2 US–India Entanglements and the Founding of ICRISAT in India

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In July 1971, agronomist Ralph Cummings wrote to the director of the Rockefeller Foundation's agricultural program in India and mentioned his upcoming preliminary visit to India "regarding the feasibility of the suggested Upland Crops Research Institute." On his docket were meetings with such key people as the agriculture minister, C. Subramaniam, the agriculture secretary, B. Sivaraman, and Planning Commission member Tarlok Singh. Cummings was also scheduled to meet agricultural scientists M. S. Swaminathan and B. P. Pal at such premier Indian institutions as the Indian Agricultural Research Institute (IARI) and the Indian Council of Agricultural Research, respectively. In all these encounters, Cummings hoped to "discuss the extent to which they wish[ed] serious consideration be given to India as [the] location for the Upland Crops Research Institute." This institute was to be a world resource center for research on crops in areas of low rainfall.[1] By the following July an institute with this mission was in place on the outskirts of Hyderabad. It was christened the International Crops Research Institute for the Semi-Arid Tropics, or ICRISAT, and funded through the recently established Consultative Group on International Agricultural Research (CGIAR).

Although historical accounts commonly put US foundations and agronomists like Ralph Cummings at the forefront in explanations of the history of global institutions such as ICRISAT in the 1970s, American political and scientific ambitions offer at best a partial understanding. As I show, the outreach, interest, and facilitation involved in the establishment of ICRISAT in India were enmeshed in the momentum of past agricultural programs and the contingencies related to choices made by key Indian political leaders in a changing political climate. The establishment of ICRISAT seemingly showcases departures from the high-yield agricultural

Acknowledgments: Gopi Swamy provided research assistance with Telugu archives in Hyderabad for this chapter.

[1] Ralph Cummings to Guy B. Baird, July 15, 1971, Ralph Cummings Collection, MC 312, Special Collections, North Carolina State University, Raleigh, NC (hereafter Ralph Cummings papers), Folder 3, Box 34, Series 33.

agenda of the 1960s that India embraced under American inspiration. The latter, commonly captured by the descriptor Green Revolution, was focused on wheat, foisted on fertile, irrigated lands in three key states in India's northwest, and promulgated by the government through economic incentives.[2] The inauguration of ICRISAT happened after a rupture in Indo-US diplomatic relations and a consequent end to the ongoing collaborations on agrarian programs between the two nations. The upcoming institution would focus on a different set of crops that thrived in a different agro-climatic context and also seemed hitched to a different agrarian program. That said, this chapter argues that ICRISAT – despite the pronouncements of important political actors in India to the contrary – represented an institutional continuation of a Green Revolution vision that had become consolidated in the preceding decade.

The lightning speed with which an institution as large as ICRISAT went from a plan on paper to bricks and mortar demands a history that considers the context of prior agrarian projects in India, including their American lineage, as well as scientific and political developments in India in the 1970s that made an "international" institute palatable to many of the country's leaders. I begin my analysis by sketching the agendas that brought American agricultural scientists to India in the 1950s and 1960s, before turning to events more immediately surrounding the creation of ICRISAT in association with CGIAR. Lastly, I discuss the Indian context in which proposals for ICRISAT were received, showing how the successful launch of the institute in 1972 depended on reconciling the claims of two key political leaders in India with the rhetoric of international research on dryland crops.

Deepening US–India Entanglements in the 1950s and 1960s

The 1950s and 1960s saw a growing entanglement of American and Indian interests in projects of rural uplift and agricultural yield enhancement that were undertaken in India. President Harry Truman's project of exporting technical aid to developing nations through his Point Four program opened the gate for the arrival of American technical experts to

[2] I use the phrase "Green Revolution" to refer to the 1960s agricultural transformation in India using high-yielding variety seeds that was made possible through the state provision of subsidies on seeds, fertilizers, and pesticides, the creation of infrastructure, and the state's guarantee of a remunerative purchase price. See Akhil Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham: Duke University Press, 1998); Glenn Davis Stone, "Commentary: New Histories of the Indian Green Revolution," *Geographical Journal* 185, no. 2 (2019): 243–250; for debates on the global Green Revolution, see Prakash Kumar et al., "Roundtable: New Narratives of the Green Revolution," *Agricultural History* 91, no. 3 (2017): 397–422.

India.[3] These experts made an entry in multiple sectors, with the majority working on agricultural and rural development projects.

The footprints of American experts were first noticeable with the launch of India's ambitious community development projects on October 1, 1952. Earlier that year, India and the United States had signed an agreement to allow for the arrival of American experts. Among these were sociologists, agricultural experts, and "communitarians" who provided key advice to Indian officials and helped set up training centers for the staff of community projects. They made a major contribution specifically in the training of village-level workers, the cadre of the community development project, who bore the primary responsibility for educating farmers in myriad tasks, ranging from seed selection to well-digging to rural education and welfare. Aside from the US State Department, the Ford Foundation was also involved in the training of village-level workers. While the American expertise was crucial, the Indian government showed extraordinary commitment to the idea of bottom-up development that was implicit in the communitarian idea. Within a few years, the government had created a vast, nationwide infrastructure of community centers and blocks. Financial and bureaucratic support for this work was made readily available under Prime Minister Jawaharlal Nehru's leadership, not least due to his extraordinary interest in the project.[4]

A parallel American interest in augmenting India's agricultural production also progressed in India in the 1950s and 1960s. Historians of American foreign relations have argued that US-led efforts to mitigate hunger in India and across Asia in the 1950s and 1960s were motivated by the Cold War objective of countering communism. They were sustained by the notion that agricultural atrophy and low productivity in overpopulated nations like India generated breeding grounds for radical ideologies and communist takeovers. The Rockefeller Foundation in particular was at the forefront of this global drive to fight hunger, most famously by contributing to the expanded cultivation of high-yielding varieties of wheat and rice.[5]

[3] For a synoptic view of the United States' Point Four program and its push for development in postcolonial nations, see Steven Macekura, "The Point Four Program and US International Development Policy," *Political Science Quarterly* 128, no. 1 (2013): 127–160.

[4] A history of the community development project in India and a description of its various activities appear in Prakash Kumar, "'A Big Machine Not Working Properly': Elite Narratives of India's Community Projects, 1952–58," *Technology and Culture* 60, no. 4 (2019): 1027–1058.

[5] For the Rockefeller Foundation's early forays into agricultural aid, see Tore C. Olsson, *Agrarian Crossings: Reformers and the Remaking of the US and Mexican Countryside* (Princeton, NJ: Princeton University Press, 2017); for the spread of its programs to

The Rockefeller Foundation's initial outreach in India started at IARI, with the agronomist Ralph Cummings as the foundation's director of field staff in the country. Based in India from 1956, Cummings oversaw a project to start a postgraduate teaching program in agricultural sciences at IARI and another to jump-start research on three principal crops of maize, sorghum, and millet.[6] The Rockefeller Foundation dispatched Kenneth O. Rachie, an expert from its Mexican program – the site of its earliest efforts to develop high-yielding varieties – to "assist primarily in the development and execution of the research on improvement of sorghums."

After the middle years of the 1960s, as the high-yielding varieties of wheat and rice spread in India, the Rockefeller Foundation pursued a parallel interest in the development of sorghum and millet in India. Thus, late in 1968, Sterling Wortman of the Rockefeller Foundation, the hero of its Mexican Agricultural Program, wrote to India's agriculture minister suggesting that he meet with Wortman's emissary, Ralph Cummings, to discuss intensifying research efforts on sorghum and millet. The foundation had been pursuing work on those crops for more than a decade, but Wortman felt that the existing programs still did not meet all the world's needs "at this point in history." Wortman thought that India would be "the logical location for an [additional] intensified effort." He knew that the Indian government was actively considering the launch of all-India coordinated research schemes on sorghum and millet and that its preeminent scientists, such as M. S. Swaminathan, B. P. Pal, and A. B. Joshi, were positively inclined towards pursuing development of these crops. He thus invited the minister to meet with Ralph Cummings to discuss future projects in India in which the Rockefeller Foundation could participate. Wortman referred to Subramaniam's prior visit to Mexico, where he had seen him, and it seemed the two knew each other well. Clearly Wortman was using his prior acquaintance with the minister in pushing for the expansion in India of the Rockefeller Foundation's work on sorghum and millet.[7] In short, then, the foundation's interest in India

Asia, see Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia* (Cambridge, MA: Harvard University Press, 2010).

[6] "Statement Relative to Tentative Plan of Operation under Rockefeller Foundation – Government of India Agreement on Agricultural Research and Education," Ralph Cummings papers, Folder 3, Box 34, Series 33. The IARI postgraduate institution was set up on the recommendation of a 1955 Indo-US team. The Rockefeller Foundation stepped in to provide funds. M. S. Randhawa, *Agricultural Research in India: Institutes and Organizations* (New Delhi: ICAR, 1958), p. 45; Hadley Read, *Partners with India: Building Agricultural Universities* (Urbana: University of Illinois, 1974), p. 26.

[7] Sterling Wortman to M. S. Swaminathan, November 18, 1968, Ralph Cummings papers, Folder 3, Box 34, Series 33.

was hardly limited to wheat and paddy (rice) – the showpieces of the Green Revolution – but, rather, from the 1950s extended to crops like sorghum and millet. These nascent interests anticipated the later interest of CGIAR and Indian stakeholders that concretized around the effort to start ICRISAT.

The New Multilateralism and a Concrete Interest in "Upland Crops"

By 1970, US philanthropies led by the Rockefeller and Ford Foundations had been active in India for almost two decades, as had the United States Agency for International Development (USAID) and its prior incarnations. The staff of these organizations worked with and through the very large infrastructure of Indian agricultural institutions and engaged with many Indian scientists. The momentum of the work carried out by this binational community of agronomists, crop specialists, and other scientists foretold the collaborative spirit that later helped to launch ICRISAT.

The concrete idea of an institute that would embrace crops grown in areas of low rainfall took shape amidst deliberations at the Rockefeller Foundation in 1970. Its scientists had spent some time identifying and discussing distinct crop geographies of the world. An internal report compiled by Clarence Gray, a specialist in the foundation's agricultural sciences division, focused on rainfed, or unirrigated, areas in tropical Asia and Africa and justified the need for setting up a new organization to focus on the crops of these regions. Its beginning premise was that advances made in crop yields in Asia in the preceding decade had bypassed areas with low rainfall. "While there have been impressive gains in wheat and rice, a large production problem still exists in Asia," Gray argued. His report called the "contemporary yield-increasing technologies" of the 1960s vintage inadequate measures which "had little applicability and relevance in the unirrigated, rainfed uplands." With this logic, the report funneled attention towards a category denoted as "upland crops."[8] This categorization picked up a salience and reflected a broader pattern wherein the Rockefeller Foundation contributed to the founding of new, geography-specific institutes, such as the International Center for Tropical Agriculture in Colombia (CIAT) and the International Institute of Tropical Agriculture (IITA) in Nigeria, both in 1967.

Gray's consequential report borrowed ideas from geographers and was influenced by contemporary perspectives that established linkages among

[8] Clarence C. Gray, "Discussion Paper for an International Upland Crops Program," Rockefeller Foundation, June 1971, 59, https://cgspace.cgiar.org/handle/10947/474.

climate, rainfall distribution patterns, and agro-ecology. Gray relied on those connections to shape an imagined geography that made available a specific global space for action. The descriptor "upland" was commonly used by geographers to designate landscapes of higher altitudes that were located above the floodplains. These were mostly areas of low rainfall.[9] Gray took an imaginative leap from here to address "upland crops" globally, describing them, and then specifying them as lands of uncertain productivity. Gray's account took a particular lead from the climatologist Carl Troll's study of global seasonal rainfalls to identify and group rain-deficient regions in the tropics. While admitting that Troll's broad categorizations of global rainfall patterns could not hold true year after year, Gray nonetheless presented "agro-climatic situations" for which he believed specific food production and crops research policies could be devised. He identified lands with definitive deficiencies: ones that went without rains for more than seven months every year. The wetter or irrigated areas where high-yielding varieties of rice and wheat had spread thus far due to the Green Revolution measures of the 1960s had been the privileged ones, cornering the bounties of scientific innovation. The drier regions now needed attention.

Clarence Gray's new geography of low-rainfall areas implied that these areas that were populated by agrarian masses had not yet reached their potential to be the most productive. The world could leave them behind at its own peril. The Rockefeller Foundation's perception of the need for a new institution of agricultural research was pinned on turning attention to these subaltern lands, crops, and people. Gray considered a wide range of crops in these regions, but highlighted four to make his point: sorghum, millet, chickpeas, and pigeon peas. Pointing to "the inadequate state of tropical crop production technology" for such crops in Asia and Africa broadly, he made the case for establishing a new center that would serve as a world resource for research on these crops. This center would "develop and demonstrate improved cropping patterns and systems of farming which optimize the use of human and natural resources in low-rainfall, unirrigated, upland tropics."[10]

Gray's advocacy seemingly had an effect, as both the Ford and Rockefeller Foundations began to support the cause of upland crops. Their support crystallized at two preparatory meetings called by Ford and Rockefeller Foundation officials in the summer and fall of 1970 to which important scientists from many countries were invited. Among the agricultural specialist invitees from Asian nations to this meeting was B. P. Pal, the director general of the Indian Council of Agricultural

[9] Ibid. [10] Ibid., v, 68.

Research. Others arrived from the Philippines, Pakistan, Malaysia, and Indonesia; these were the nations where the foundations had shown prior interest.

The foundations' effort to form an upland crops institute transpired almost in parallel with their effort to jump-start the global consortium CGIAR (as discussed by Lucas M. Mueller, Chapter 5, this volume), which emerged in May 1971 under the aegis of the World Bank and United Nations. The 1970s saw an opening for wider collaboration among existing multilateral institutions. The World Bank was looking to channel its funds towards an organization that would dispense with the need for US bilateral aid to individual countries. The World Bank's president, Robert McNamara, found particularly willing partners in this task in the Rockefeller and Ford Foundations.

A foundations-wide counterpart to multilateralism was building its own momentum with a different logic. In the 1960s, a preference for decentering aid for agriculture and rural welfare began to find favor among foundation leaders. In the summer of 1966, John D. Rockefeller III spoke with trepidation to the Far East American Council in New York, warning about an apparent "American overpresence" in Asia that might turn out to be counterproductive. The talk, copies of which were pre-circulated, was titled "Our Dilemma in Asia" and stressed that "our presence supports . . . [Asia's] self-preservation but it bothers their self-respect." Rockefeller emphasized the need to restore balance, whereby greater Asian initiatives in security, finance, and development could be achieved.[11] As a corollary to building Asian solidarity and initiative, John D. Rockefeller III also suggested moving away from policies of American bilateral aid and towards multilateral aid that would reduce the American footprint in Asia while securing the same set of goals.

The coming together of the World Bank, United Nations, and the foundations led to the formation of CGIAR. This partnership had a specific outcome for the "upland crops" project that had germinated within the foundations. The foundations brought into CGIAR their existing research centers and programs, including their plans for an upland crops institute. This initiative got subsumed within CGIAR's emerging projects in India, where it was sold, thanks to the CGIAR umbrella, as a United Nations initiative. The Rockefeller Foundation's upland crops institute thus had its reincarnation in India as ICRISAT, an

[11] John D. Rockefeller III, "Our Dilemma in Asia," May 17, 1966, Ralph Cummings papers, Folder 3, Box 34, Series 33, p. 1. The idea of multilateralism in aid apparently had a broader constituency. Rockefeller cited two World Bank presidents, Eugene Black and George Woods, as well as the influential senator from Arkansas, James William Fulbright, who served on the powerful Foreign Relations Committee.

international research center sustained by multilateral funding that would target areas now designated as the "semi-arid tropics."

The formal plan for ICRISAT concretized rapidly as CGIAR and its core decision-making body, the Technical Advisory Committee (TAC), were formed. At its very first meeting, the TAC formed a team to explore the feasibility of such an institution that comprised Louis Sauger (Senegal), Hugh Doggett (United Kingdom), John Comeau (Canada), and Ralph Cummings (United States). The team settled on Hyderabad in southern India as the future site for the new institution. The Ford Foundation was designated by CGIAR as the executing agency to negotiate details with the government of India. It was Ford Foundation officials who signed an agreement with India on March 28, 1972 on behalf of CGIAR. The institution was set up as an international entity under the United Nations Privileges and Immunities Act.[12] The governing board held its first meeting in Hyderabad on July 5, 1972.[13]

The Political and Diplomatic Context in India

Just as outreach on ICRISAT in India was an admixture of foundation and CGIAR efforts out of which different strands of influence can be teased, the local history of ICRISAT's establishment was threaded with continuities and disjunctures that require purposeful unravelling. In particular, the launch of ICRISAT coincided with a rupture in long-running USAID-assisted agricultural programs in India. To those loose ends was tied the umbilical cord of the new institution. The birth of ICRISAT as a wellspring of Indian agrarian visions in the 1970s was rooted in this moment of transition.

The decade of the 1970s was one of tremendous flux in US–India relations with respect to aid and in terms of overall diplomatic relations that suddenly turned sour. The historian Srinath Raghavan connects these changes to the new "Nixon Doctrine" that *prima facie* aimed to deal with the changing dynamics of the Cold War, the rise of a multipolar world, and the acceleration of globalization. On aid relationships, the Nixon Doctrine clearly preferred "a trimming of the American foreign aid program by turning away from bilateral, project-based aid and technical assistance and toward . . . multilateral financial flows to developing countries." On the diplomatic front, the Nixon administration actively sought

[12] Statement by Deputy Minister of State for Agriculture Jagannath Pahadia, Rajya Sabha, May 24, 1972, 103–104, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/80/F24.05.1972.pdf.

[13] "ICRISAT Presentation," July 27, 1976, Ralph Cummings papers, Folder 2, Box 69, Series 33, p. 1.

the intercession of Pakistan in establishing a better relationship with China. These two tendencies seemed to come to a point of explicit realization around the time that India entered the Bangladesh War, the 1971 armed conflict between Bengali nationalists and the Pakistani military that ultimately resulted in the birth of Bangladesh. Taking India's declaration of war against Pakistan on December 3, 1971 as an act that crossed the line, Nixon announced the halt of economic aid to India, including $87 million in USAID support already in the pipeline. The curtailing of USAID presence in India aligned with a prevailing mood among US and Indian officials about "reorienting economic ties" that aimed to reduce USAID's "footprint in India."[14]

In 1971, when Nixon's decision to cut off aid was announced, the hammer fell most notably on the initiative by five US land-grant universities that had been active in India on a charge from USAID on a myriad of agricultural programs.[15] Late in the summer of 1972, G. V. K. Rao, development commissioner in the state of Mysore, informed the University of Tennessee team working for the southern Indian states that all of its programs would be terminated on September 30, 1972. Rao gratefully acknowledged the role the Americans had played in institution- and program-building for Mysore's department of agriculture and in setting up the University of Agricultural Sciences in Bangalore.[16]

The top executives of the agricultural universities that were being set up with expertise from American land grants expressed regret at the

[14] Srinath Raghavan, *Fierce Enigmas: A History of the United States in South Asia* (New York: Basic Books, 2018), pp. 273–308, at 294–295. David Engerman's study of foreign aid in India discusses the longer arc of USAID efforts there. In the years of somewhat strained Indo-US relations under Indira Gandhi from 1966 to 1971, there was a certain trend towards "financialization of aid" that abetted the withdrawal of American personnel from field offices in India and instead leaned on providing support through dollars alone. India, for its part, also emphasized that, while it would be open to financial aid, it would slash the number of American experts actually present on the ground. David Engerman, *The Price of Aid: The Economic Cold War in India* (Cambridge: Harvard University Press, 2018), pp. 250–259, 328–337. After the 1971 interregnum, the United States much preferred to pump aid into India through the World Bank's Aid India Consortium.

[15] Between 1960 and 1971, twelve Indian "land-grant" state universities emerged, projecting implementation of a specifically Americanist "land-grant modernization" vision in India; Prakash Kumar, "Modalities of Modernization: American Technic in Colonial and Postcolonial India," in John Krige, ed., *How Knowledge Moves: Writing the Transnational History of Science and Technology* (Chicago: University of Chicago Press, 2019), pp. 120–148, esp. 134–140. See also Henry C. Hart, *Campus India: An Appraisal of American College Programs in India* (East Lansing: Michigan State University Press, 1961).

[16] G. V. K. Rao to William Ward, July 8, 1972, Agency for International Development and College of Agriculture Records, AR.0387, University of Tennessee, Knoxville, Special Collections Library (hereafter USAID/Tennessee papers), Folder 7, Box 9.

snapping of ties with their American counterparts. A letter from G. Rangaswami, the vice chancellor of the newly established Tamil Nadu Agricultural University, regretted "the decision taken at Delhi to terminate the USAID operations" and expressed remorse that his "hopes of receiving assistance to develop the University have been completely thwarted." He had been in contact with the USAID team since 1958 and was "very unhappy" over the recent turn of events.[17] The University of Agricultural Sciences vice chancellor, K. C. Naik, called this breakdown in collaborative engagements with USAID an "unfortunate development" and was "sad that a most profitable relationship developed over many years between the US universities and Indian agricultural universities has come to an abrupt end."[18] Naik spoke very approvingly of the results that he thought the USAID programs had wrought. Without them "the progress of Indian agriculture, including that of agriculture in Mysore state would have been trivial." Naik was referring broadly to the long-running American aid programs in rural India as he alluded to the "seeds sown by the TCM [the US Technical Cooperation Mission to India] and USAID and the help received from a few selected US universities" since the 1950s, and to American participants "who have worked with us intimately, as members of a family, for reorienting our educational system in agricultural sciences, to render effective service to our farmers."[19]

In the 1950s and 1960s, USAID-assisted agricultural projects in India had served as a magnet around which US and Indian collaborators coalesced. They formed an epistemic community in India within which common visions of agrarian progress developed and prospered. These forces ensured not only that the formal break in American aid would not spell the end of certain agricultural programs, but also that an initiative such as ICRISAT, which promised to continue prior visions of agricultural progress, would rise and be consolidated. Naik mused about the first joint Indo-American team of 1955 that had initially studied the prospect of the land-grant model for establishing agricultural universities in India. The team's recommendations had led to the first postgraduate teaching program in agricultural sciences at IARI in Delhi. This program was supported by the Rockefeller Foundation, and Ralph Cummings, who was appointed director of postgraduate

[17] G. Rangaswami to William B. Ward, June 26, 1972, USAID/Tennessee papers, Folder 7, Box 9.
[18] K. C. Naik to William B. Ward, June 22, 1972, USAID/Tennessee papers, Folder 7, Box 9.
[19] K. C. Naik, Statement, USAID/Tennessee papers, Folder 7, Box 9, p. 3.

teaching, was assigned the responsibility for defining and developing the program.[20] A second joint Indo-American team was constituted in 1959 – Naik was a member of this team – and its recommendations solidified the project to launch agricultural universities in India with the aid of US land-grant institutions.[21] Cummings was on this occasion appointed by the government of India to lead a committee in drafting the basic framework for agricultural universities in India. The Cummings Report of 1960, as it came to be later called, provided the blueprint for different states to draft legislation for their respective agricultural universities. Cummings was involved with these separate university projects in a supervisory role.

Speaking in 1972, Naik was being prophetic in hoping that the cessation of collaborative programs with the US universities was "temporary." He "look[ed] forward to the day when we may be able to pick up the threads and once again proceed on a path of cooperation and collaboration for the good of Indian agriculture."[22] The thick matrix of collaborative programs of the past and the relationships to which Naik alluded boded well for the future. The momentum of these programs was such that a cast of characters on the Indian and the American side was standing by and provided a propitious context for the birth of ICRISAT in Hyderabad. In a move that was telling of how old connections paved the way for the new institution, Cummings returned to India as the first director general of ICRISAT, steadying the institution in its initial years between 1972 and 1977. He was representative of those who straddled the worlds of the US State Department and private foundations, as well as CGIAR. Together, individuals like Cummings and Naik ensured that their agrarian visions survived in the face of blips or breakdowns in political and diplomatic relations.

The return of Ralph Cummings to the helm of ICRISAT testified to the resilience of these actors in mobilizing externally funded agrarian programs in India. Yet Cummings and others could not have achieved such outcomes without institutional and political mobilization within India as well, and it is to these mobilizations that I now turn.

[20] "Statement Relative to Tentative Plan of Operation under Rockefeller Foundation – Government of India Agreement on Agricultural Research and Education," Ralph Cummings papers, Folder 3, Box 34, Series 33.

[21] K. C. Naik and A. Sankaram, *A History of Agricultural Universities* (New Delhi: Oxford and IBH Publishing), pp. 20–23.

[22] K. C. Naik, Statement, USAID/Tennessee papers, Folder 7, Box 9, p. 4.

Priming the Pump

In February 1979, Ralph Cummings delivered the prestigious Lal Bahadur Shastri Memorial lecture – named after the country's second prime minister and icon of Indian farmers' prowess – in which he celebrated twenty-five years of scientific contributions to agricultural progress in India. The tone of the talk was slightly autobiographical, with Cummings drawing a straight line from his arrival in India in 1956 and his contribution to the launch of the country's first postgraduate teaching program at IARI to the 1970s, when the country had turned its focus to "semi-arid" crops.[23] Two years earlier, he had ended his tenure at ICRISAT and assumed the chairmanship of the CGIAR TAC. He was convinced of the need for constant attention to the application of science in bolstering agricultural yields. "You have to run as fast as you can to stay where you are. To get someplace else, you have to run even faster," he explained to colleagues in Indonesia, paraphrasing from Lewis Carroll's *Alice in Wonderland*.[24] In his new role of global ambassador of crop research, Cummings ensured that his message of acceleration and intensification – and his celebration of external aid as the means of bringing about change – could not be missed. However, what Cummings ignored in his account of the recent history of agricultural science in India was the synergy between ICRISAT's global objectives and India's national project in the 1970s. A study of Indian administrative records, political documents, and domestic context shows that Indian scientists and politicians, too, had come to embrace the idea of expanding the Green Revolution to the crops of "dryland" areas.

In India, the Fourth Five-Year Plan (1969–74), adopted under Prime Minister Indira Gandhi, had accelerated national efforts to promote research on "rainfed crops" – those grown without access to irrigation – a move that anticipated ICRISAT's focus on "upland" or "semi-arid" crops. In that sense, the Rockefeller Foundation outreach of 1971, which I described above, could not have been more opportune. Indeed, a case can be made that the watchful Rockefeller Foundation officials saw India's eagerness to move towards a focus on rainfed crops and decided the ground was propitious to bring their effort to India. The building of political will in India towards this agricultural agenda could be seen in parliamentary discussions and in concrete steps that solemnized new

[23] Ralph Cummings, "Science in Service to Agriculture – A Quarter Century of Progress," Lal Bahadur Shastri Memorial Lecture, New Delhi, February 2, 1979, Ralph Cummings papers, Folder 3, Box 72.

[24] Ralph Cummings, "Agricultural Research: Problems and Prospects," Address at Ujung Pandang, South Sulawesi, Indonesia, September 26, 1977, Ralph Cummings papers, Folder 1, Box 72, p. 1.

research programs. For example, the Indian Council of Agricultural Research initiated all-India coordinated projects for millet (1965), pulses (including chickpeas and pigeon peas) (1966), and sorghum (1969).[25] Another coordinated program on groundnut came later during the Eighth Plan. It was the Fourth Plan, which started in 1969, that apportioned definitive funds for these coordinated nationwide projects and enabled the setting-up of designated institutions. These were then supplanted by an integrated dryland agriculture development project that was also launched during the Fourth Plan.[26] The demand for research on these crops often came from constituents of rainfed regions and their representatives in parliament. In 1972, for instance, Rajya Sabha MP from Karnataka heckled the agriculture minister, asking repeatedly if the funds allocated to such crops were not "meager," considering that 70 to 80 percent of agricultural lands in the country were farmed under rainfed conditions, while also demanding to know why only a small portion of the allocated funds had been used.[27]

As these separate schemes developed, programmatic connections were established around specific crops. For instance, IARI's all-India coordinated project on sorghum had a subsidiary center in Hyderabad. The same city was also the seat of the Andhra Pradesh Agricultural University, which was being built with the help of Kansas State University (through the USAID land-grant program).[28] At the Andhra Pradesh campus Ralph Cummings and fellow Rockefeller Foundation agronomist Lee House coordinated the Rockefeller-sponsored sorghum program.[29] If anything, it was the connections and reciprocities between US aid programs, Indian political projects, and scientists that ultimately built a critical mass of

[25] Statement by Minister of State for Food, Agriculture, Community Development and Cooperation, Shri Annasaheb Shinde, Rajya Sabha Debate, March 21, 1969, 5165–5166, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/67/F21.03.1969.pdf; Minister Shri Shinde replied to a similar question the following year: see Rajya Sabha Debate, February 27, 1970, 38–39, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/71/F27.02.1970.pdf. For a report on the centers and subcenters set up under the plan for sorghum and millets, see "Scientific Research on Coarse Grains," Rajya Sabha Debate, August 9, 1972, 53–54, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/81/F09.08.1972.pdf.

[26] Question by MP from Karnataka, Shri Veerendra Patil to Minister of State for Agriculture, Rajya Sabha Debate, December 6, 1972, 23, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/82/F06.12.1972.pdf.

[27] Sher Singh, "Development of Dry Farming," Statement, Rajya Sabha Debate, December 6, 1972, 20–24, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/82/F06.12.1972.pdf.

[28] *Sixteen Years in India: A Terminal Report* (Manhattan: International Agricultural Program, Kansas State University, 1972).

[29] M. S. Swaminathan, "In the Beginning . . .," in Lydia Flynn, Ajay Varadachary, and Kate Griffiths, eds., *ICRISAT at 30: The Historic Journey to the Semi-Arid Tropics* (Patancheru: ICRISAT, 2002), pp. 1–6, at 1.

support for ICRISAT. Thirty years after its founding, M. S. Swaminathan (who was appointed director general of the Indian Council of Agricultural Research in 1972) reminisced that the germ of the idea of an international center in India for crops like sorghum came from Lee House, and he had enthusiastically welcomed it, suggesting that if such a center were to come up, it should additionally focus on millet.[30]

As ICRISAT came into being – with a focus on four mandate crops of sorghum, millet, chickpeas, and pigeon peas, to which groundnuts were added in 1976 (see Lucas M. Mueller, Chapter 5, this volume) – these synergies and associations between programs and institutions provided justifications to move forward. The minister of state for agriculture, Annasaheb Shinde, referred to those synergies when he announced the inauguration of the institute in the lower house of the Indian parliament. Shinde thought that ICRISAT would provide a "good opportunity to Indian agricultural scientists," as established experts would now be able to tap into ICRISAT's collections of globally accumulated genetic materials for its mandate crops.[31] As it moved forward with its programs, ICRISAT routinely drew on the resources of Indian agricultural institutions and the informal network of Indian scientists that the prior work of foundations in India had fostered. The government of India, for its part, appreciated the global resources of ICRISAT and made use of them to advance its own agendas. In the 1970s, Indian officials specifically asked for help to bridge the gap with developed nations on the quality and yield of its pulses – crops increasingly central to domestic political agendas.[32]

The Politics of the 1970s

On the morning of January 12, 1975, India's prime minister, Indira Gandhi, landed at Begumpet airport in Hyderabad, en route to lay the foundation stone of ICRISAT's campus (Figure 2.1). She was received at the airport by the state's governor and chief minister. Her entourage included the central minister for transport, Kamalapati Tripati, and All India Congress Committee Secretary P. V. Narasimha Rao, a future

[30] Ibid., p. 1.

[31] Written statement by minister of state for agriculture, in Lok Sabha Annasaheb P. Shinde, *Lok Sabha Debates*, Ninth Session (Fifth Lok Sabha), 5th Series, vol. XXXIII, no. 16, Lok Sabha Secretariat, December 3, 1973, 194–195, at 195, https://eparlib.nic.in/bitstream/123456789/1140/1/lsd_05_09_03-12-1973.pdf.

[32] "Biology of Yield on Pulse Crops," Statement of Minister of State for Agriculture and Irrigation Shri Shah Nawaz Khan, Rajya Sabha Debates, November 27, 1974, 27–30, https://rajyasabha.nic.in/Documents/Official_Debate_Nhindi/Floor/90/F27.11.1974.pdf.

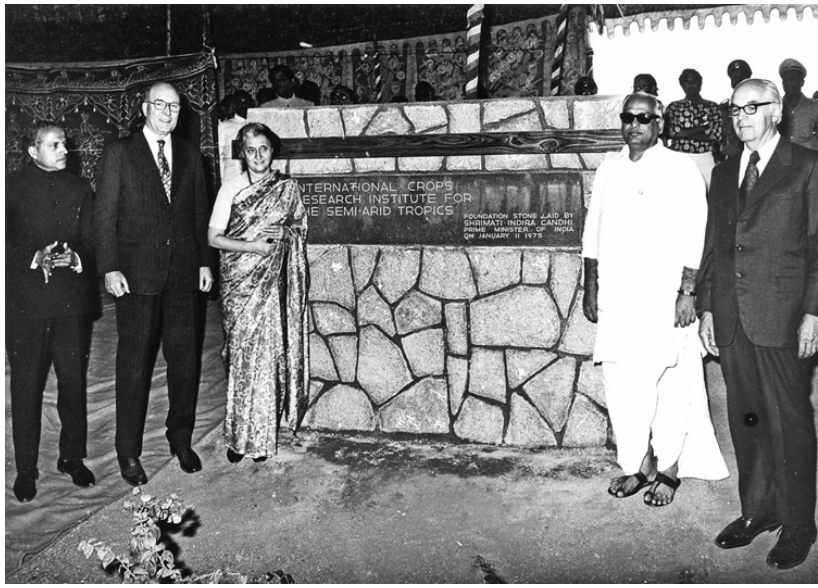

Figure 2.1 Prime Minister Indira Gandhi inaugurating ICRISAT in 1975. Photo courtesy of ICRISAT and reprinted by permission.

prime minister. The arrival of Indira Gandhi and the company of high-level officials signaled the political salience of the new institution to the ruling party and to her brand of popular politics.

Reaching the ICRISAT site at Patancheru, twenty-five kilometers outside the city, Gandhi addressed the audience gathered there on the relevance of the new institute and its research program, emphasizing India's core problem of hunger. All other social and developmental issues could wait until the problem of hunger had been solved. She referred explicitly to the Green Revolution policies of the mid 1960s and the criticism her government had faced over how those interventions had aggravated economic disparity. She reminded the audience that, despite fomenting inequality, the Green Revolution had resolved recurrent famines and food shortages of the past. India was now at a new stage in its quest to solve the problem of hunger. The nation needed to extend the "modern methods" of the Green Revolution to areas practicing dryland agriculture. Some 70 percent of India's agricultural land was owned by smallholder farmers, many of whom were located in semi-arid zones. The new institution with its focus on small farmers and semi-arid crops could

potentially address hunger and inequality simultaneously.[33] Gandhi's visit to ICRISAT relayed clearly her support for a strategy of expansion: "we have to follow modern methods in arid land as soon as possible."[34] In this, she drew a direct line from the prior Green Revolution to its anticipated dryland sequel. The emphasis on productivity that had been applied in wheat and rice now needed to be extended to crops of low-rainfall areas.

Gandhi's address to ICRISAT also amplified the "international" character of the new institute. Trying to counter the division of the world into "first-, second-, third-, or fourth-world countries," she idealized the institution as a global center in which scientists from multiple countries participated. Although she asserted pride in the contributions made by Indian scientists, she would not shy away from assistance offered by other countries. Praising ICRISAT's composite backing, Gandhi argued, "This international institute which is doing research on crops in semi-arid tropics is a model for conduct of international relations between nations."[35] Indian scientists were themselves copartners in the institution after all, she implied.

Out of political necessity, Gandhi overlooked the fact that CGIAR, although reflecting an emerging multipolarity, was still backed primarily by expertise and money from US-based sources. Perhaps the cover of CGIAR as being backed by the United Nations Food and Agriculture Organization (FAO), the United Nations Development Programme (UNDP), and the World Bank was sufficient for the Indian political class to accept the declaration of its international character. ICRISAT's American sheen had been diluted just enough to allow Indian politicians to sell the institution to their constituents as anything but American. Gandhi could instead highlight the "pooling of talents of scientists and technicians, regardless of nationality, race, or color" in ICRISAT. They were all unified, Gandhi stressed, "in [waging] this greatest of all wars, the war against hunger."[36] It was partly because Gandhi could bring herself to see the international as opposed to the American face of ICRISAT, and because she could bring her constituents to believe in this international image as well, that ICRISAT was accepted, even as popular anti-American sentiment in India was peaking in the wake of the Nixon

[33] "There Should Not Be Any Difference between Nations in Eradicating Hunger: PM," *Andhra Prabha* (January 12, 1975), 1, 2; "Scientists Should Help in Higher Food Production at Lower Cost: PM Request," *Andhra Patrika* (January 12, 1975), 1, 4. Translation from Telugu.

[34] "There Should Not Be Any Difference," 1, 2.

[35] "Mankind Should Put Efforts in Removing Hunger Problem: PM Indira Gandhi," *Andhra Bhumi* (January 12, 1975), 1, 2. Translation from Telugu.

[36] *ICRISAT at 30*, 29.

administration's policies in providing support to Pakistan during the Bangladesh War.[37]

ICRISAT's opening coincided with an era of momentous changes in India's national electoral politics as the reins of power passed from Indira Gandhi and the Congress Party to a rival political formation that brought to the helm two non-Congress Party prime ministers – Morarji Desai in 1977 and Chaudhury Charan Singh in 1979. Four years after Gandhi laid ICRISAT's foundation stone, Charan Singh arrived at ICRISAT as prime minister to "dedicate" the campus, signaling ICRISAT's full-fledged operationality. Gandhi and Singh were two polar opposites in the politically divisive 1970s. Paul Brass speaks of "the life-long struggle between . . . [Charan Singh] and Indira Gandhi."[38] These rivalries came to the boil in the 1970s.[39] The presence of Gandhi and Singh on the ICRISAT campus four years apart represented a unique and rare convergence in their respective claim-making.

As Prime Minister Charan Singh arrived on the ICRISAT campus in August 1979, the diversity of political support enjoyed by the new institution shone through (Figure 2.2). This time the distinguished gathering included key ministers for agriculture, industry, and defense – individuals who were themselves of diverse political leanings and now part of a coalition government. Also in attendance was the Andhra Pradesh chief minister, Marri Chenna Reddy, who belonged to the Congress Party, a rival of the political conglomeration that had catapulted Singh to power in New Delhi. The joint appearance of these leaders at ICRISAT highlighted the issues on which a range of political parties could agree, despite standing in opposition along party lines at the center. Singh had established his political reputation as a peasant leader from the eastern state of Uttar Pradesh. At the national level, he had continued to speak for farmers. It is from this position that he spoke at ICRISAT. Singh exhorted the new center's scientists to "give utmost priority to removing inequalities in economic development of our nation." Clearly Singh was thinking in terms of India's predominantly agrarian economy,

[37] On the negative popular Indian sentiment towards the United States in the early 1970s, see Raghavan, *Fierce Enigmas*; Engerman, *The Price of Aid*.

[38] Paul Brass, *An Indian Political Life: Charan Singh and Congress Politics, 1967 to 1987* (New Delhi: Sage Publications, 2014), p. xiii.

[39] After Indira Gandhi lost the national election of 1977, Singh, as home minister of the Janata Party government, pursued legal cases against Gandhi and her son, Sanjay Gandhi. When Janata Party rule collapsed under the weight of its internal rivalries, Singh became prime minister as the new leader of the Janata Party (Secular). With a Machiavellian sleight of hand, at this moment Gandhi's party supported Singh, enabling him to conjure a majority and form a government on July 18, 1979. Gyan Prakash, *Emergency Chronicles: Indira Gandhi and Democracy's Turning Point* (Princeton, NJ: Princeton University Press, 2019), pp. 356–357.

Figure 2.2 Prime Minister Charan Singh at the dedication of ICRISAT in 1979. Photo courtesy of ICRISAT and reprinted by permission.

in which small farmers in rainfed areas had to be pulled up economically. He mentioned the dependence of 70 percent of the country's agriculture on uncertain rains and thus underlined the importance of ICRISAT in addressing this vast geography and "helping the farmers who are dependent solely on rainfall." Meanwhile the chief minister, Reddy, thanked ICRISAT for choosing his state as its location. An element of regional pride suffused Reddy's adulation as he emphasized the importance of Andhra Pradesh in Indian agriculture.[40] In short, a tenuous alliance seemed to exist over ICRISAT. This secured its place as an Indian, as well as an international, institution.

Conclusion

ICRISAT was welcomed in India in 1972 because its scientific goals looked appropriate to and in line with established state research programs

[40] *Andhra Jyoti,* August 31, 1979. Translation from Telugu.

and the nation's settled agenda for agrarian modernization. ICRISAT's focus on marginal lands and cultivators offered conjoint space to accommodate the politics of both Indira Gandhi and Charan Singh. Gandhi's rise from 1967 to 1972 was based on an effort to project herself as "a radical reformer." Her populist politics in the 1970s highlighted the goal of *garibi hatao*, the removal of poverty.[41] Charan Singh held different political positions, on account of his stature as a peasant leader, but ICRISAT still accommodated his advocacy on behalf of marginal farmers. The nature of programming at ICRISAT allowed both Indira Gandhi and Charan Singh to come to a consensus without compromising their different electoral politics.

Set up as an "international center," ICRISAT in India mirrored the dynamic world order of the 1970s and India's realization of its own priorities within new global patterns. The diminishing impact of the rigid bipolar divisions of the Cold War that scholars have identified as a trend in the 1970s is visible in the cast of multilateral organizations and national governments that stood behind the establishment of ICRISAT.[42] ICRISAT was the fifth international agricultural research center of the CGIAR system and – as Ralph Cummings emphasized in his role as ICRISAT's first director general – the first center to be established after the formal constitution of that system.[43] Cummings' emphasis on ICRISAT's origins within CGIAR was meant to highlight the new institution's composite backing. But in many ways the vision and work at ICRISAT reflected a continuation of prior trends in agricultural development, including India's earlier pursuit of the Green Revolution, that were earmarked now by a new stage in institutional evolution. The circumstances of postcolonial India allowed for the emergence of new forms of institutionalized expertise that developed outside the direct realm of the local state. ICRISAT arrived in a generative space where global visions sought the approval of Indian scientists and politicians, if not the Indian state per se.

[41] For Indira Gandhi's stamp on the turbulent Indian politics of the 1970s, see Ramachandra Guha, *India after Gandhi: The History of the World's Largest Democracy* (New Delhi: Macmillan, 2007), pp. 464–488; Prakash, *Emergency Chronicles*, pp. 136–139.

[42] Daniel Sargent, *A Superpower Transformed: The Remaking of American Foreign Relations in the 1970s* (New York: Oxford University Press, 2015).

[43] Ralph Cummings, "ICRISAT Presentation," July 27, 1976, Ralph Cummings papers, Folder 2, Box 69, Series 33, p. 1.