

# The Green Revolution's Alignments with American Agribusiness

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## Abstract

During the past fifteen years, a wave of Western-led development efforts has aimed to transform agriculture across Africa under the banner of the Green Revolution in Africa. These efforts build directly upon a longer history of American-led Green Revolution development projects, that began with the Rockefeller Foundation-sponsored efforts in Mexico in the 1940s and 1950s. While the early Green Revolution programs that began in Mexico and expanded throughout much of Latin America and Asia during the 1960s were largely public sector-led projects, today's Green Revolution involves a growing number of public-private partnerships between national and international development organizations and multinational corporations. My research at the Rockefeller Archive Center aimed to provide historical context for the development of the "partnership paradigm" in contemporary agricultural development. In what ways, I ask, do public-private partnerships either extend or depart from previous Green Revolution projects? While today public sector researchers often collaborate with colleagues in the private sector, how did the early Green Revolutionaries understand their efforts in relation to commercial agribusiness? While scholars have persuasively argued that the Green Revolution was resolutely capitalist in its orientation—indeed, the "Green" in Green Revolution was originally coined to suggest that American-led capitalist agricultural development would serve as a buffer against the expansion of a "Red" communist revolution in the Third World—few scholars have traced how and where early Green Revolution programs aligned with US agribusiness interests. In this research report, I survey some initial findings from my archival research along these lines.

# **The Green Revolution's Alignments with American Agribusiness**

My research at the Rockefeller Archive Center (RAC) was part of my dissertation research for a project that examines the politics of several contemporary agricultural development projects working at the nexus of food security and climate change adaptation.<sup>1</sup> Because the contemporary projects that I study involve many of the institutions and scientific developments established as part of the Rockefeller Foundation (RF) and Ford Foundation (FF)-funded “Green Revolution” development initiatives that began in the 1940s and reached their pinnacle in the 1960s, part of my dissertation engaged with the earlier phases of the Green Revolution. The contemporary projects that I examined in my dissertation were public-private partnerships involving the International Center for the Improvement of Maize and Wheat (CIMMYT), the National Agricultural Research Systems of various sub-Saharan African countries, and several of the world’s largest multinational agribusiness companies. The projects are examples of an increasing trend toward partnerships between public sector agricultural science and development institutions like CIMMYT (a member of the multi-lateral international consortium of agricultural research and development centers, the CGIAR) and private agribusiness companies. As such, they merit scholarly attention for how they are changing the practice of agricultural science and reshaping practices and policies related to agricultural development. In my research, I pursue these questions through interview-based research with officials who are currently working or have previously worked for the institutions involved in these public-private partnerships. In addition, I am also conducting archival research on the institutional “roots” of these contemporary projects. Because much of the work being done in contemporary efforts to bring a “Green Revolution” to Africa has direct institutional and ideological ties to earlier Green Revolution project’s funded by the Rockefeller and Ford Foundations, this archival research provides essential historical context in which to situate the contemporary projects that my research examines. Regarding the “partnership paradigm,” my archival research seeks to better understand how early leaders in the Green Revolution approached questions of the public and private sector, and

also how they approached working with American agribusiness companies. My research at the Rockefeller Archive Center (RAC) was fruitful for generating material that will allow me to better examine these questions. In this research report, I briefly sketch several of the most useful findings from my time at the RAC and offer some preliminary arguments that I developed further in my dissertation.

In my research, I am especially interested in examining the politics of what is widely recognized as the earliest “Green Revolution” project: the Rockefeller Foundation-funded Mexican Agriculture Program (MAP) of the 1940s and 1950s. As several historians have shown, this project became a sort of “model” program for later Green Revolution efforts in Latin America and Asia in the 1960s.<sup>2</sup> The MAP was also the institutional predecessor for CIMMYT, which became a central institution in international maize and wheat development activities. Today, CIMMYT is involved in a wave of development efforts seeking to transform agriculture across Africa. My research is interested in tracing this institutional lineage, in particular mapping out continuities between the perspectives of the earliest Green Revolutionaries that worked at the MAP and CIMMYT and the architects of today’s Green Revolution in Africa. Since public-private partnerships between public sector institutions like CIMMYT and national agricultural research centers and multinational agribusiness corporations have become a key facet of contemporary agricultural development, I have been interested in tracing the degree to which these kinds of partnerships either extend or depart from previous Green Revolution projects. The political economic context of today’s development partnerships differs dramatically from that of the early Green Revolution era. This is particularly true insofar as private companies are now more likely to hold intellectual property rights over much of the genetic material involved in plant breeding and biotechnology development. This development has led to an increasing need for public sector institutions to find ways to work with private companies, through licensing arrangements that allow them to use the companies’ proprietary technologies for research and development. At the same time, the international public sector institutions that were central to Green Revolution development efforts have long worked closely with agribusiness. In his classic work on the history of plant biotechnology and the transformations of American agribusiness following the development of hybrid corn breeding and

later genetically-modified crops, sociologist Jack Kloppenburg has argued that the international agricultural research institutions served as conduits through which Northern agribusiness could accumulate plant genetic material (seeds) from the Global South.<sup>3</sup> And in my own conversations with former CIMMYT officials, I have heard anecdotally that American agribusiness companies benefited directly from early CIMMYT seed collecting and breeding efforts. As one former CIMMYT official explained, representatives from the American hybrid seed company, Pioneer, worked side-by-side with CIMMYT scientists to collect and catalogue Mexico's maize. Based upon these insights, I was interested in pursuing the question of how closely American scientists working in early Green Revolution projects collaborated with private seed companies. To what degree did the key figures in early Green Revolution efforts see their work aligning with the interests of private companies? Further, what role did private companies play in the overall orientation of Green Revolution efforts? As historians have shown, the Green Revolution was largely a project of US government agencies and American philanthropies working with and through the state. And while scholars have persuasively argued that the Green Revolution was resolutely capitalist in its orientation—indeed, the “Green” in Green Revolution was originally coined to suggest that American-led agricultural development would serve as a buffer against the expansion of a “Red” communist revolution in the Third World—few scholars have traced how and where early Green Revolution programs aligned with US agribusiness interests. During my week at the RAC, I developed several “leads” that will be useful for further pursuing this line of inquiry.

## **The Mexican Agriculture Program and CIMMYT's Early Alignments with American Agribusiness**

J. George Harrar, the first director of the MAP who later became director of the Rockefeller Foundation's agriculture program and, eventually, president of the RF, declared that one of the most significant accomplishments of the MAP was that it had created opportunities for private investment. In a 1962 oral history

recorded by the RF, Harrar argued that in the years when the MAP was first founded, there was not enough to attract foreign capital to Mexico's agricultural sector.<sup>4</sup> The work of the MAP, though, had changed this. Harrar noted a range of Mexican businesses that had cropped up during the MAP years, including those in livestock feed, food canning, vegetable products, fertilizers, insecticides and fungicides, and agricultural machinery. "It is [also] probable," Harrar argued, "that at least some of these businesses will become elements of an international network, thus continuing a beneficial relationship, between certain sectors of American business and industry and their Mexican counterparts" (188). He stated that many of the "best known" US corporations were already operating in the country, including a number of agricultural companies. Harrar made the case that increased foreign capital moving into and through Mexico would benefit the country. Importantly, he emphasized the importance of the need to change *public* policy. It is the need for more "efficient public administration," Harrar stressed, that will ultimately create the kind of private sector investment he called for. These remarks, made in 1962, during the early years of Harrar's tenure as leader of the RF, set the stage for the Foundation's ensuing international agricultural development efforts. As several scholars have argued about the Green Revolution, the efforts of the RF, the Ford Foundation, and USAID were very much directed toward changing national policies.<sup>5</sup> The work to develop and distribute high-yielding varieties of commercial crops were largely directed *through* states. Harrar's comments suggest that the interests of "American business and industry" were never far removed from the concerns of RF leadership.

This sentiment appears throughout the records of other key figures in the RF's Mexico projects. Edwin Wellhausen, the director of the MAP following Harrar and the first director general of CIMMYT, was outspoken about the need to privatize the seed industry.<sup>6</sup> Wellhausen argued that governments were not capable of effectively producing hybrid maize, and that the "only way" for Mexico's hybrid maize industry to really develop was to put it in the hands of private companies.<sup>7</sup> In his tenure as director of the MAP and CIMMYT, Wellhausen also collaborated with American seed companies in several ways. His officer diary details several instances in which he and other Rockefeller Foundation-funded scientists in Mexico either had phone conversations with or hosted officials from American

agribusinesses. Through these meetings, MAP officials shared maize varieties for breeding and discussed the political and economic issues of maize in Mexico with officials from companies like Pioneer Hybrid Corn Company, DeKalb, and Corn Products.<sup>8</sup> Wellhausen's officer diary notes that the leaders of American companies Pioneer and DeKalb visited the MAP in 1958 and 1959. In another example, in 1961 the president of the DeKalb company, Thomas Roberts, wrote to Wellhausen to thank him for the support that the MAP had offered DeKalb in Mexico. Roberts said, "We appreciate very much the cooperation we have had from you and your people in our work with sorghum and corn in Mexico."<sup>9</sup> Wellhausen also sent genetic material (seeds) to American companies working in both the US and abroad. As one example of several entries appearing throughout Wellhausen's diary, a 1966 entry describes a conversation between Wellhausen and Robert Wallace, a representative of Pioneer. "Pioneer hybrid," the entry notes, "is moving ahead with the development of tropical hybrids in Jamaica. The elite materials have been provided from Mexico." The MAP and CIMMYT also tested some of these same companies' maize varieties.<sup>10</sup> Wellhausen also traveled to the US to meet with seed company officials and spoke at agribusiness-funded conferences.<sup>11</sup> In one case, Wellhausen offered political advice to the leadership of the DeKalb company, mailing them a copy of the Mexican seed law and talking to them about how they might work their way into a country that had historically been opposed to private business in seed production.<sup>12</sup> In correspondence with the president of DeKalb, Wellhausen wrote: "I strongly believe that the only way we are going to get any volume of hybrid seed used in Mexico will be with the aid of organizations like the one you represent."

In a series of oral histories of the Rockefeller Foundation's agricultural program officers recorded in 1966, other CIMMYT officials also spoke about the importance of bringing a commercial maize system to Mexico and other developing countries. Elmer Johnson, a maize geneticist at CIMMYT and director of the organization's Central American Maize Improvement Program, described working with American companies Northrop King, Pioneer, and DeKalb, testing their varieties in Mexico and sending material to the companies in the US.<sup>13</sup> Robert Osler, the deputy director of CIMMYT in 1965, noted that Pioneer was using a CIMMYT line in its breeding program at the time.<sup>14</sup> These kinds of collaborations were not limited to the RF's work in Mexico. The Rockefeller

Foundation advocated for the DeKalb company to gain approval to produce maize seeds in cooperation with its Indian Agriculture Program in the early 1960s. Several of the oral histories of RF leadership recorded in 1966 talk about how the Foundation played a critical role in getting DeKalb into India. Osler was also involved in negotiations between the RF, USAID, and the Indian government regarding India's relationship with the DeKalb company. The RF was influential in lobbying the Indian government to change its policy regarding pricing so that DeKalb could begin to operate in India.<sup>15</sup>

While the *modus operandi* of organizations like CIMMYT and the Indian Agricultural Program was to produce new varieties for the national agricultural systems of the countries in which they operated, their collaborations with American agribusiness suggest that these institutions also contributed to the expansion of these companies. Though RF officials were careful to distinguish their work from explicitly commercial interests, they frequently offered advice to, exchanged information and plant material with, and attended conferences alongside agribusiness representatives. And while the records of early RF agricultural program leadership suggest that though there were clear differences between the orientation of their research and development (between CIMMYT's focus on increasing yields in what they saw as underdeveloped areas and the companies' emphasis on profits), the approaches of the American companies and CIMMYT overlapped in their emphasis on building market-based agricultural systems. Thus, CIMMYT's position in relation to the trend toward increasingly privatized agricultural research and development is somewhat complicated. While they were working with public funds and through public (state) systems, early CIMMYT leaders envisioned this public work as a kind of "stop-gap" that could help build more commercially-oriented systems. They often referenced the US as a model for this development trajectory.<sup>16</sup>



## **Agribusiness and the “World Food Problem”**

As the Rockefeller Foundation and Ford Foundation began to ramp up their efforts to improve agriculture in countries in Latin American and Asia during the 1960s, the subject of hunger in the Global South gained increasing attention from agribusiness companies in the US. In 1967, representatives from some of the largest American corporations met with government and private foundation leadership in New York City for a conference on “The World Food Problem: Private Investment and Government Cooperation.”<sup>17</sup> Leadership from oil companies, agribusiness, chemical companies, and banks gathered to discuss how their companies might benefit from foundation- and government-led international agricultural development efforts. Officials from the US Department of Agriculture (USDA), the US Agency for International Development (USAID), and President Johnson’s Science Advisory Committee asked companies like Shell, Cargill, Pioneer Hi-Bred Corn Company, Dow Chemical Company, and others, to join in their efforts to address “the hunger issue.”<sup>18</sup>

Herbert Salzman, the director of USAID’s recently formed Office of Private Resources, appealed to the common interests of AID and the corporations at the conference. “I do not suggest that all the objectives of the Agency for International Development and all the objectives of your firms are identical,” Salzman said. “I do suggest that many are complementary and in many respects parallel. Nowhere is this more so than in the subject which brings us together today. How to win the global War on Hunger.” Salzman touted several of the Agency’s risk reduction tools that American companies could take advantage of in developing countries, arguing that American agribusinesses were already benefiting from these programs. Salzman told of USAID pushing the Indian government to liberalize the fertilizer industry. President Johnson had just that year announced two new offices in AID: the Office of War on Hunger and the Office of Private Resources. Salzman talked about how the two wings of AID would work closely together. “The War on Hunger Office will look to my Office of Private Resources to stimulate potential investors, create effective incentives, write the ground rules for investment guaranties, and otherwise work out the financial deals involved in private investment.” The new office would “seek, across-the-board, greater

involvement of U.S. business and other private resources in our development efforts.” Salzman’s remarks demonstrate an increasingly common trend within the international development community, spearheaded by AID, that the role of foreign “aid” was to catalyze market-led private sector growth—and open up opportunities for the expansion of US business interests.

The US Secretary of Agriculture, Orville Freeman, also spoke to the conference. Calling Karl Marx a “city boy,” Freeman mocked communist agriculture, calling it “a mess.” Referencing arguments made by Secretary of Defense Robert McNamara, Freeman detailed how Third World peasants might turn to communism as an answer to their hunger and poverty. Quoting McNamara, Freeman stressed that US intervention must stave off this impending crisis: “Security,” he argued “is development.” Freeman then tied this development mission to the interests of the corporations gathered in the audience. When it came to American efforts to help “each county feed itself,” he argued, “Our private sector’s potential needs to be tapped.” He then asked the corporate leaders to tell him what they needed in order to expand their operations in the developing world. “If you all in the private sector can come together and work out the kind of things that you feel to be necessary, I can assure you that your recommendations will get careful and thoughtful and detailed consideration in the highest places in our government.” Here we see an emerging triad of security/development/the profit motive that would drive the range of efforts under the banner of the “Green Revolution.”

The consensus around this triad gained traction throughout the 1960s and early 1970s. Conferences devoted to agribusiness and the “world food problem” proliferated. The prominence of the discourse about “feeding the world” through American agribusiness is indicated in an exchange between the RF’s director of agricultural sciences and the president of the DeKalb company in 1967. Discussing the possibility of a Rockefeller Foundation-funded conference on agribusiness and the hunger issue, the DeKalb president quipped that “there have been so many symposia on the hunger problem that it has almost become a joke.”<sup>19</sup> The RF took an active role in these conferences and Foundation leadership was key in promoting the “world food problem” as an issue that American corporations

might be well-suited to deal with. In his tenure as president of the RF (1961-1972), Harrar would make the case for increasing the role of the private sector in agricultural development and foreign aid efforts. In 1965, he addressed a meeting of the US Advisory Committee on Private Enterprise in Foreign Aid. Speaking alongside US Secretary of Agriculture Orville Freeman, Harrar delivered remarks under the title: “The inhibitors to increased agricultural development in developing nations, with emphasis on those critical areas where non-governmental resources might be applied.”<sup>20</sup> Following his retirement as RF president, Harrar continued to serve as an RF consultant for programs such as the Foundation-sponsored 1974 conference “Science and Agribusiness in the Seventies.”<sup>21</sup> Harrar served on the steering committee for the conference, which convened international agribusiness leaders in London under the theme of “stimulating agribusiness investment in developing nations.” Reflecting the growing interests on the part of agribusiness in partnering with Rockefeller Foundation- and government-funded development programs, a committee was formed following the London meeting with the stated goal of linking the concerns of agribusiness with international agriculture research, naming the CGIAR centers, in particular.

## **Conclusion and Points for Further Research**

The archival material I have reviewed in this research report, along with other useful material I gathered during my visit to the RAC lead me to several questions that I will continue to pursue in my research. These include questions about how CGIAR institutions negotiated their mission to produce “global public goods” with the shifting political economic landscape that emerged as agribusiness companies consolidated in the late twentieth and early twenty-first century.<sup>22</sup> The days of “free exchange” of plant genetic material (seeds) are long over. Although public sector varieties are largely available to all interested plant breeders, plant variety protection laws have made it so that private sector-developed varieties are increasingly protected as proprietary material. Today’s massive agribusinesses developed their patented varieties through the lineage of varieties that were largely obtained free-of-charge from the developing world, as scholars like Jack

Kloppenburg have argued.<sup>23</sup> The sources I have reviewed here show how Rockefeller Foundation officials often facilitated that process. Yet further questions about how these material exchanges benefited agribusiness remain. Moreover, we might also ask how these collaborations between the public and private sector changed the overall landscape of agricultural development. How did exchanges of knowledge, personal, and materials (especially, seeds) between Green Revolution projects and agribusiness reshape the efforts of both public and private sector institutions across what Raj Patel has called the “long Green Revolution”?<sup>24</sup> My preliminary findings also raise questions about how CGIAR scientists understand their institutions’ history in relation to the interests of agribusiness. How have scientists working within the CGIAR negotiated their role as public sector scientists as their institutions continued to seek partnerships with multinational agribusiness corporations? Finally, the materials surveyed here raise questions about how American scientists *and* agribusinesses mobilized the expansion of both the Green Revolution and capitalist agriculture through claims to plant genetic material as the “common heritage of mankind.” How did underlying ideas about development and security—often informed by racial and colonial logics—inform this position?<sup>25</sup> These questions demand further attention from critical scholars examining the politics of the Green Revolution.

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<sup>1</sup> I visited the RAC during the summer of 2016. Thanks to Lee Hiltzik and Mary Ann Quinn for their helpful guidance. I completed my dissertation, “‘Climate Smart’ Seeds: Race, Science, and Security in the Global Green Revolution,” in 2019 (University of Minnesota, Department of American Studies).

<sup>2</sup> Important contributions to the scholarship on the Mexican Agriculture Program and the broader Green Revolution include: Nick Cullather, *The Hungry World: America’s Cold War Battle against Poverty in Asia* (Cambridge, MA: Harvard Univ. Press, 2013); Raj Patel, “The Long Green Revolution,” *Journal of Peasant Studies* 40, no. 1 (January 2013): 1–63, <https://doi.org/10.1080/03066150.2012.719224>; Tore C. Olsson, *Agrarian Crossings: Reformers and the Remaking of the US and Mexican Countryside* (Princeton: Princeton University Press, 2017); John H. Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War* (New York: Oxford University Press, 1997); Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880 - 2002*, *Contributions in Latin American Studies* 22 (Westport, CT: Praeger, 2003).

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<sup>3</sup> Jack Ralph Kloppenburg, Jr., *First the Seed: The Political Economy of Plant Biotechnology*, 2<sup>nd</sup> edition (Madison, WI: University of Wisconsin Press, 2005).

<sup>4</sup> “J.G. Harrar oral history,” Rockefeller Foundation, 1961, Folder 308, Box 42, Subseries 2.2, series 2, J. George Harrar Papers, Rockefeller Archive Center, Sleepy Hollow, New York (hereafter, RAC). Subsequent citations from this oral history are cited in text by page number.

<sup>5</sup> See especially: Patel, “The Long Green Revolution,” and Cullather, *The Hungry World*.

<sup>6</sup> “Edwin J. Wellhausen oral history,” Rockefeller Foundation, June 28, 1966, Folder 1, Box 25, RG 13, Oral Histories, Rockefeller Foundation Records, RAC, pg 162.

<sup>7</sup> *Ibid.*, 102.

<sup>8</sup> “Edwin J. Wellhausen: Officer Diary,” Rockefeller Foundation Records, 1959, Record Group 12. RAC.

<sup>9</sup> “Thomas Roberts to E.J. Wellhausen,” June 5, 1961, Folder 162, Box 14, Series 1.1, RG 6.13, Rockefeller Foundation Records, RAC.

<sup>10</sup> “Elmer Johnson oral history,” Rockefeller Foundation, Box 17, RG 13, Oral histories, Rockefeller Foundation Records, RAC.

<sup>11</sup> Wellhausen visited Pioneer in Iowa in September 1958 and gave a talk at a conference sponsored by the International Marketing Institute and United Fruit Company Foundation, Inc., in Cape Cod, Massachusetts in June 1967. See his Officer Diary for these details.

<sup>12</sup> “E.J. Wellhausen to Loring Jones,” June 9, 1961, Folder 162, Box 14, Series 1.1, RG 6.13, Rockefeller Foundation Records, RAC.

<sup>13</sup> “Elmer Johnson oral history,” pgs. 38-39 and 59-60.

<sup>14</sup> “Robert Osler officer diary,” October 25, 1965, Box 359, RG 12, Rockefeller Foundation Records, RAC.

<sup>15</sup> This incident was related in both Osler and Wellhausen’s oral histories. Wellhausen said that India had permitted DeKalb to operate “with a certain amount of prodding by the RF” (pgs. 106-107).

<sup>16</sup> “Elmer Johnson oral history,” 39.

<sup>17</sup> “The World Food Problem: Private Investment and Government Cooperation,” Conference Transcript, August 11, 1967, Folder 416, Box 16, Series 2, International Basic Economy Corporation Records, RAC. Subsequent citations from this conference are from this folder.

<sup>18</sup> Conference participants included representatives from Shell, Cargill, Gulf Oil, Pioneer Hi-Bred Corn Company, Standard Oil, United Fruit, Esso Chemical Company, H.J. Heinz, Deer and Company, Ford Motor Company, the Ford Foundation, Dow Chemical Company, Archer Daniels Midland Company, DeKalb Agricultural Association, Inc., Chase Manhattan Bank, Monsanto Company, Bank of America, Chas. Pfizer and Company, DuPont, Corn Products Company, Rockefeller Foundation, and others.

<sup>19</sup> “S. Wortman Officer Diary,” October 18, 1967, folder 4, Box 528, RG 12, Officer Diaries, Rockefeller Foundation Records, RAC.

<sup>20</sup> “Advisory Committee on Private Enterprise in Foreign Aid: Meeting of February 25-26, Draft Agenda,” 1965, Folder 92, Box 13, Series 1.4, Harrar Papers, RAC.

<sup>21</sup> “Science and Agribusiness in the Seventies: A Conference,” Conference Program, February 18-20, 1974, 1965, Folder 92, Box 13, Series 1.4, Harrar Papers, RAC. Representatives from Cargill, Shell, Archer Daniels Midland, Exxon, Nabisco, Nestle, Heinz, the USDA, CIBA-GEIGY, the Rockefeller Foundation, and Sandoz AG attended the London conference).

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<sup>22</sup> Sally Brooks, “Is International Agricultural Research a Global Public Good? The Case of Rice Biofortification,” *Journal of Peasant Studies* 38, no. 1 (January 2011): 67–80, <https://doi.org/10.1080/03066150.2010.538581>.

<sup>23</sup> Kloppenburg, *First the Seed*.

<sup>24</sup> Patel, “The Long Green Revolution.”

<sup>25</sup> I explore this question in a journal article, which draws on research conducted at the RAC. See: Aaron Eddens, “White Science and Indigenous Maize: The Racial Logics of the Green Revolution,” *The Journal of Peasant Studies* 46, no. 3 (April 16, 2019): 653–73, <https://doi.org/10.1080/03066150.2017.1395857>.