Nutrition and the Rockefeller Foundation in Mexico

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The Rockefeller Foundation's scientific and medical enterprises in the twentieth century could be seen as one of the biggest scientific endeavors apart from the Manhattan Project. Unlike the latter, the Green Revolution—one of the main highlights of the influence of the Foundation worldwide—sought to counteract the effects of the atomic danger and to support the peaceful development of nations.

The Green Revolution is among the social, historical, and economical phenomena that social scientists have studied the most—and most often criticized—since the 1970s.[1] Agriculture and geopolitics have been the main focus of research, and important analyses evaluating the Green Revolution's results—both positive and negative—have been written.[2] I would argue, however, that a key element at the origin of this Revolution has been minimized: nutrition. Nutrition—in this context—has not only been understood as an analysis of the biochemical composition of foods and their interactions in the human body, but also as a social problem, which may be best understood from a public health perspective. One of the arguments I will outline here is that the International Health Division lost its central influence in the Rockefeller Foundation, and that this loss affected the way we understand nutrition and the outcome of the Green Revolution today. The Green Revolution claimed to offer a solution to the "Problem of Nutrition," the name that the League of Nations gave to a number of problems around food, public health, and agriculture in the mid-1930s.[3] The problem was partly forgotten during the war, but, as I contend in this first approach to the period, research on nutrition continued during the war. Moreover, the answer to that problem offered by international postwar agencies like the Food and Agriculture Organization (FAO) can be traced to the Rockefeller Foundation's early work in one of its main "laboratories": Mexico.

I will present an outline of the main events that took place in Mexico in the 1940s that affected the way nutrition science was studied and show how the Rockefeller Foundation was an integral part of it.

The Rockefeller Foundation in Mexico in the 1940s

In the early 1940s, Mexico was one of the most important countries for the Rockefeller Foundation (RF). The RF had been collaborating and working in Mexico for at least three decades, creating a strong network of people who worked closely with Mexican ministries such as Health and Agriculture. The collaboration was conducted through the RF's divisions of International Health (IHD) and Natural Sciences (NSD). These were not the only divisions of RF operating in Mexico, but they were the most visible and mobilized most of the financial and human resources. Despite the tensions between the U.S. and Mexican governments during the presidency of Lázaro Cárdenas (1934-1940) due to the Agrarian Reform and the Oil Industry Expropriation, the RF's scientific collaboration with its Mexican counterparts was maintained basically uninterrupted.

Anne-Emanuelle Birn has defined the RF's relationship with Mexico as a "marriage of convenience." The IHD by itself had been the star of the RF's collaboration with Mexico, thanks to public health programs for combating such diseases as malaria, yellow fever, and hookworm. By the end of the 1950s, the IHD had trained more than two thousand Mexican health workers.[4] The Mexican medical system was transformed by this collaboration, which was matched later by the NSD through the creation of the Mexican Agricultural Program (MAP) in 1943—later recognized as the beginning of the so-called Green Revolution—in which an improvement of agricultural production of cereals was used as a model later exported worldwide.[5]

These success stories overlook one crucial aspect of the history, however: the way in which *nutrition* served as one of the leading arguments for encouraging collaboration between the divisions. This narrative also overlooks the strong impact of this endeavor on the way nutrition science developed, not only in Mexico, but—I would suggest—worldwide. Food as a problem, a conceptualization that emerged in the 1930s, was translated not into a nutrition problem, but into a problem of yields in agriculture. It was only later, in the 1940s, when the map aspect of both public health and agriculture began to be discussed at RF headquarters as a central issue that would reorganize research agendas worldwide and, in the case of Mexico, would help create and abandon an institution, the Instituto Nacional de Nutriología (INNu), the main focus of this report.[6]

The IHD enjoyed a long and successful collaboration in Mexico through several health campaigns. It had operated in Mexico through an office called the Office of Sanitary Specialization and Rural Hygiene (*Oficina de Especialización Sanitaria e Higiene Rural*, OESHR). This office functioned as an administrative branch of the Mexican Health Ministry (*Secretaría de Salubridad y Asistencia*, SSA), but with funds from the IHD, which retained control of its administration. The office conducted health campaigns against epidemic diseases like yellow fever and hookworm; medical elites in Mexico had maintained strong collaborative relations with the RF and the IHD since the revolutionary period. By the 1940s, RF officers in Mexico had established strong bonds with their Mexican counterparts. George C. Payne headed the OESHR Payne from 1940 to 1946; Wilbur G. Downs ran the office from 1946 to 1952.

The NSD operated in Mexico similarly to the IHD, although the RF's interest in agriculture did not enjoy the long history or public and political interest that the health initiatives had. There had been several earlier attempts to establish agricultural collaboration between the RF and the Mexican government, but none was fruitful until the creation of the agricultural and nutritional project in the

1940s. Agriculture was, in the 1940s, one of the RF's newest projects and interests, fostered by talks between American Vice President Henry A. Wallace and the RF board of directors. Vice President Wallace had been secretary of agriculture from 1933 to 1940, and served as vice president in the third Roosevelt administration, from 1941 to 1945. Wallace was considered a leading world agriculture expert and had been Roosevelt's choice to represent the United States at Mexican President Camacho's 1940 inauguration.[7] The RF board of directors selected Dr. Warren Weaver, head of the NSD, to start the agricultural program by virtue of his contacts in the Mexican schools of agriculture, particularly in chemistry, so it was decided that the NSD would be the main division to operate what was later called the Mexican Agricultural Program (MAP).[8]

In its early years, the MAP represented an opportunity for RF representatives in Europe and China to relocate their work for the foundation. These officers had been recalled to the US when the Second World World brought RF activities in their originally assigned areas to an indefinite halt. Agricultural research was one of the opportunities available to them and Latin America constituted the primary place geographical focus. In collaboration with the Mexican Ministry of Agriculture, the NSD created a new office, the Office of Special Studies (*Oficina de Estudios Especiales*, OEE). While the NSD and the IHD in principle worked in parallel, and supposedly in tandem, in practice, the OEE functioned as a totally independent agency with its own interests.

The Office's mission was clear from the outset: to improve Mexicans' standard of living by raising agricultural production yields. Improving health care alone was not sufficient; nutrition and agriculture also had to be developed. The MAP made some assumptions that can explain the way the RF functioned in Mexico and later in the Green Revolution: local agricultural methods had to be changed, "modern"—American—agriculture methods were better and could be exported anywhere. The goal was to train local people to fully understand these techniques.[9]

J. George Harrar directed the OEE until 1952. At first, the office took a subtle approach, learning local agricultural techniques and working closely with the IHD. When the MAP proved successful, however, Harrar came to listen less to RF advisors, while political circumstances favored abandoning the educational and social questions the IHD had been raising.[10] The NSD moved towards a yield approach and a focus on large farms instead of small farms, orienting its research towards biochemical aspects of the seeds the MAP was producing and away from economical or social questions that may also have contributed to the food problem.

Mexico and the Problem of Nutrition in the 1940s

In the 1940s Mexico was experiencing its first years of political stability since the Revolution of the 1910s. The presidency of General Lazaro Cárdenas, from 1934 to 1940, was the last of a series of presidents who had direct links to the armed movement. His presidency is seen as representing a "modernizing nationalism" called Cardenismo; he implemented institutional reforms with a strong social improvement discourse. The Revolution had brought new actors to light as part of the social programs, the most important being Mexico's enormous population of peasants, whose living conditions became the object of improvement efforts. Cárdenas' social projects included land reform (redistribution), oil industry expropriation, health campaigns, and industrialization. These structural rearrangements created tensions in US-Mexico relations, though these softened by the end of Cárdenas' presidency and the election of Manuel Ávila Camacho in 1940. Camacho, president from 1940 to 1946, implemented several other projects. In 1940, the Health Ministry and the Ministry of Social Assistance were joined as the Ministry of Health and Public Assistance (*Secretaría de Salubridad y Asistencia*, SSA), and a new Social Security and Health Institution, the biggest in Latin America, was created in 1943, the Mexican Social Security Institute (*Instituto Mexicano del Seguro Social*, IMSS).

The Health Ministry was conducting nutrition surveys to determine Mexican eating habits and cooking techniques. There were also programs based on the hygienic discourse that had been in place since the end of the nineteenth century. The hygienic approach took for granted that there were "better" ways to cook and eat than the traditional ones. "Better" nourishment meant, to the medical and educational elites of the turn of the century, implementing European or American models of cooking, and most of all, a "normal" diet following European standards. This hygienic approach, which was implemented by the medical elites, also required the scientific analysis of the foodstuffs Mexicans ate and to teach the people how to improve the "normal" consumption of proteins—basically from animal sources—and the way eating some foods and not others may be better than following their traditional diet.[11]

The numerous government initiatives and projects were relatively isolated, however. There was little connection between the results obtained in one institution—the Health Ministry nutrition surveys, for example—and the research and results obtained at, say, the Agriculture School at Chapingo for the improvement of the production of seeds. Cardenismo mitigated this disconnectedness by creating the National Commission for Nourishment (*Comisión Nacional de Alimentación*, CNA) in 1936, an attempt to coordinate the efforts of the several Mexican ministries that dealt with food, nutrition, and agriculture. Multidisciplinary from its inception, the CNA was an early attempt to solve the "problem of nutrition" that was being identified that same year in the international arena.

The usual historical narratives emphasize that the RF started the collaboration with Mexican scientists. This narrative leaves the local actors in the dark. It was local Mexicans who actively went looking for collaboration with the RF and who helped construct the conditions to improve Mexicans living standards. From this perspective, one of the protagonists of my account is Mexican physician

Francisco de Paula Miranda. By looking at Miranda's life we can trace and give a more symmetrical account of the complex scientific connections and events that took place in the 1940s between Mexico and the RF, and how the field of nutrition lost its originally interdisciplinary character.

Miranda, the Mediator in the Network

Francisco de Paula Miranda (1890-1950) was a Mexican physician who specialized in endocrinology. He was a professor at the National Medical School and became director of the National Academy of Medicine. He believed that Mexican organizations should look to international organizations like the RF and the Red Cross as models. Miranda had served as the Ministry of Health's representative in the CNA and became its director in 1941. The Ministry of Health was the leading voice inside the Commission and Miranda was the head of the National Family Canteen (*Comedor Nacional Familiar*, CNF) in Mexico City, created in collaboration with the head of the Ministry of Public Welfare, Salvador Zubirán.[12] The Canteen was designed to bring nutritionally equilibrated meals to school children and poor families, and to become a laboratory for the study of food habits and nutritional deficiencies. It was supposed to be a model for future Canteens, but its practice consisted basically of clinical assessing the people who attended the Canteen.

The Canteen was a huge success among the poor and industrial population of Mexico City, and a new one was soon planned. The plan for Canteen No. 2 incorporated the construction of a National Institute for Nutrition and Nourishment in a building projected to be built next to the Canteen.[13] The new institute would provide information regarding the food habits of the Mexican population, train nutritionists, and conduct research about the composition of the usual foodstuffs Mexicans ate, as well as general nutrition research.[14]

Miranda and several of his collaborators actively worked to establish this institution projected to be annexed to Canteen No. 2. Miranda created a Mexican Nutrition Society. The vice president of the Society, Miss Aurea Procel, a Mexican student from the National Medical School, arranged a meeting in the US with Vice President Wallace in May 1941. Dr. Louise Stanley, of the Bureau of Home Economics, brought Miss Procel to visit Wallace. Procel presented to Wallace the nutritional studies that the Mexican Ministry of Health was conducting, and signaled the need for more dietary studies and for the creation of an specialized institution in Mexico devoted to nutrition.

After his meeting with Miss Procel, Wallace wrote to Raymond B. Fosdick, president of the RF at the time, asking requesting the RF's collaboration in the dietary studies needed in Mexico, and giving details of the meeting he had just had with Procel and Stanley. Wallace proposed more studies related to nutrition in Mexico, which, he recommended, should be made under the projected nutrition section of the Health Ministry with the collaboration of the RF. Wallace made clear that the "development of an agricultural economy" was an "essential factor in any national program for better health." Mexico would be the first step and the "guide" in this kind of mixed program in agriculture and health in South America. The new section of the Health Ministry would be Miranda's projected institute. In his letter to Fosdick, Wallace prescribed the main research lines for the new institution, suggesting that "dietary studies might be accompanied by studies of physical development of the population" and stipulating that "the analysis of the data should also indicate desirable changes in the dietary habits and serve as a guide to agricultural planning for various sections of the country." [15] To Wallace, the integration of the nutritional knowledge and agricultural research was essential. The social elements of nutrition, such as employment or education, had to be discerned through surveys of population groups with different income and regional diversity, elements that were part of the dietary surveys, and fundamental for the research program.

In May of 1941, when Miss Procel visited Wallace, the RF was already planning to extend its program in Mexico. In the last months of 1940 and the first months of 1941, RF officers engaged in formal and informal talks about the possibility of extending the RF Program in Mexico.[16] The general assumption was that the health program the IHD had in Mexico was not enough and they needed to expand its reach. The broader approach for health should include not only nutrition but also agriculture, since the last one was considered essential for increasing the Mexican "standard of living."[17]

The RF asked Payne from the IHD about the nutrition institute that Miss Procel was promoting. Payne consulted Miranda, head of both the CNA and the CNF at the time, about the plan to establish the institute, and Miranda mentioned that he had plans to create a food laboratory next to Canteen No. 2 but that he did not know Procel or her institutional connections.[18]

This last assertion was false, since, by the time Payne asked Miranda, Miss Procel had already sent a brief outline of the nutrition institute project to president Ávila Camacho. In the proposal, she argued that the Mexican Nutrition Society was already in talks with the RF and with Vice President Wallace to earn their backing for the construction of the institution. She evidently knew Miranda and he knew her, since in her argument to President Alemán, she mentioned Miranda. Miranda was not a passive actor expecting to see the outcome of RF decisions on whether or not to fund a nutrition program in Mexico. He told the RF officers what was convenient for him, since he probably knew Miss Procel, and because of her relations with the former president Cárdenas had apparently made her persona non grata in the Ávila Camacho administration. The political distance the RF took was typical of the period; Payne advised the RF to be cautious about the possibility of having her in an important position at the projected institute.[19] The circumstances around Miss Procel's situation remain unclear.

Throughout 1941, Payne made arrangements to conduct nutrition studies in Mexico through a joint effort of the Department of Health, the School of Public Health, and the Rockefeller Foundation. The IHD would become the leading voice within the RF and would coordinate the OESHR's work. The Mexican nutrition studies had three objectives: to appraise the nutritional status of population groups, to develop procedures for correcting deficiencies, and to conduct demonstrations of control procedures.[20]

Payne selected the researchers who would run the studies. Dr. William Dodd Robinson, a former RF fellow who had led other field nutrition studies in Spain, would direct the project.[21] A Mexican clinician, Dr. José Calvo de la Torre, an RF fellow at Johns Hopkins Hospital, was appointed to serve under Robinson.[22]
A 1941 Health Department report shows that one of the OESHR's achievements was the creation of the National Family Canteens, under the administration of Miranda and Zubirán.[23] Miranda pushed for the further creation of a Nutrition Laboratory annexed to the Canteen.

In 1942, George C. Payne made arrangements for nutrition studies to be conducted in Mexico. The CNA was selected as "the logical organization" to collaborate with the nutrition studies the RF was expecting to run in Mexico.[24] Robinson collaborated with Payne and Miranda to organize the nutrition studies.
The CNA changed its name in 1943. No longer the National Commission for Nourishment, it became the National Institute of Nutriology (INNu). It was now an independent institution, though its laboratories remained at the National School of Public Health. Miranda was the head of the new institute and a fruitful collaboration with the RF emerged. The RF provided crucial financing for the institute, but the money did not come directly from the foundation. It was a more equilibrated situation, in which Miranda kept control of the funds.
The INNu followed a path initiated by the CNA, a complex approach very similar to the one taken by the League of Nations a decade earlier. Nutrition had to be understood as a complex phenomenon involving agriculture, chemistry,

medicine, and public health. The social, economic, and educational aspects of nutrition had also to be taken into account. From its inception, the INNu made use of two principal methods: nutrition surveys and food analysis. In its surveys, the institute evaluated and measured the complexity of the nutrition problem. In the laboratory, food analysis provided information necessary for understanding how to improve the living standards of the population. Improvement of living conditions could be achieved, Miranda and his colleagues believed, by informing people how to buy food with better nutritional profiles in accordance with their economic situation.

As head of the INNu, Miranda became the main Mexican expert on nutrition. In that capacity, he attended several international conferences. In 1943, for example, he was part of the Mexican delegation participating in the United Nations Conference on Food and Agriculture in Hot Springs, which led to the creation of the UN's Food and Agriculture Organization (FAO).[25]

The INNu was the place where collaboration between the RF's IHD and NSD would prove fruitful and would, in the long term, modify the nutrition research agenda not only in Mexico, but possibly worldwide. The IHD collaborated with the INNu on nutrition surveys, evaluating aspects of the food habits of the peasants in rural areas of Mexico. Additionally, the chemical analysis of the food they consumed and its impact on Mexicans' nutritional status was part of the the INNu's collaboration with the NSD. Moreover, the NSD would send the seeds—mostly maize and wheat—they were producing, and the different Mexican soils to evaluate their biochemical properties.[26] The first laboratory analysis for NSD seeds was established at the National School of Public Health, in a laboratory under the INNu's control.

Given the potential payoff of laboratory materials and instruments, they constituted the INNu's main priority. These was also among the main items funded by the RF, along with the nutrition surveys and researchers' salaries. Robinson and Calvo conducted the nutrition studies for the first few years. Calvo

worked for the INNu, though his salary paid half by the institute and half by the IHD.[27] He was more interested in public health administration than in nutrition; this eventually proved relevant when he became head of the INNu toward the end of the 1940s. This partial funding at the INNu allowed the assigned budget of the RF to last longer than expected, and also gave the INNu a voice in the decision taking and the corresponding credit for the research.

The INNu's first RF advisor, Robinson, left the institute in 1943.[28] His replacement was Richmond K. Anderson, whose focus was evaluating the nutrition of Mexican peasants and gathering clinical evidence of undernourishment.[29] The INNu conducted several studies of rural populations with Anderson. The INNu also collaborated with other international institutions, including the Kellogg Foundation, the Pan American Sanitary Bureau and the Massachusetts Institute of Technology, on the analysis of typical Mexican foods.[30] The first three years were fundamental for the INNu and consolidated Miranda's reputation as the leading Mexican expert on nutrition. The information the INNu collected became the official Mexican data provided to the FAO and the United Nations Agencies.

In 1941, in parallel to the nutrition studies, the Office of Special Studies (*Oficina de Estudios Especiales*, OEE) was created, as mentioned above, through a further collaboration among the Health Department, the Agriculture Ministry and the RF's Natural Sciences Division. J. George Harrar, the head of this office reported directly to the NSD.[31] The OEE was the office where the broader objectives of the nutrition studies were to be implemented, as was the Mexican Agricultural Program (MAP).

The MAP and the INNu collaborated closely during this period. Both Miranda and Calvo worked with Harrar's OEE, strengthening the analysis of the nutrition value of the seeds produced by the MAP. Harrar sent the samples of cereals they were producing to the INNu, which analyzed them in its bromatology (food science) section and provided crucial information on which seeds had a better

nutrition profile. This work helped create the idea of "miracle seeds," which later would be exported worldwide as part of the Green Revolution.[32]

By 1945, however, the RF was shutting down its nutrition studies in Mexico.[33] Ironically, part of this had to do with the results obtained in the surveys by Robinson and Anderson. This result showed that nutrition deficiencies in the Mexican population were less severe and less prevalent than what the RF had expected. They were looking for severe malnutrition for their studies, but when that degree was not found in Mexico, they began considering different populations and new methods.[34]

Nutrition surveys were expensive and time consuming; Anderson thought that "much useful information can be obtained by much simpler methods."[35] The homogeneity found in Mexico proved to them that the type of surveys they were using were providing only small amounts of useful information. Expensive surveys were therefore deemed unnecessary. Nutritional betterment projects would then become the more important constituents of the program, assuming a homogeneous nutritional status of the population. The IHD shut down its nutrition studies and donated its material and instruments to the INNu, but lack of funding and other problems proved insurmountable to the Institute.[36]

Miranda had envisioned a modern institute to provide the Mexican government all the nutritional information it needed to make decisions on agriculture, public health, and social policy. He struggled with the Health Department to accomplish his objectives and never wholly realized them. One of the most challenging aspects was the construction of the building designed especially for the INNu. The construction took more than three years and in 1946 Miranda and his team moved to an unfinished building that still lacked basic infrastructure, including water and gas. The INNu's personnel was unable to work in such conditions. When representatives of the Kellogg Foundation, which financed part of the INNu's research, became aware of this situation, they decided to end their

support. Circumstances worsened when the head of MIT's Nutrition Lab visited the INNu in 1946 and witnessed the terrible conditions. This official, in a letter, advised the head of the Pan American Sanitary Bureau, Fred L. Soper, that any support should not be made to the INNu, but instead to Salvador Zubirán and his team at the Nutrition Hospital, who were taking a clinical approach to nutrition.[37] Soper sent a copy to George K. Strode of the IHD, and proposed that the new nutrition institute in Panama, the INCAP, should be the institute to collaborate with the RF and the MAP.[38] These letters raised the alarm at RF headquarters and certainly aggravated the financial and administrative situation for the INNu. Miranda began suffering severe health problems in 1946 and resigned from the INNu in 1947. Calvo de la Torre, head of the INNu's biochemical laboratory, took over control of INNu activities. At the same time, internal struggles at the Health Ministry led to the INNu being downgraded from an independent research institute to a department of the Tropical Diseases Institute (*Instituto de Enfermedades Tropicales*, ISET). This administrative reorganization was reversed the next year, but the INNu never fully recuperated from the experience. An internal reorganization of the RF was another development that affected the INNu. In 1946, the RF was shutting down funding of the nutrition studies in Mexico. There had been discussions in RF headquarters about a possible overlap of research among Mexican programs. Hugh H. Smith and George K. Strode, assistant director and director of the IHD discussed the issue with Warren Weaver, director of the NSD; they ultimately took the decision to stop the nutrition surveys. The NSD and J. George Harrar, head of the MAP in Mexico were now the only links between the RF funding and the INNu.[39] This rearrangement made the INNu the source of the biochemical analysis of seeds and, to a lesser degree, foodstuffs. The evaluation of the living conditions of the Mexican population was set aside, along with the nutrition surveys.

Harrar believed that modern agriculture—understood as the set of methods, instruments, and techniques employed in the US and Western Europe—was the best way to improve Mexican living conditions. Early criticism of the MAP,

however, led Harrar to take a subtler approach than this "extension or dissemination" of modern techniques. The MAP had taken a cautious approach to nutrition at first, letting the IHD conduct the nutrition surveys. By 1947, however, it had abandoned this timidity and had embraced the extension approach. Calvo's background as biochemist and his prior relationship with Robinson and later with Anderson led the institute to place more emphasis on biochemical analysis, a subtle but important trend in the INNu's research. Calvo's need for more equipment and his administrative struggle to keep the institute afloat made him accept without hesitation that the INNu's bromatology section would conduct the research the MAP needed, which was to analyze the nutritional quality of seeds in order to inform choices among varieties.[40]

The INNu's collaboration with the MAP continued for several years, making the institute basically the MAP's producer of information on the nutritional content of seeds. When Miranda died in 1950, several of his connections, such as the link between the INNu and the FAO, collapsed. In spite of Calvo's efforts, the INNu closed its doors in 1956. Its laboratories and staff were transferred in 1958 to Salvador Zubirán's Nutrition Hospital, which changed its name to the National Institute of Nutrition (*Instituto Nacional de Nutrición*, INN). The INN maintained Zubirán's clinical approach to nutrition. The MAP and the INCAP strengthened their collaboration and began exporting their agricultural model to Latin America and Asia. In 1951, meanwhile the RF folded the IHD into its Division of Medicine and Public Health, ending the Nutrition Surveys in Mexico.[41]

Because this restructuring severed the IHD's connections with the Mexican government, RF officials announced to the Mexican authorities that they would close the OESHR by the end of 1952. The RF then strengthened its only remaining office in Mexico, the OEE under the NSD, and consolidated the seed improvement program.[42]

Concluding Remarks

Several intersecting factors shaped the change of research orientation towards a more biochemical approach and away from a comprehensive social approach. Although the social approach was never forgotten, it was nevertheless minimized. In the first place, the original disciplinary links of the MAP with Mexico were stablished through the chemists at the agricultural schools. This relation was translated in a research agenda, which turned out to be mainly biochemical. Chemical analysis of the crops and soil were implemented, and the approach of the OEE minimized the social factors behind the link between nutrition and agriculture. The MAP proved to be effective in improving the yield of the fields, and the food problem of the 1930s was transformed into a yield problem.[43]

The food problem that Miranda thought the solution was at the union of agriculture and medical knowledge was partly accomplished in the INNu.[44] However, several factors affected this approach and agriculture and medical knowledge departed from each other in this stage of the "development" model followed later.

The Rockefeller Foundation oriented and changed the research agendas in Mexico in the 1940s in the field of nutrition. This field proved to be a central node around which the IHD and NSD tried to approach nutrition in broader terms. They collaborated for a brief period of time and made the INNu and Miranda a valid interlocutor to international organizations.

The lost of influence of the IHD in the RF oriented also the way we relate to nutrition, in measured standards rather than social factors affecting it. This approach is the same the FAO follows, in which the food problem is a problem not of nutrition in broad terms—social, economical, medical—but of distribution of food. This was the approach the MAP followed by increasing the yield of the Mexican fields, a model that was later exported as the Green Revolution.

The RF used not only learned and used local knowledge, and implemented several methods using Mexico as a big field of research, a great laboratory of practices they would later use in Latin American and later in Asia.

The INNu is an example of the way local and international interests may be fruitful and also the opposite, as an example of how the model of philanthropic organizations may prove pernicious to local research agendas and problems.

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[3] League of Nations and International Institute of Agriculture, *The Problem of Nutrition*, 4 vols. (Geneva: League of Nations, 1936).
[4] Anne-Emanuelle Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico* (Rochester, NY: University of Rochester Press, 2006), 2.
[5] Armando Solórzano, "La influencia de la Fundación Rockefeller en la conformación de la profesión médica mexicana, 1921–1949," *Revista Mexicana de Sociología* 58, no. 1 (1996): 173–203; Cullather, *Hungry World*.
[6] On food being conceived as a problem, see Josep L. Barona, *The Problem of Nutrition* (New York: Peter Lang, 2010). There is a widely repeated mistake of the names of the Mexican institutions related to nutrition in Mexico. The Instituto Nacional de Nutriología (INNu) was founded in 1943; another institution, the Hospital de Enfermedades de la Nutrición (HEN), was founded in 1944. Both institutions had independent research agendas and although they collaborated with each other, they focused on different aspects of the subject. The RF mainly collaborated with the INNu, not the HEN. The confusion may arise from the fact that in 1958, two years after the INNu closed its doors, part of the INNu's laboratories were incorporated into the HEN, which then changed its name to Instituto Nacional de Nutrición, or INN, very close to the earlier institute's acronym, INNu. Generally, the name INN is nowadays used to refer to both the INNu and the HEN. This is a serious anachronism that results in incorrect interpretations of this period.
[7] William C. Cobb, "The Historical Backgrounds of the Mexican Agricultural Program (annotated edition)," 1956, p. 48, Rockefeller Foundation Records (hereafter RFR), Rockefeller Archive Center (hereafter RAC).
[8] Ibid., 32.
[9] Ibid., 52. This set of assumptions was questioned by A. R. Mann and Dr. Carl Sauer, who made recommendations oriented towards the possibility of altering the patterns of Mexican life. Ibid., 55.
[10] Harwood, "Peasant Friendly Plant Breeding," 397–398.
[11] Joel Vargas-Domínguez, "Alimentar el cuerpo social: Ciencia, dieta y control en México durante el Porfiriato" (Master's thesis, Universidad Nacional Autónoma de México [UNAM], 2011); Stefan Pohl-Valero, "'La raza entra por la boca': Energy, Diet and Eugenics in Colombia, 1890-1940," *Hispanic American Historical Review* 94, no. 3 (2014): 455–486.
[12] Report from George C. Payne to William A. Ferrell, Feb. 6, 1942, RG 1.1 S 323 B 12 F 80, RFR, RAC.
[13] AHSSA, BP, D, SS, L16, E5, 1941 (México, D.F.: SSA).
[14] AHSSA, BP, D, SS, L22, E 10, 1942-1943 (México, D.F.: SSA).
[15] Letter from Henry A. Wallace to Raymond B. Fosdyck. May 13 1941, RG 1.1 S 323 B 12 F 79, RFR, RAC.
[16] Cobb, "Historical Backgrounds," 46–50.
[17] Staff Conference, February 18, 1941. RG 3, S 904, B 5, F 33, RFR, RAC.
[18] Letter from Payne to Ferrell, August 20, 1941. RG 1.1, S 323, B 12, F 79, RFR, RAC.
[19] Letter from Payne to Ferrell, June 16, 1941, RG 1.1, S 323, B 12, F 79, RFR, RAC.
[20] Outline of Proposed Nutrition Studies, December 5, 1941, RG 1.1, S 323, B 12, F 79, RFR, RAC; IHD Revision of Budget, 1945, RG 1.1, S 323, B 12, F 80, RFR, RAC.
[21] Letter of Ferrell to Payne, September 12, 1941, RG 1.1, S 323, B 12, F 79, RFR, RAC.
[22] Letter from Muench to Payne, October 7, 1941, RG 1.1, S 323, B 12, F 79, RFR, RAC.
[23] AHSSA BP D SS L16 E2 1941 (México, D.F.: SSA).
[24] Payne to Ferrell, January 2 and 16, 1942, RG 1.1, S 323, B 12, F 80, RFR, RAC.

[25] Joel Vargas-Domínguez, "Entre la nación y el mundo: La nutrición en México en la Conferencia de las Naciones Unidas sobre alimentación de 1943," in *Cuestión social, políticas sociales y construcción del Estado Social en América Latina en los siglos XIX y XX*, ed. Fernando J. Remedi and Mario Barbosa Cruz (México, DF: Universidad Autónoma Metropolitana-Cuajimalpa; Centro de Estudios Históricos Carlos Segreti, 2014), 175–192.
[26] Payne to Ferell, February 6, 1942. RG 1.1, S 323, B 12, F 80, RFR, RAC.
[27] Payne to Ferrell, September 17, 1942. RG 1.1, S 323, B 12, F 80, RFR, RAC.
[28] Robinson to Ferrell, April 29, 1943, RG 1.1, S 323, B 12, F 81, RFR, RAC.
[29] Anderson took trips to various parts of Mexico to study nutritional conditions and choose areas for surveys. RG 1.1, S 323, B 12, F 80, RFR, RAC.
[30] René Cravioto B. et al., "Composition of Typical Mexican Foods," *The Journal of Nutrition* 29, no. 5 (1945): 317–329; R. O. Cravioto et al., "Nutritive Value of the Mexican Tortilla," *Science* 102, no. 2639 (1945): 91–93.
[31] Wilbur G. Downs to J. George Harrar, April 19, 1948, AHSSA SSA SubSyA L10 E4 1946 (México, D.F.: SSA).
[32] Anderson Diary, January 20, 1947, RG 1.1, S 323, B 12, F 83, RFR, RAC.
[33] Payne to Smith, October 18, 1945, RG 1.1, S 323, B 12, F 82, RFR, RAC.
[34] Ferrell to Payne, March 8, 1944, RG 1.1, S 323, B 12, F 82, RFR, RAC.
[35] Observations of May 2, 1944, by Dr. R. K. Anderson Relative to Nutrition Studies, RG 1.1, S 323, B 12, F 82, RFR, RAC.
[36] Smith to Payne, January 16, 1946, RG 1.1, S 323, B 12, F 82, RFR, RAC.
[37] Harris to Soper, February 20, 1947, RG 1.1, S 323, B 12, F 83, RFR, RAC.
[38] Soper to Strode, February 24, 1947, RG 1.1, S 323, B 12, F 83, RFR, RAC.
[39] Interview: WW, November 18, 1946, RG 1.1, S 323, B 12, F 82, RFR, RAC.
[40] Anderson Diary, Excerpt, January 20, 1947, RG 1.1, S 323, B 12, F 83, RFR, RAC.
[41] Zubirán conducted more nutrition surveys in the 1960s. The School of Public Health later continued this effort.
[42] Wilbur G. Downs, June 7, 1951, AHSSA SSA SubSyA L10 E4 1946 (México, D.F.: SSA).
[43] Cullather, *Hungry World*, 52.
[44] Francisco De Paula Miranda, *La alimentación en México* (México, D.F.: Instituto Nacional de Nutriología, 1947).