY OF THE ARGUMENT

This case commenced as a straightforward dispute over the failure of Petitioner to pay for the continued use of Respondents' patented technology—genetically modified soybeans known as Roundup Ready® soybeans—over several years. In simplistic terms, Respondents' patented technology provides commercial benefits to farmers who gain access to such technology through a contract known as the Technology Agreement. The Parties agree on that much. The root cause of this dispute is the commercial interest of Petitioner in Roundup Ready® technology, beyond the agreed use under the Technology Agreement, for his second season planting.

Amicus supports the view of the Petitioner and a number of *amici* that the Court should give great weight to the contractual elements in this case. The Petitioner, however, has glossed-over critical elements related to the Technology Agreement and the historical purpose and role of commodity grain elevators that call into question whether or not Petitioner has met obligations outlined in the Technology Agreement.

Amicus seeks to provide broader context demonstrating that Petitioner’s admitted activities represent transactions intended to essentially “launder” the Respondents’ Roundup Ready® technology through the grain elevator, activities that were neither intended nor anticipated under the Technology Agreement. Further facts of the case reveal substantial differences between the instant case and *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008), and other precedents supporting application of the exhaustion doctrine, leading to the conclusion that Respondents’ patent rights—and attendant compensation for use of such rights—should continue beyond the first sale of Roundup Ready® soybeans.

This compensation in turn supports long-term investment in new technologies for the continued vibrancy of U.S. agricultural biotechnology, where the private sector now provides the lion’s share of R&D critical to continuing agricultural productivity gains. Like never before, innovative agricultural biotechnology companies play a key role in the commercialization and assimilation of advanced technologies for creation of economic and social value in the United States, as well as to meet global challenges associated with population growth and climate change.

Amicus relate the role of Petitioner, Respondents and other stakeholders in the historical social contract for technology transfer that has fueled growth in agricultural productivity and global development. *Amicus* hopes that this broader context and discussion of the global social contract around technology transfer and commercialization of agricultural tech-

nologies may be helpful to improve an understanding of the issues in this case.

ARGUMENT

I. CONTRACTUAL LIMITATIONS VIOLATED BY PETITIONER AND IMPLICATIONS FOR APPLICATION OF THE EXHAUSTION DOCTRINE

This case commenced as a dispute over the use of Respondents’ patented genetically modified seeds, known as Roundup Ready® soybeans, spanning several years. Pet. App. 20a-23a. *Amicus* agrees with other *amicus* Knowledge Ecology International (“KEI”),⁵ that the Court should seek to resolve this case on contractual grounds, and believes that a full understanding of the relevant facts—including factual background glossed-over by Petitioner—lead to the conclusion that Petitioner violated the letter and spirit of the Technology Agreement. The factual background underlying Petitioner’s transactions also help to distinguish the instant case from *Quanta*) and related precedents concerning the exhaustion doctrine, where the soybeans have many ultimate uses other than planting.

A. THE TECHNOLOGY AGREEMENT

The Parties agree that Respondents license producers to sell Roundup Ready® soybeans to growers for use during a single planting season under the Technology Agreement. As one of Respondents’ licensed seed producers, Pioneer Hi-Bred (“Pioneer”)

⁵ See Brief of *Amicus Curiae* Knowledge Ecology International in Support of Petitioner.

sold Pioneer Hi-Bred® brand seeds containing the Roundup Ready® technology to Petitioner over a number of years. Pet. App. 20a-21a.

Pioneer required Petitioner to execute the “Pioneer Hi-Bred Technology Agreement,” restricting Petitioner’s use of the soybeans. The Pioneer Technology Agreement contains language and restrictions identical to Respondents’ Standard Form Technology Agreements. Specifically, Petitioner agreed: (1) “[t]o use the seed containing the subject technology for planting a commercial crop only in a single season”; (2) “[t]o not supply any of this seed to any other person or entity for planting, and not to save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting”; (3) “[t]o not use this seed or its progeny or provide it to anyone for crop breeding, seed production or research (other than to make agronomic comparisons and conduct yield testing).” Pet. App. 6a-9a, 21a; JA27a; *see also* Fed. Cir. JA A0284-A0315.

Under the Technology Agreement, Petitioner was allowed to use or sell the crop produced from the purchased seed for purposes other than for planting or saving for future seasons. (The Technology Agreement does not enumerate the entire universe of permitted uses.) The Technology Agreement remains in effect perpetually until cancelled by the Parties or replaced by another agreement. Petitioner executed the Technology Agreement in 2002. Pet. App. 21a; JA27a.

Petitioner’s activities under the Technology Agreement raise a number of questions that are critical to a full understanding of the case, including:

- Why does the Technology Agreement expressly prohibit use of the soybean crop for planting and agricultural cultivation but not sale to commodity grain elevators?
- Does Petitioner's sale to and repurchase of soybeans from the commodity grain elevator and related seed-saving violate the Technology Agreement?
- Does the historical role of grain elevators and the purposes for which they convey their products vitiate the assertion that the Petitioner's actions were in good faith?

B. COMMODITY GRAIN ELEVATORS

The clear intent of the Technology Agreement is to limit licensees commercial use of the Roundup Ready® technology to a single planting season. If this is the case, then, why did Respondents not contractually bar sale to commodity grain elevators while explicitly prohibiting any sale for the purpose of, or leading to, planting or crop breeding?

The answer to this important question lays in the important continuing role played by commodity grain elevators in the U.S. agricultural supply chain. As one global thought-leader has mentioned:

Modern agriculture in developed countries including the United States involves far more than farms and farmers—it depends on enormous, highly sophisticated systems that move, store and processes producers' output

throughout an extensive value chain that extends to food products and final consumers.⁶

Commodity grain elevators are the first link between the farm-gate and the marketplace, and act as key intermediaries purchasing products from farmers for distribution locally, regionally and internationally. Commodity grain elevators typically sell products to meet a range of needs, including:

- Direct use as feed for livestock,
- Milling or other processing for industrial or food products, and
- Shipment to markets, including possible export to world markets.⁷

⁶ William C. Motes, “Modern Agriculture and its Benefits: Trends, Implications and Outlook,” Informa Economics (March 2010), p. 13. (“[T]hese activities taken together contribute well over \$1.2 trillion to the US GDP annually and support nearly 24 million jobs (Table 4). And, while farm production and productivity are the bedrock of this system, they account directly for only small shares of the system’s GDP and jobs—6 percent and 8 percent, respectively.” (Table omitted).).

⁷ This brief description fails to capture the complex and varied support provided by commodity grain dealers and related businesses, including:

- **country elevators** that provide storage, merchandising and farm supply services to farmer-customers.
- **feed mills** that manufacture premixes and complete feeds for the livestock, poultry, aquaculture and pet food industries.
- **export elevators** that merchandise and ship U.S. grains, oilseeds and processed commodities to foreign customers.
- **cash grain and feed merchandisers** who buy and sell grains, oilseeds and grain products.

With this backdrop, it becomes clear that barring commercial sale of the soybean crop to grain elevators would be impracticable and would impose unreasonable added transaction fees and logistical burdens onto farmers.

C. PETITIONER'S ACTIVITIES IN VIOLATION OF THE LETTER AND SPIRIT OF THE TECHNOLOGY AGREEMENT

The Parties agree that each year Petitioner sold his first season crop to a local commodity grain elevator with the intention of re-purchasing the crop—*for use as seed for planting, and not as a commodity*—in order to gain continued commercial benefit without payment for that benefit. Pet. App. 22a-23a. Petitioner anticipated that a large percentage of the commodity soybeans he bought would contain the Roundup Ready® technology. Pet. App. 22a-23a.

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- **commodity futures brokers and commission merchants** who provide hedging services to grain buyers and sellers through the use of futures markets.
 - **end users** of grain and grain products, such as:
 - **grain processors and millers** who process raw grain into myriad products - such as flour, corn meal and syrup, and soybean oil and meal - for human and animal consumption, and industrial uses;
 - **livestock and poultry integrators**; and
 - **biofuels producers**, who manufacture fuel ethanol and soy diesel, as well as coproduct ingredients for animal feed.

<http://www.ngfa.org/who-we-are.cfm> (last visited on January 14, 2013). For further interesting reading about the historical importance of commodity grain dealers, see <http://www.buffalohistoryworks.com/grain/milling/milling.htm> (last visited on January 14, 2013) and <http://myplace.frontier.com/~chester.history/id133.html> (last visited on January 14, 2013).

Also, Petitioner subsequently and successively saved seed containing the Roundup Ready® technology from his second season crop to use in future seasons. Pet. App. 22a-23a. Petitioner and supporting *amici* assert that these activities do not violate the Technology Agreement and further that Respondents should have anticipated these activities in the drafting of the Technology Agreement.

As outlined above, though, Petitioner’s intentional use of the grain elevator to essentially “launder” the Roundup Ready® technology—*i.e.*, delivering his soybean crop on one end of the grain elevator and for all intents and purposes re-purchasing the same or similar soybeans on the other end for planting—is an atypical and unconventional use of commodity grain elevators. In historical terms, then, Petitioner’s sale and subsequent repurchase of his first season crop—or essentially identical soybeans—should be viewed as extraordinary and unexpected.

In this context, should Respondents have amended the Technology Agreement in anticipation of Petitioner’s actions? Or has Petitioner violated the letter and spirit of the Technology Agreement?

Reviewing again the Technology Agreement, Petitioner is authorized to produce a single crop, leaving open the ability of Petitioner to convey that crop *as a commodity* to a grain elevator. The Technology Agreement also states that Petitioner agrees “[t]o not supply any of this seed to any other person or entity for planting, and not to save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting” and “[t]o not use this seed or its progeny or provide it to anyone for crop

breeding, seed production or research.” Pet. App. 6a-9a, 21a; JA27a; *see also* Fed. Cir. JA A0284-A0315.

Any temporary or “strawperson” sale—*i.e.*, a transaction entered into for the explicit purpose of repurchasing soybeans containing the Roundup Ready® technology for planting—undermines the letter and spirit of the Technology Agreement. Petitioner was aware that the vast majority of seed purchased by the grain elevator would share the Roundup Ready® trait, enabling Petitioner to continue to gain commercial benefit by planting the soybeans during the second season. Pet. App. 7a-9a, 32a-33a. Petitioner’s activities should not be rewarded.

Taking all of the above into consideration, *amicus* finds it disingenuous for the Petitioner to argue that his activities complied with his contractual obligations under the Technology Agreement as written, and that Respondents should have anticipated Petitioner’s activities by barring sale to grain elevators in the Technology Agreement. Given the continuing critical importance of access to commodity grain elevators for farmers and the historical and conventional purposes for which farmers use grain elevators, it is both impracticable and superfluous for the Technology Agreement to bar such activities. Nor is it reasonable to assert that Respondents should anticipate every potential activity that a licensee may undertake in violation of the letter and spirit of the Technology Agreement.

As noted by KEI and other *amici*, this Court should look to the contractual elements first as the

best way to resolve this case, where Petitioner’s activities violated both explicit and implied restrictions under the Technology Agreement.

D. EXHAUSTION OF PATENT RIGHTS AND SELF-REPLICATING TECHNOLOGY

In granting Petitioner’s Writ of Certiorari, this Court expressed particular interest in two questions relating to whether authorized sale of the crop from Petitioner’s first season should result in patent exhaustion, as well as whether any exception to exhaustion is required for genetically modified seeds as “self-replicating” technologies.

As outlined above, *amicus* agrees with other *amici* that this case should be determined on the basis of the contractual elements. Based on the facts of the case, however, *amicus* believes that the Court need not reach the first question given that Petitioner’s actions do not satisfy the requirements of authorized sale as reasonably intended and mutually understood under the Technology Agreement.

With regard to the issue of “self-replicating” technologies, based solely on the precedents cited in Petitioner’s brief, *amicus* respectfully submit that the facts do not support the conclusion that the genetically modified seeds should be categorized as “self-replicating.” Petitioner repeats throughout his brief that the sole purpose and reasonable use for the technology is as seed for planting and, therefore, the technology is “self-replicating.”

Like Maslow’s hammer,⁸ Petitioner is only able to see one purpose and reasonable use for the soybeans of his first season crop. However, a variety of purposes and normal uses for soybeans are included in the Technology Agreement itself, including: crop breeding, R&D, generation of herbicide registration data, and seed production. Pet. App. 6a-7a, 21a; JA27a; *see also* Fed. Cir. JA A0284-A0315. As noted above, other additional purposes and reasonable uses for Petitioner’s crop from the first season include as sale to a grain elevator as a commodity product, feed for livestock, processing for industrial uses (including in biofuels) as well as for a range of food products, and for export overseas. All of these enumerated purposes or reasonable uses are possible without replication.

Petitioner’s and some supporting *amici*’s assertion that planting—*e.g.*, replication—is the only purpose or reasonable use for Petitioner’s crop from the first season is demonstrably false. As such, it is *amicus*’ view that the Court also need not reach the second question presented.

II. IMPORTANCE OF EFFECTIVE PATENT PROTECTION FOR ADVANCED AGRICULTURAL TECHNOLOGIES

In seeking reversal of the decision in the Court of Appeals for the Federal Circuit, Petitioner claims entitlement to continued commercial use of the

⁸ See Abraham Maslow, *The Psychology of Science: A Reconnaissance* 1966 (“I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.”).

Roundup Ready® technology without compensation to the innovator, Respondents.

This case is framed as a “David and Goliath” dispute, with Petitioner as David and Respondents as Goliath—large anonymous global companies that can bear the loss of compensation for use of the Roundup Ready® technology in the second and further season plantings.⁹ This precedent, however, would apply to any and all innovators, fundamentally altering the existing business model for agricultural biotechnology—substantially curtailing return on investment with profound adverse consequences for global development.

In this broader context, for every commercial farmer like Petitioner in the U.S. claiming harm from payment for continued access to advanced seed technologies—where the eight fields at issue in this case alone total 399 acres—there may be tens of thousands of subsistence farmers in developing countries operating on a few hectares or less, and relying on continued transfer of technology from innovative private agricultural companies to meet agricultural challenges in the 21st century. In the

⁹ The undercurrent of hostility to agro-biotechnology companies implicit in filings of the Petitioner and supporting *amici* bears close scrutiny. As noted by Michael Lynas, long-time anti-GMO activist who has now publicly recanted and reversed his position: “In particular one critic said to me: so you’re opposed to GM on the basis that it is marketed by big corporations. Are you also opposed to the wheel because it is marketed by the big auto companies?” Available online at: <http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/> (last visited on January 15, 2013).

grander scheme of global agriculture, Petitioner is a Goliath.¹⁰

This section reviews this broader context with regard to the importance of continuing agricultural-biotechnology R&D for improved agricultural productivity and poverty reduction in the developing world.¹¹ Private investment has been a major driver

¹⁰ Even in the U.S., the vast majority of farms are owned and operated by families like Petitioner, not faceless corporations. See Motes, p. 31 (“Despite assertions that the modern food production is corporatized, it is not. For example, in the United States, families own almost 96 percent of the 2.2 million farms, including the vast majority of the largest operations. Small-scale agriculture, rather than being driven out, is on the upswing with growing numbers of such operations, although—after years of rapid growth—organic foods and beverages still account for less than 3 percent of US food sales.”).

¹¹ Adoption of one such technology, insect-protected Bt cotton, by several million small farmers in developing countries such as China, South Africa, and Mexico has been associated with the following benefits:

In China, a 1999-2001 survey of farmers demonstrated three-year average increased yields from Bt cotton of 523 kilograms per hectare (24%) over non-Bt cotton. Three-year net economic returns per hectare averaged US\$332 for Bt cotton versus a loss of US\$138 for non-Bt cotton—a difference of US\$470. In South Africa, a three-year analysis of 2,200 small farmers from the Makhathini area demonstrating consistently higher yields and increased revenues for Bt versus non-Bt cotton farmers. Bt cotton farmers experienced increased gross margins of 531 to 742 South African rand per hectare (equivalent to US\$86 to \$93) versus non-Bt cotton farmers over the study period. In Mexico, a study documented the economic benefits of Bt cotton during 1998. The study demonstrated increased yield of 0.29 tons per hectare and reduced expenditures on seed and pesticides of US\$83 per hectare, creating a

for increased agricultural productivity, greater efficiencies in water usage and reduced need for chemical fertilizers and/or crop protection products.¹² (Given the adverse climate for agricultural biotechnology in Europe,¹³ much of the technology increasingly originates in the United States from companies like Respondents.¹⁴)

net economic advantage of US\$626 per hectare for Bt cotton farmers versus non-Bt cotton farmers.

Motes, p. 23.

¹² See Clive James, “Progressing Public-Private Sector Partnerships in International Agricultural Research and Development,” ISAAA Briefs, No. 4, ISAAA: Ithaca, NY (1997) p. 16 (“The advent of biotechnology has resulted in a significant change in the relative investments of the public and private sectors in agriculture, with the private sector now investing significantly more than the public sector in biotechnology R&D. As the adoption of biotechnology-based products in agriculture becomes more widespread, this gap between public and private sector investments is expected to increase. This trend will be accentuated by current government policies, in both industrial and developing countries, that encourage participation by the private sector in areas where it has comparative advantages over the public sector.”).

¹³ “BASF moves GM crop research to US,” *Nature Biotechnology* 30, 204 (2012), available online at <http://www.nature.com/nbt/journal/v30/n3/full/nbt0312-204b.html> (last visited on January 14, 2013).

¹⁴ J. Piesse and C. Thirtle, “Review: Agricultural R&D, technology and productivity,” *Phil. Trans. R. Soc. B* (2010) 365, 3035–3047. (“BASF, Bayer, Syngenta, Dupont, Dow and Monsanto, together spend US\$3.6 billion, compared with US\$1.42 billion for the other 249 companies operating in these areas and US\$4 billion for all the other areas. The total private expenditures on agricultural chemicals is US\$2.65 billion and for seeds and biotechnology US\$2.37 billion.”).

A. MODERN AGRICULTURE'S CRUCIAL ROLE IN ECONOMIC DEVELOPMENT

The vital importance of food to physical, economic and cultural development and the importance of efficient, sustainable production, makes advanced agricultural technologies the best way of meeting the world's basic food needs while dealing with population growth and environmental challenges.¹⁵ While the productivity gains of the U.S. agricultural sector over the last half-century in particular are well documented,¹⁶ the important role of agro-biotechnology in continuing increased yields and growth in total productivity may be less well understood. Compared to traditional breeding methods, biotech-enabled agriculture methods and technologies have dramatically accelerated yields. As one global thought-leader has documented:

¹⁵ See Motes, p. 14. See also recent remarks of Mark Lynas: "So my message to the anti-GM lobby, from the ranks of the British aristocrats and celebrity chefs to the US foodies to the peasant groups of India is this. You are entitled to your views. But you must know by now that they are not supported by science. We are coming to a crunch point, and for the sake of both people and the planet, now is the time for you to get out of the way and let the rest of us get on with feeding the world sustainably." Available online at: <http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/> (last visited on January 15, 2013).

¹⁶ See David B. Oppedahl, "The Role of R&D in Agriculture and Related Industries: Today and Tomorrow—A conference summary," Chicago Fed Letter, ESSAYS ON ISSUES THE FEDERAL RESERVE BANK JANUARY 2008 OF CHICAGO NUMBER 246a," p.1 ("[I]n the 1981–2004 period, two-thirds was derived from growth in total factor productivity (TFP), which reflects changes in technology and other factors rather than labor-saving productivity alone. ").

Biotech crops have benefited agriculture by enhancing productivity gains and increasing economic returns while reducing pesticide usage and lowering greenhouse gas emissions. Agricultural R&D has helped meet the rising demands for food, feed, and fuel, positioning agriculture for more advances in the future.¹⁷

The process of assimilation and dispersion of new technologies is time-consuming and depends on a range of local variables.¹⁸ While global crop productivity has grown consistently over the past number of decades, there is anxiety in many quarters about whether it is on pace to meet the demands for food expected by 2050. Biotech-enabled methodologies and technologies are increasingly important to face the challenges of the 21st century.

B. CRITICAL ROLE OF PRIVATE TECHNOLOGY TRANSFER IN GLOBAL AGRICULTURAL DE- VELOPMENT

Agricultural innovation followed the traditional model where publicly funded research in developed and developing countries outpaced private investment until the 1990s:

¹⁷ See Motes, p. 13.

¹⁸ See Motes, p. 13 (“[S]uccess of modern systems depends on the development and maintenance of soil fertility through the specific provision of nutrients when they are depleted; of machine power and technology to create soil conditions necessary to promote plant growth with minimal disturbance and minimal soil loss; of the use of improved genetics for crops and livestock to enhance yields, quality and reliability; and, on modern genetic and other techniques to protect plants and livestock from losses to competing plants, diseases, drought insects and other threats.”).

Twenty years ago universities and public laboratories in the DCs did all the basic and strategic research and this created a global commons of intellectual property. Now Monsanto and Syngenta lead and the Consultative Group on International Agricultural Research (CGIAR) and the rest of the international public systems tend to follow.¹⁹

Growth of biotechnology methodologies and technologies require investment of intensive resources over a long time-period, development of large genetic databases and validation through field-testing.²⁰ This has led to a fundamental realignment, “with the private sector now investing significantly more than the public sector in biotechnology R&D.”²¹

¹⁹ J. Piesse and C. Thirtle, p. 9.

²⁰ Oppedahl, p. 2.

²¹ Clive James, p. 16 and p. 9. (“[A]s farmers use more purchased inputs and as the value-added in agriculture increasingly moves off the farm to the marketing and processing subsectors, it is likely that the incentives for private sector investments in agricultural research will grow. With current private sector global revenues in fertilizers, seeds, pesticides, and animal health alone estimated conservatively at approximately \$70 billion per year, the private sector is an essential partner for the global public sector engaged in agricultural research.”). See also <http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/> (last visited on January 15, 2013) (“It now costs tens of millions to get a crop through the regulatory systems in different countries. In fact the latest figures I’ve just seen from CropLife suggest it costs \$139 million to move from discovering a new crop trait to full commercialisation, so open-source or public sector biotech really does not stand a chance. There is a depressing irony here that the anti-biotech campaigners complain about GM crops only being mar-

Given the adverse agricultural biotechnology environment in Europe, vibrancy in American agricultural innovation has become the engine for innovation and transfer of technology to partners in the developing world.²² Compensation paid by Petitioner and other American farmers to license advanced agricultural technologies like Roundup Ready® soybeans, accordingly, are an important part of the social contract supporting continued technology transfer needed for productivity gains and poverty reduction efforts in developing countries around the world. Petitioner's and other similarly situated parties refusal to compensate Respondents for continued use of the Roundup Ready® technology would upset the carefully constructed balance of benefits fueling technology transfer globally, potentially reversing hard-won gains of subsistence farmers in the developing world and elsewhere.

keted by big corporations when this is a situation they have done more than anyone to help bring about.”).

²² See, e.g., <http://www.asti.cgiar.org/private-sector-research> (last visited on January 14, 2013) (“Private investment in agricultural research is a potentially important contributor to increasing productivity and reducing poverty in developing countries. ASTI, in close collaboration with Rutgers University and McGill University, collected and analyzed detailed information on private agricultural R&D capacity and investment trends in Bangladesh, India, Kenya, Pakistan, Senegal, South Africa, Tanzania, and Zambia. . . Findings indicate that across all study countries, technologies transferred from foreign sources by private companies were found to be a primary driver of innovation, especially in the areas of crop protection, agrochemicals, poultry farming, agricultural machinery, and processing. While many surveyed companies conducted some level of their own in-country research, many were also engaged in the transfer of technologies from abroad.”).

CONCLUSION

For the foregoing reasons, BayhDole25 asks that this Court affirm the decision of the U.S. Court of Appeals for the Federal Circuit. The Court should decline Petitioner's invitation to undermine the letter and spirit of the Technology Agreement. Any other result would turn the Patent Act on its head, deprive a broad class of innovators rights in the fruits of their inventive endeavors, undermine U.S. long-term R&D efforts, and dismantle the social contract for technology transfer of advanced technologies critical for global development and poverty reduction.

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Respectfully submitted,

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