

Fighting World Hunger on a Global Scale: The Rockefeller Foundation and the Green Revolution in Mexico

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The agricultural transformation of less developed countries, commonly referred to as the Green Revolution, is the result of one of the most ambitious international development programs of US-American philanthropy. In particular, the Rockefeller Foundation (RF) was one of the first philanthropic organizations to devote substantial attention to solving problems of world hunger after World War II. The RF led the first efforts in the 1940s to increase the productivity of wheat and corn in Mexico and therefore became a central agency in altering agricultural practices on a worldwide scale. What has been called the Green Revolution was a vast and technically complex pattern of agricultural modernization, "aimed at increasing the productivity of land by means of the introduction of a science-based technology."¹ The technological package consisted of seeds of new high-yielding varieties in conjunction with the capital-intensive utilization of chemical fertilizers and insecticides, disease-control measures, agricultural machinery and soil and water management.

The Mexican Agricultural Program (MAP) that the RF initiated in 1943 was not only a pioneering effort in the development of scientific agriculture, but also in the creation of a

paradigm for technical assistance in the following decades. The RF formula of promoting agricultural research and developing new high-yielding technologies gradually crystallized into a clear-cut and simple development strategy: the transfer of Western agricultural technology to less developed regions. Significant increases in the production of basic food crops laid the ground work for similar programs during the 1950s and 1960s in Latin America, Asia and Africa, and MAP served as a prototype of technical assistance programs in the literature on agricultural modernization.² But by the time RF agronomist Norman Borlaug received the Nobel Peace Prize in 1970 and was praised by the Award Committee as the man who “made it possible for the developing countries to break away from hunger and poverty,”³ the Green Revolution already had produced an extensive controversy about the applicability of Western agricultural models. While the Green Revolution remained for many observers the triumph of high science over hunger, the critics began to attack its economic, social and environmental effects.⁴

In order to conceptualize the Green Revolution as a preliminary model for rural modernization, my research project focuses on the origins, premises and aims of the development of scientific agriculture in Mexico, the birthplace of the “Green Revolution.” During May, 2009 I had the opportunity to visit the Rockefeller Archive Center for the second time. With the generous support of a Grant-in-Aid I was able to intensify my research in the extensive documentary holdings. The existing records provide a broad and detailed picture of the Rockefeller Foundation’s involvement in agricultural modernization projects, from the initiation of the Mexican Agricultural Program (MAP) in 1943 to the establishment of the International Maize and Wheat Improvement Center and the following internationalization of RF-sponsored research in the 1950s and 1960s.⁵

I spent ample time investigating the documents in Record Group 3, Administration, Program and Policy (RG 3.2. Series 923 and Series 915), which include some of the RF’s major policy papers concerning agricultural development. The files in Record Group 1.1. and

Record Group 1.2, Projects (Series 323, Mexico) allowed me some insights into the general ideas held by the RF concerning scientific agriculture as well as how these ideas were integrated with Mexican government institutions. In order to identify the key features of the Mexican Agricultural Program, I extensively reviewed the files of the RF's field office in Mexico in Record Group 6.13. These papers include internal correspondence, memoranda, project files and annual reports related to MAP. They detail the process by which the RF moved into Mexico and illuminate the Rockefeller Foundation's perception of the political, social and economic situation in the country. The Oral History interviews (RG 13) with numerous scientists who were key figures in the development and the diffusion of the Green Revolution proved to be invaluable to my research. They are full of unique information and often contain very personal and honest opinions about the discussions and deliberations within the Rockefeller Foundation about the development of its agricultural program.

In order to understand how MAP become such an appealing example for technical assistance for policy-makers and development institutions in the 1950s and 1960s, but also raised widespread criticism in the 1970s, I would like to specify several features which distinguished MAP from earlier efforts of technical assistance.

First, MAP was an operational program, based on an agreement between a private foundation and the Mexican government. The RF practice before the start of MAP had been to make direct grants of money to universities and other existing research institutions and leave it to them to formulate, organize, and conduct the specific research.⁶ With the Mexican Agricultural Program the RF was established an approach that went beyond its traditional role as a provider of funds. It was the first time in the history of agricultural assistance that a private foundation aimed at establishing a scientific infrastructure in a foreign country.⁷ RF officers exerted effective control over the project, defined the research agenda and took direct responsibility for running the program. They were responsible for the hiring of the top-level scientific personnel and thereby ensured the development of a "proper" scientific manner as a

blueprint of U.S. scientific and agricultural practices. Thus, the Rockefeller Foundation created an effective and institutionalised research apparatus in order to organize and transform Mexican agriculture.

Second, the clear-cut purpose of MAP was to improve Mexican food-crop production. The problem definition of the Rockefeller Foundation was quite simple: Mexican lands were not sufficiently productive. And indeed, the success of MAP in terms of production between 1945 and 1965 was very significant. The overall productivity of Mexican agriculture increased more rapidly than the population and in 1956 self-sufficiency in wheat and corn was achieved. In 1958, Mexico became for the first time in its history a wheat-exporting country. But by defining the research agenda only in terms of production, the RF avoided fundamental political questions about the allocation and control of resources and remained largely oblivious to the problem of food distribution and the question of who would benefit from an increase in productivity. The keyword for the foundation was scientific research, not economic justice. Most notably Cynthia Hewitt has argued that the focus of MAP on developing the very highest yielding materials benefitted large landholders with easy access to capital and material, whereas the large majority of small-scale peasants were unable to effectively use the new technologies. “In theory, the new ‘technological package’ was scale neutral, applicable to farms of any size. But given the reality of the Mexican countryside,” she argues, this technological package “was most profitably utilized only by the best-endowed, and most politically powerful, farming groups in the nation.”⁸

Third, the Rockefeller Foundation trustees were well aware that MAP was consistent with broader strategical and geopolitical concerns of the U.S. government. The RF wanted to ensure the counter-revolutionary modernization of Mexican agriculture, and the goals of MAP coincided with efforts of the Mexican government under president Camacho (1940-1946) to temper the socialist radicalism of the Cárdenas government (1934-1940). Lázaro Cárdenas had initiated a far-reaching program of land reform in favour of peasant

communities, but the new president, Manuel Ávila Camacho, wanted to recommit the country to development based on “private enterprise” and modernization after the capitalist model, which did not fit well with the peasant-based agrarian structure created by the former government.⁹ Altogether, MAP was an alliance between a U.S. based foundation that supported liberal democratic capitalism and a Mexican government that sought to create a new economy based on industrialization and commercial agriculture. In this case, the modernization agenda of the recipient merged perfectly with the goals of the Rockefeller Foundation.

Finally, records at the Rockefeller Archive Center reveal that RF officers were well aware of the broader objectives of American foreign policy. A strategic paper issued by the RF asserted that “whether additional millions [...] will become Communists will depend partly on whether the Communist world or the free world fulfils its promises. Hungry people are lured by promises, but they may be won by deeds. Communism makes attractive promises to underfed peoples. Democracy must not only promise as much, but must deliver more.”¹⁰

But even if the RF had strong economic and geopolitical incentives to support the Camacho government, I did not find much historical evidence at the RAC that the Rockefeller Foundation was mainly preoccupied with the vulnerability of the Rockefeller family’s massive investments in Mexico.¹¹ MAP was in fact primarily motivated by humanitarian concerns and an impulse to help the Mexican farmers. It profoundly reflected the deep belief of the RF’s trustees and managers in the universally beneficial applicability of science and in its potential to transform societies from traditional to modern.¹² The implicit assumption underlying all agricultural activities was that a “traditional” agricultural sector and poor nutrition were the main factors in retarding Mexican development. The solution to Mexico’s agricultural problem was just a question of a proper management of research and education and the transfer of U.S. agricultural technology to the Mexican soil.¹³

The Rockefeller Foundation acted as a missionary agent, convinced that it would “modernize” a “traditional” country for the better. Thus, the RF effectively foreshadowed what was to become in the 1950s and 1960s the discourse of modernization theory and the practice of “Third World Developmentalism” – and established simultaneously a new pattern of technical assistance and technology transfer that would function as a model for subsequent American foreign aid programs in the 1950s and 1960s. Indeed, MAP and subsequent programs in other Latin American countries had produced remarkable results – and were therefore appealing examples for modernization theorists that the Western world could transfer “its technical skills to a friendly neighbor at relatively little cost.”¹⁴ But the spectacular growth of agricultural production in Mexico was largely based upon the output of a small percentage of farm land, operated by large commercial producers that could afford the capital-intensive technologies, whereas the majority of the rural population was still producing at a subsistence level. As the work of several anthropologists, sociologists and historians has shown, the MAP did very little for the rural poor and deeply affected social relations on the countryside.

ENDNOTES:

¹ This definition stems from: Pearse, Andrew. *Seeds of Plenty, Seeds of Want: Social and Economic Implications of the Green Revolution*. Oxford: Clarendon Press and UNRISD, 1980.

² See for example: Ruttan, Vernon and Yujito Hayami. "Technology Transfer and Agricultural Development." *Technology and Culture* 14 (1973), pp. 119-151 and Schultz, Theodore W. *Transforming Traditional Agriculture*. New Haven: Yale University Press, 1964.

³ "U.S. Agronomist Gets Nobel Peace Prize." *New York Times* (October 22, 1970), p. 253, cited: Cotter, Joseph. *Troubled Harvest: Agronomy and Revolution in Mexico, 1880-2002*. Westport, Connecticut: Praeger Publishers, 2003.

⁴ There is a large body of literature dealing with the Green Revolution. The "official history" of the origins of the Mexican Agricultural Program, is told by Rockefeller Foundation historian in: Cobb, William C. *The Historical Backgrounds of the Mexican Agricultural Program*, March, 1956, Rockefeller Foundation Archives, RG 1.2, Series 323, Box 10, Folder 62, Rockefeller Archive Center; and by MAP scientists: Stakman, E.C., Richard Bradfield and Paul C. Mangelsdorf. *Campaigns against Hunger*. Cambridge: Harvard University Press, 1967. For critical assessments of MAP, see, for example: Dowie, Mark. *American Foundations: An Investigative History*. Cambridge, Massachusetts: MIT Press, 2002; Hewitt de Alcántara, Cynthia. *La modernización de la agricultura mexicana, 1940-1970*. Mexico City: Siglo XXI, 1978; Jennings, Bruce H. *Foundations of International Agricultural Research: Science and Politics in Mexican Agriculture*. Boulder, Colorado: Westview Press, 1988; Esteva, Gustavo. *The Struggle for Rural Mexico*. South Hard, Massachusetts: Bergin and Garvey, 1983; Wright, Angus. *The Death of Ramón González: The Modern Agricultural Dilemma*. Austin: University of Texas Press, 1991.

⁵ In 1960 MAP was phased into International Maize and Wheat Improvement Center (CYMMIT), which later became the archetype for similar crop-centered agricultural research centers throughout the developing world. The effort of the Rockefeller Foundation ultimately led to the establishment of the Consultative Group on International Agricultural Research (CGIAR) in 1971, which was developed and sponsored by the World Bank, FAO, the UNDP and other international agencies; By 1983 there were already thirteen research centers with an annual budget exceeding one million dollars. See Dowie, *American Foundations*, p. 114.

⁶ For an account of early Rockefeller involvement in development projects see: Fitzgerald, Deborah. "Exporting American Agriculture: The Rockefeller Foundation in Mexico, 1943-1953." *Social Studies of Science* 16 (1986), pp. 457-83 and Perkins, John H. *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War*. New York: Oxford University Press, 1997.

⁷ Perkins, John H. "The Rockefeller Foundation and the Green Revolution, 1941-1956." *Agriculture and Human Values* 7 (Summer and Fall 1990), pp. 6-18.

⁸ de Alcántara, Hewitt. "En teoría, el nuevo 'paquete tecnológico' era indiferente a la escala y aplicable a las explotaciones agrícolas de cualquier magnitud. Pero dada la realidad del agro mexicano, sólo utilizaban al máximo sus beneficios los grupos agrícolas de la nación mejor dotados y políticamente más poderosos." (1978), p. 287.

⁹ See Sanderson, Susan Walsh. *Land Reform in Mexico, 1910-1980*. Orlando: Academic Press, 1984, p. 138.

¹⁰ *The World Food Problem, Agriculture, and the Rockefeller Foundation*, Advisory Committee for Agricultural Activities, 21 June 1951, p.4, Rockefeller Foundation Archives, RG 3, Series 915, Box 3, Folder 23, Rockefeller Archive Center. The report was produced by the Advisory Committee for Agricultural Activities as a major policy paper for the

Rockefeller Foundation. The group consisted of Warren Weaver, Elvin C. Stakman, Richard Bradfield, Paul Mangelsdorf and George Harrar.

The paper suggested that the Rockefeller Foundation should expand its agricultural activities to other regions of the world and underlined the significance of agricultural science in the struggle against communist agitation. Hunger and overpopulation were described as the roots of political instability: “What now are the great enemies of the welfare of mankind? Hunger, the incapacity of the hungry, the resulting general want, the pressures of expanding and demanding population and the recklessness of people who have nothing to lose and perhaps something to gain by embracing new political ideologies designed not to create individual freedom but to destroy it –this seem to be basic dangers of our present world.” [p. 1].

¹¹ See Dowie. *American Foundations*, p.107.

¹² See Kohler, Robert E. *Partners in Science: Foundations and Natural Scientists, 1900-1945*. Illinois: Chicago University Press, 1991, p.234.

¹³Consequently, Warren Weaver, director of the Natural Sciences division, described agriculture as “nothing more than the application of the principles of biology and other natural sciences to the art of growing food.” *The World Food Problem, Agriculture, and the Rockefeller Foundation*,” by Advisory Committee for Agricultural Activities, 21 June 1951, p.7.

¹⁴ *The World Food Problem, Agriculture, and the Rockefeller Foundation*, Advisory Committee for Agricultural Activities, 21 June 1951, pp. 8-9.