RESEARCH ESSAY | Emma McDonell, Indiana University

Miracle Foods: Quinoa, Curative Metaphors, and the Depoliticization of Global Hunger Politics

Abstract: Since the post–World War II "discovery" of global malnutrition and the concomitant rise of the development apparatus, various "miracle foods" have been proposed by international development organizations as solutions to chronic undernourishment in developing countries. This article draws on media analysis, development literature, and interviews to explore the "miracle food narrative" (MFN) in three cases: high-lysine corn, Golden Rice, and quinoa, which as the incumbent miracle food is the focus of the paper. The essay contends that miracle food narratives depoliticize hunger through a "curative metaphor." This trope bolsters a paternal logic that blames malnutrition on the undernourished, and blurs problems of access and dispossession, locating "the solution" in Western philanthropy or economic development. The essay argues that quinoa's interpellation as a global miracle food is directly related to the rise of "multicultural" and "sustainable" development paradigms, and corresponding changes in the roles of "culture/tradition" and "environment" in development discourse. While quinoa's insertion in the MFN departs in some ways from the fable of the Western scientist designing the hunger antidote by representationally displacing authority in science with authority in "traditional ways," this recasting of the actors leaves the broader narrative and underlying curative metaphor in place. As malnutrition alleviation programs integrate cultural difference, critical food scholars must pay close attention to the ways in which tradition and culture are invoked. To conclude, I draw attention to the fraught interaction of the politics of indigeneity and the politics of global malnutrition that arises with the shifting roles of science and tradition in quinoa's adaptation of the miracle food narrative, as well as scale disjunctures between simple miracle food stories and complicated realities, a dynamic that underscores the need for agrifood and food policy scholars to pay close attention to complex interactions of scale.

Keywords: miracle foods, development discourse, malnutrition, quinoa, indigeneity, sustainability

Dramatic improvements in the world's leading food grains—rice, wheat and corn—may enable mankind one day to satisfy its hunger. All over the world scientists are tinkering with the genetic structures of grain to make them shorter, sturdier, and more productive and increasingly nutritious.

—VICTORIA ADVOCATE NEWSPAPER (1968)

THE POST–WORLD WAR II construction of the development apparatus brought hunger within the purview of scientific knowledge. In the 1940s, media accounts and government reports invoked neo-Malthusian fears of an exponentially expanding global population that would soon surpass the global carrying capacity. Millions would perish, went the logic, unless "developed" nations intervened with their supreme capabilities in science and technology to feed the hungry masses.

Scientific classifications of hunger (e.g., malnourishment) were constructed and mapped onto nations and bodies through detailed quantitative measurements. While these scientific classifications appear apolitical and objective, categorizations of hungry bodies infer certain stories of blame, and justify very political, interventionist "solutions." For instance, if "hunger" in the sense of insufficient food supplies is the problem, then bulk food aid is the solution. If "malnutrition" due to overreliance on a single low-nutrition food is the problem, substituting that food for one with a higher nutrient content is a rational solution. The framing of the problem implies a particular remedy.

This paper examines a particular subset of these proposed remedies, which I call "miracle foods," a strategy that emerged in the 1960s and has been reincarnated multiple times thereafter. I contend that the "miracle food narrative" (MFN), the tale of the food with the power to cure global hunger, emerged in the 1960s with high-lysine corn in the context of the Green Revolution and was reconstructed with Golden Rice in the context of the "micronutrient turn" (cf. Kimura 2013) of the 1990s, and most recently, with the

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FIGURE 1: *Quinoa* panojas *in Cuzco, Peru.*
PHOTOGRAPH BY EMMA MCDONELL © 2015

proposal of quinoa as a miracle food *and* miracle crop, in the context of recent changes in development discourse around ideas of sustainability and culture. While panacea myths have deep roots in Western Europe, the application of this idea to global malnutrition was something new that arose alongside the post–WWII development apparatus. As nutritionists sought to delineate universal nutritional requirements for the human body and agronomists bred "improved" crops, development practitioners saw potential to create a single food that would *cure* malnutrition. This MFN was attractive, durable, and flexible, a combination of traits that have allowed for miracle food cycles involving a period of excitement and media attention along with the forging of webs of powerful institutional actors endorsing the food's potential, followed by a slow retreat into the background as they fail to meet expectations. A few years later a new food emerges and follows the pattern. Time and again, these foods fail to meet the lofty aspirations, and yet the "First World" public does not question the broader logic of miracle foods, nor the implied curative metaphor for hunger.[1]

I deconstruct the foundational logic of miracle foods in order to problematize the Western scientific understanding of hunger. By honing in on proximate causes of hunger and locating blame in the hungry people themselves, ultimate causes, such as global political economy and structural adjustment programs that implicate Westerners, are obscured. I draw from Dianne Rocheleau's (1995) work on "crisis narratives" to illustrate problems with the analytical scale and linkages of cause and effect in miracle food stories. By framing hunger as a biomedical issue with a biomedical solution, MFNs define relevant actors and limit the terms and scale of debate. James Ferguson's (1990) ideas about development discourse suggest that stories of hunger panaceas, like the many development projects that are unsuccessful in achieving their public goals, are not innocuous in their ineffectiveness, but are powerful in their reinforcement of a depoliticized framing of hunger. I argue that miracle food fantasies reify conceptions of malnutrition as a biomedical pathology by invoking a "curative" metaphor. This trope bolsters a paternal logic by blaming malnutrition on the undernourished, blurring problems of access and dispossession, and locating the solution in Western philanthropy or economic development.

This essay outlines the structure and defining characteristics of an MFN by tracing the trajectories of three proposed hunger panaceas: high-lysine corn, Golden Rice, and quinoa. I examine the former two briefly in order to sketch the MFN and provide points of comparison for a more detailed analysis of the incumbent miracle food, quinoa.[2] Ostensibly an unlikely candidate for the MFN considering its origins far outside the First World scientific laboratories (both in time and space) that spawned previous miracle foods, quinoa provides a particularly revelatory case study to examine how the MFN adapts to changing development discourse milieus.[3] I elaborate upon quinoa's recent interpellation as a miracle food in order to underscore a decisive shift in the relative roles of science and tradition in the MFN and demonstrate how quinoa's insertion into and modification of the MFN occurs in direct relation to the rise of discourses of "multicultural" and "sustainable" development. Quinoa is framed as a miracle food *and* a miracle crop that while curing global hunger, can also provide poverty alleviation, biodiversity conservation, and climate change adaptation. I argue that while this acknowledgment of the interconnectedness of malnutrition, poverty, and climate uncertainty offers a more complex reading of "the problem," such that malnutrition does not occur in a vacuum, the framing of the miracle food as "the solution" serves to expand the depoliticizing power of MFN's curative metaphor with regard to these interdependent issues, and in doing so obscures their incredibly political nature.

I employ and extend Aya Kimura's (2013) analysis of "charismatic nutrients" and their corresponding "nutritional fixes." Kimura examines the "micronutrient turn," the rise of micronutrient deficiencies in expert discourses about hunger in the 1990s and the parallel increasing dominance of fortification and biofortification as the assumed solutions to "the problem."[4] Kimura, drawing on Gyorgy Scrinis (2008), contends that nutritionism, the increasingly dominant ideology that sees food as primarily a "vehicle for delivering nutrients," frames the Third World food problem as an issue of "inferior" food, and in doing so implies that the solution lies in finding the missing "supernutrient" and providing it in the most efficient way possible (Kimura 2013: 3–4). These technical attempts to solve the Third World food problem by exclusively targeting its nutritional aspect obscure structural inequalities and power asymmetries by recasting the food problem as a primarily technical matter (ibid.: 5). Kimura utilizes Max Weber's (1978) discussion of "charismatic authority" as an unstable form of authority harnessed by leaders who exude power beyond normal expectations to examine what she calls charismatic nutrients. For Weber, "charisma" is not divinely endowed, but rather a social status upheld by sociopolitical webs and as such is inherently unstable and ephemeral. Kimura uses this framework to highlight successive eras of charismatic nutrients (e.g., protein in the mid-twentieth century) and their corresponding "nutritional fixes," which she argues become powerful not because of their innate potency, but instead as a result of the sociopolitical networks built around them (ibid.: 19).

Miracle foods and the curative metaphor for hunger alleviation provide a conceptual foundation for charismatic micronutrients, supplying a narrative framework deeply embedded in Western understandings of hunger. This project's examinations of high-lysine corn and Golden Rice both follow the example set forth by Kimura; however, my analysis of quinoa adapts and expands this model to account for the changes in development discourse, cultural-historical context, and geographical specificity that have defined the emergence of quinoa as a miracle food. Quinoa is inserted into the MFN that high-lysine corn and Golden Rice also follow, though quinoa's ascent does not entail a charismatic nutrient. Much like Kimura argues that the 1990s were characterized by the micronutrient turn, I contend that quinoa signals the dawn of the subsequent era in which charismatic whole foods come to be seen as solutions, and the authority of "traditional ways" comes to, rhetorically, replace the authority of scientific expertise. I link this shift to emergent discourses of "sustainable" and "multicultural" development.

First, I summarize the history of panaceas and hunger relief programs to contextualize the rise of miracle foods. Next, I use high-lysine corn and Golden Rice as case studies to illuminate the patterned structure of the narrative and call attention to the aforementioned critiques. I then highlight the ways in which the MFN depoliticizes hunger and further interrogate quinoa, the incumbent miracle food. At first glance, quinoa indicates a paradigm shift in miracle food logic, but closer scrutiny reveals a similar framework reworked to fit the sustainable, multicultural development era. While quinoa's insertion in the MFN departs in some ways from the fable of the Western scientist designing the hunger antidote by representationally displacing authority in science with authority in "traditional ways," I argue that this recasting of the actors leaves the broader narrative and underlying curative metaphor in place.

Miracle Foods and the Curative Metaphor for Hunger

Tales of panaceas have a long history in Western European philosophy. The term "panacea" derives from the name of the Greek goddess of the universal cure, *Panakeia*. The daughter of the god of medicine, Panakeia could remedy any ailment with a single potion (Kanellou 2004). While all healing systems draw upon the curative powers of ingesting particular herbs or foods, the notion that a single substance existed, or could be created, that would cure all ailments was especially powerful in the Western imagination.

As epidemics plagued a rapidly urbanizing Europe in the nineteenth century, frightened consumers became especially vulnerable to cure-all claims (Porter 2002). Entrepreneurs flooded consumer markets with purported "magic bullet" powders and ointments. Contemporaneously, an expanding global food trade introduced exotic foods into consumer markets that were often advertised as having occult healing powers. A number of now familiar foods such as chocolate, sugar, and coffee were once peddled as panaceas (ibid.). The "patent medicine" industry waned in the first decades of the twentieth century as products were proven fraudulent, yet the panacea myth endured. Impressive medical advances (e.g., polio vaccine, penicillin) secured Western medicine's dominance and strengthened the idea that scientific progress would unveil concoctions to remedy both bodily and societal ills (ibid.).

Simultaneously, food was increasingly a focal point of "civilizing projects" taking place throughout Europe's colonial possessions and in newly independent nation-states (Carpenter 1994). As Jeffrey Pilcher's (1998) work on culinary nationalism in Mexico highlights, the consumption of corn and other native foods was seen by colonists as the root of Native Americans' alleged inferiority. This belief fueled a surge in nutritional education programs in rural areas to teach "Indians" proper

European nutrition, and corn tortillas were largely replaced with (wheat) flour ones. Pilcher argues that discourses about the inferiority of native foods served as an artifice to divert attention away from social inequalities—rural malnutrition resulted not from the inferiority of tortillas but from poverty and the lack of land. This framing of better nutrition as a curative for social ills plaguing colonial subjects endures through contemporary times in the form of the MFN.

The rise of nutrition science in the mid-twentieth century, and the attendant "hegemony of reductionism and quantification" in thinking about food and nutrition, has been linked to the US Progressive Era's obsession with the scientific management of all aspects of society (Biltekoff et al. 2014: 17). The MFN came to be seen through this scientized, managerial perspective in the mid-twentieth century, although the storyline predates this particular rendition (emerging out of colonial preoccupations with colonial subjects' diets) and is currently undergoing a transformation due to quinoa's interpellation as a miracle food.

Obviously undernourishment is not new. The scientific category of "malnutrition," however, was constructed as part of the development apparatus in the mid-twentieth century (Escobar 1995). Institutions such as the United Nations, World Bank, and International Monetary Fund were created to coordinate international development. The UN took a central role in malnutrition alleviation, coordinating the Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), and the World Food Programme (WFP), tasked with addressing food production, distribution, and aid, respectively. The international development project necessitated reclassifying binaries of colonizers/colonized or civilized/primitive into First World/Third World or developed/developing, dissociating interventionism from colonialism and rendering intervention as a matter of benevolence (Ferguson 1990). The construct of "underdeveloped" was fabricated through quantitative indices of illiteracy, poverty, and malnutrition, rationalizing outsider control of education, economy, and food supply, respectively (Escobar 1995).

The encapsulation of hunger relief within the development apparatus cannot be read as benign humanitarianism. Countless interventions of "developed" nations in "underdeveloped" nations were initially rationalized through food aid and the aid packages always came with strings attached. Until the 1950s, the "problem" was "hunger," a designation that conjures an image of a global, homogenous mass of empty stomachs in need of filling. Accordingly, the era was dominated by food aid in the form of bulk wheat flour and other surpluses from the United States. With the rise of nutrition science, "malnutrition" replaced "hunger," and with the reframing of the problem came strategies that focused on particular macro- and micronutrients rather than calorie deficiency (Kimura 2013; Escobar 1995). The FAO (2013a) defines "malnutrition" as "an abnormal physiological condition caused by inadequate, unbalanced or excessive consumption of macronutrients and/or micronutrients."[5] It is an umbrella term that includes many manifestations such as rickets, beriberi, and scurvy. The FAO's categorization of malnutrition has involved quantitative measurements of body mass, "stunting," and dietary analyses, grouping the malnourished into categories of type and degree. While documenting bodily symptoms of malnutrition seems straightforward, the ways in which these categories are framed implies particular courses of action by development institutions. Outside "experts" get to link causes and effects, narrate malnutrition, recommend solutions, and then dispense the "cures"—a system of Foucauldian biopolitics in its rawest sense (Foucault 1990).

The food wing of the development apparatus employs a throng of "experts" including nutritionists, demographers, and economists to produce reports, and prescribe advice, often at the national level (Escobar 1995). The surge in scientific knowledge about malnutrition produced myriad hunger alleviation strategies, as anthropologist Arturo Escobar articulates in his analysis of development as discourse:

> Whether the "nutrition problem" was thought to be due to insufficient protein intake, lack of calories, lack of nutrition education, inadequate food intake with poor sanitation and health, low incomes, or insufficient agricultural practices . . . a battery of experts was always on call to design strategies and programs on behalf of the hungry and malnourished people in the Third World. (Escobar 1995: 103)

Malnutrition then, did not objectively describe a state, but defined a particular perspective on a problem and outlined solutions, all of which entailed First World action. By defining, mapping, and proposing solutions to hunger, "First World" political bodies exercised power over "Third World" bodies.

Like most development projects, "experts" frame the miracle food solution as a "rational" plan of action, glazed in technical development speak, portraying malnutrition as a technical (biomedical) problem with a technical (biomedical) solution. The morally loaded techno-speak makes critics of "modernist" agriculture seem regressive. How could one oppose a cure for malnutrition? In the following case studies, I hope to demonstrate why scholars should question the rationale of a biomedical cure for a socioeconomic problem, and more importantly the curative metaphor for hunger. Even as the developmentalist paradigm evolves to privilege "traditional" knowledge as a complement to scientific expertise, as the final case study focusing on quinoa demonstrates, the curative metaphor endures. Aside from questioning whether

miracle foods will even work, we must ask what *else* these stories do.

High-Lysine Corn

Domesticated 9,000 years ago in present-day Mexico, maize was cultivated by American agricultural societies for millennia. By itself, corn provides little in the way of nutrition, but the symbiotic "Three Sisters" association of corn, beans, and squash provides a rich nutrient base (Matsuoka et al. 2002). European colonists reasoned that maize consumption was a handicap inhibiting Americans' "development," since it was the wheat-consuming Europeans who ruled the world (Pilcher 1998). While they brought maize back to Europe and introduced it to Africa in the sixteenth century, it only became a major crop in the latter half of the twentieth century (Miracle 1965). The mid-twentieth-century efforts to improve corn's "deficiency" harken back to the colonial derision of native foods.

As the Green Revolution spread high-yield seeds and "modern" agriculture practices throughout the world via technology-transfer initiatives in the 1960s and 1970s, extensive media coverage of famines in Biafra, Bangladesh, and China brought hunger to the public's attention (Escobar 1995). The FAO's director called for an acceleration of "the fight against hunger and malnutrition" in *Time* magazine alongside photos of starving African children (*Time* 1959). Famines and the Green Revolution were linked in complex ways as "de-peasantization" and agricultural industrialization destabilized the productive bases of food systems. However, development institutions and media accounts framed the link between hunger and agricultural modernization as a simple problem/solution relationship.

In the 1950s, nutrition experts pegged protein deficiency as the culprit in global hunger, leading development institutions to seek a cost-effective protein source (Bressani 1984). When researchers at Purdue University created the opaque-2 (*o2*) maize mutant in 1963, it seemed the cost-effective protein cure had been found. Protein in corn was considered "low quality" due to its deficiency in lysine and tryptophan, but *o2* had almost double the content of these amino acids (Frost and Robinson 1971: 408). By altering amino acid ratios, maize was transformed into "high quality" protein, making it in theory akin to an egg (ibid.).

The press deemed *o2* corn a breakthrough in the "fight against hunger" (ibid.). Headlines like "Grain May Defeat Hunger" ran all across the country. The Rockefeller Foundation, FAO, and UNICEF sponsored implementation trials and nutritional studies. One of these studies found that protein requirements of an adult male were satisfied with 300g of *o2* corn/day compared to 600g regular corn/day (Clark 1966). Another found *o2* was equivalent to 90% of the protein of skim milk (Bressani 1984).

O2 was amenable to the desires of multiple interest groups: development practitioners, nutritionists, economists, and the First World public. Green Revolution proponents could add the "miracle" to PR campaigns to strengthen their humanitarian image. If anyone doubted the righteousness of systematically dismantling local food systems around the world and replacing them with capitalist corn monocultures, *o2* evidenced a connection between corn production and malnutrition alleviation, thereby justifying corn's expansion as it would provide an antidote to protein deficiency. For nutritionists, *o2* was an advance that acknowledged their assertion that hunger programs should center on protein deficiency. First World consumers, concerned with the children in the *Time* magazine photos, could breathe easy as not only was the end of malnutrition in sight, but Americans would have a hand in its eradication.

Economists, the ultimate arbiters of *o2*'s feasibility, favored this approach (Kimura 2013). Given that animal protein is not cost-effective in terms of protein production per unit of land, a cheap grain with good quality protein was the optimal solution. *O2*, and biofortified crops in general, fit quite nicely into economic efficiency cost curves (ibid.: 3).[6] *O2* seemed to be just the protein-based, American-made, cost-effective miracle the First World had been hoping for.

The interest group whose perspectives did not make it into media accounts and development reports was the malnourished people themselves. And when the Rockefeller Foundation began trials of *o2* corn in Colombia, farmers were not impressed. Two critical problems inhibited *o2* corn's miracle food potential: poor yield and different taste characteristics (Frost and Robinson 1971). What was gained in protein was lost in yield, a 6–10% reduction compared to regular corn (Harpstead 1971). Farmers refused to cultivate a crop that provided inferior yields, a logic that was berated by crop scientists as sheer ignorance: "Since he [the farmer] is of a superstitious nature because of low educational level, it will be difficult to convince him he should do something which might result in loss of reduction of his crop, and he therefore may reject the opportunity to make a significant improvement in his family's nutrition" (Frost and Robinson 1971). Moreover, the texture and taste of *o2* corn were decidedly different than regular corn, and *o2* could not mimic tortillas when processed. By the mid-1970s, *o2* corn had disappeared from the spotlight, finding a less acclaimed use as swine fodder. *O2* corn cut the cost of raising swine by $1–2 a head and is used to this day on American pork feedlots (Prasanna et al. 2001; Johnson 1969).

The story of *o2* corn revealed, and reinforced, mid-century First World conceptualizations of hunger. *O2* corn is a godsend in a framework that understands hunger as a homogenous, biomedical problem that requires a single, technological answer. The issue is a lack of *nutrients*, not a lack of nutritious foods or a varied diet, but rather a single nutrient (e.g., protein). Faith in a one-size-fits-all solution illustrates the assumption that malnutrition is mostly the same around the globe, and with the right antidote, can be *cured*. Malnutrition is pathologized, regarded as an abnormal condition with the inflicted group, and treated as a problem with *them*. This story obfuscates relationships among technology, capitalism, social inequality, and malnutrition. While the technification and capitalization of agriculture systems via the Green Revolution was one of the causes of increasing rates of malnutrition, miracle foods invert this relationship, promoting more technology and capitalist entrepreneurship as the solutions to malnutrition (Niazi 2004). According to the miracle food logic, the First World is not at fault for food insecurity, it is the paternal *curer*.[7]

Dianne Rocheleau's (1995) concept of "crisis narratives" helps us unpack the problems of scale in MFNs. Rocheleau examines a series of "crisis narratives" told by "experts" about the Ukambani region of Kenya, the home of the Akamba agropastoralists. Over the course of the twentieth century, outsiders told numerous "stories of crisis" afflicting the region including overgrazing, soil erosion, and threatened wildlife. Each implied a particular (interventionist) solution in their appellation. These "uni-dimensional stories of blame" constructed a version of each "crisis" that located the source in Akamba, even though, as Rocheleau (1995: 1038) asserts, each crisis "can be viewed as successive internal impacts of processes which have their origin—in large part—outside the region." The Akamba farmers recount a different story, one which involves land alienation and limitations placed on the mobility of their settlements and herds.

Like the "crisis narratives," MFNs locate the cause of the problem within the malnourished people themselves. Be it their poor agriculture techniques, "superstition," or high birth rates, the problem is the local people, sometimes national policies, but never global economic structures. The conceptions of scale and causation in this narrative illuminate mainstream ideas that malnutrition is a biomedical problem with global effects that are rooted in many local causes. Miracle foods offer a morsel of progress and modernity, delivering the nutrients that "traditional" diets do not provide, reifying the idea of non-Western cultures as remnants of the past, and obscuring the elephant in the room: structural inequality.

Though *o2* corn faded into the background without producing substantive changes in human hunger, the endeavor was not inconsequential (Prasanna et al. 2001). *O2* set a precedent that hunger was a technical problem requiring a technical solution, and what stood in the way was local culture that made people unreceptive to "miracles." Moreover, it defined the hunger problem as a lack of sufficient food or nutrients instead of, as Amartya Sen famously argued about famine, a lack of power to demand food (Sen 1981).

Golden Rice: The MFN Takes a Micronutrient Turn

In the 1990s, vitamin A deficiency (VAD), a debilitating form of malnutrition resulting from lack of fruit and vegetable intake that results in blindness, reduced immunity, and sometimes death, came to dominate discussions of malnutrition (Debevec and Tivadar 2006). During that time, 100–300 million children, in rural communities primarily in Asia, and to a lesser extent in Africa and Latin America, suffered from VAD and 500,000 children were going blind each year (Sommer 1995). In 1992, the WHO and UNICEF declared eliminating VAD by 2000 a central goal (WHO/UNICEF 1992). VAD was blamed on an overreliance on rice, as conventional rice lacks vitamin A (Nash 2000).

At the same time, the genetic engineering industry was facing intense public criticism. For years, industry lobbyists countered assertions that genetically modified organisms (GMOs) only served the interests of agribusiness by making unsubstantiated claims that genetic engineering (GE) could cure malnutrition. In 1999 Dr. Ingo Potrykus's Rockefeller Foundation–funded research found that adding snippets of bacteria and daffodil DNA to rice produced rice with beta-carotene, a red-orange pigment found in fruits and vegetables that converts into vitamin A inside the human gut. Almost immediately, "Golden Rice" (GR) was hailed the next miracle food and the poster child for GE's humanitarian image (Sommer 2001).

Potrykus was featured on the cover of *Time* magazine holding grains of GR, alongside the title: "This Rice Could Save a Million Kids a Year." A polarized debate erupted over whether GR, or GMOs generally, were the ultimate "miracle foods," or "Frankenfoods" that threatened the future of the planet (Nash 2000). In July 2000, Syngenta bought exclusive rights to GR, promising to spread it across the world, and in 2005 researchers created Golden Rice 2 (GR2), a version with twenty times the beta-carotene of the original (Golden Rice Humanitarian Board 2013). Syngenta donated licensing for GR2 to the Golden Rice Humanitarian Project, a public-private partnership chaired by Dr. Potrykus that receives funding from the World Bank, Bill and Melinda Gates Foundation, USAID, Rockerfeller Foundation, and Syngenta Foundation.

The board is responsible for development, introduction, and promotion of GR (PAN 2007). In 2006, the International Rice Research Institute (IRRI) began field trials breeding the "golden-ness" genes into local rice varieties (Coghlan 2005). Just as *o2* was proposed alongside a campaign for the Green Revolution, GR was promoted alongside the expansion of GMOs, which is sometimes referred to as the Second Green Revolution (*Christian Science Monitor* 2008). Both of these miracle foods served as evidence of the benevolent goals of the agricultural technification and capitalization enterprise.

The GR MFN involved constructing VAD as a discrete category through quantitative statistics. The vast number of people suffering from VAD are presented in GR campaign materials as emotion-grabbing, apolitical facts, much like the "poverty porn" that helped spur the *o2* craze. Framing malnutrition as a biomedical issue of the lack of a single vitamin is incredibly political as it implies the solution is also biomedical, which in this case necessitates GMOs. If the problem is VAD, then a rice containing beta-carotene is a logical solution. Yet VAD is caused by limited access to fruits and vegetables, and VAD is but one facet of a malnutrition complex that is often connected to issues including protein, calorie, and micronutrient deficiencies, not simply vitamin A. The pro-GMO campaign's message is twofold. First, it claims that GR is a miracle for VAD; and second, it suggests that anti-GMO activists are "anti-humanity." This version of the GR story's media presence is extensive. Allowgoldenricenow.org calls opposition to GR a "crime against humanity" and focuses on discrediting anti-GMO groups. By singling out a micronutrient and pathologizing VAD, the already-existing solutions that do not involve GMOs, such as vitamin A capsules or a more varied diet, are concealed (Kimura 2013). Two tablespoons of carrots per day satisfies an adult's vitamin A requirement (Hirsch 2013). When these contentions are brought up, pro-GR groups argue that GR is more cost-effective than the alternatives, an odd claim considering the billions of dollars that have been poured into GR development without usable results (for people suffering from VAD).

While the PR campaign has been conspicuous, GR is not available for cultivation after over a decade of research. Researchers blame activists for inhibiting GR development, but critics argue that researchers have refused to answer essential questions such as: what is the absorption quality of vitamin A in Golden Rice? Environmental activist Vandana Shiva even calls GR a "hoax," a Trojan horse use to bolster public perceptions of GMOs, and never intended to solve VAD (Shiva n.d.).

Like *o2*, the GR story is alluring to "First World" consumers, development practitioners, and agribusiness. The idea that a First World technology will cure malnutrition in the Third casts First World scientists as saviors, curing the problems of poor, suffering, underdeveloped people. This storyline obfuscates connections between soaring rates of VAD and the expansion of modernist agricultural practices that made bulk commodity foods like rice cheap and limited access to fruits and vegetables a narrative in which First World consumers, development practitioners, and scientists are villains, not heroes. The GR MFN limits the scale of analysis, focusing on vitamin A rather than structural inequality or agribusiness. This narrow perspective of cause and effect envisions a global problem and a universal solution. Yet, in its biomedical framework, the problem remains separated from global political economy. As Shiva asserts, "the Golden Rice is part of a package of globalized agriculture which is creating malnutrition," and the scientists advocating Golden Rice perhaps "suffer a more severe form of blindness than children in poor countries" (Shiva 2001).

Quinoa

FROM COMIDA DE INDIOS *TO MIRACLE FOOD*

The miracle food *du jour* is quinoa, a grain-like crop domesticated 5–7,000 years ago in the Andean highlands. Quinoa served as a culinary staple and cultural cornerstone for numerous Andean societies and, until recently, was produced and consumed almost exclusively in the Andes. Within the Inca Empire, quinoa was known as "the Mother Grain" (*chisaya mama* in Quechua), playing a dominant role in both ritual activities and daily meals (Jacobsen 2003; NRC 1989; Mujica et al. 2001). Upon observing its centrality in the social fabric of the Inca Empire, the Spanish viceroy outlawed quinoa production and consumption, ordering its replacement with European grains such as wheat and barley (Hernán Cornejo 2007; Naranjo 2010). The Spaniards' efforts to eradicate quinoa proved unsuccessful and agriculturalists continued to grow and eat quinoa clandestinely, particularly in highland regions where European imports failed. Nonetheless, the coupled denigration of the crop and its cultivators instigated a long-standing disparagement of quinoa as a "*comida de indios*" (Indian food), a stigmatization that endures to this day in many social circles and has contributed to the replacement of quinoa with cheaper, imported foods in urban and rural regions alike during the twentieth century (Repo-Carrasco et al. 2003).

With up to 20% protein, all nine essential amino acids, no gluten, and a host of vitamins and minerals, quinoa's nutritional profile is nothing short of extraordinary (Repo-Carrasco et al. 2003; Cardozo 1959). Comparably impressive is quinoa's ability to thrive in the Andean highlands at altitudes over 14,000 feet, where nutrient-poor soils, frequent droughts, and

occasional El Niño patterns make conditions inhospitable for all but a handful of crops. Moreover, this "pseudo-cereal" includes over three thousand extant varieties; this extreme genetic diversity means it can easily be bred to adapt to disparate environments (PROINPA 2011).[8]

The combination of exceptional nutritional content with hardiness and adaptability have provoked declarations that quinoa is both a "natural" miracle food *and* miracle crop. While quinoa's "biophysical" properties are important preconditions for quinoa's insertion into the MFN, in the following section I highlight the extensive conceptual and material work that goes into situating quinoa within the MFN, transforming quinoa into a miracle food.[9] Given its origins with ancient agriculturalists, contemporary association with indigenous subsistence farmers, and lack of a *single* charismatic micronutrient, quinoa seems to be an unlikely candidate for the MFN, which heretofore has exclusively included crops explicitly created (or "improved") by scientists, and which center on one particular charismatic nutrient. Yet both quinoa's non-Western roots and well-rounded nutrition are foregrounded in its insertion into and adaptation of the MFN. I contend that quinoa's identification as a miracle food signals a marked shift in the relative authority of "science" and "tradition" in the MFN, linked to broader changes in development discourse with the rise of "sustainable" and "multicultural" development paradigms.

This adaptation of the MFN does not do away with its pernicious effects. Following Escobar's (1995) assertion that sustainable development can be read as a discursive move to bring "the environment" under the purview of development's managerial gaze and Charles Hale's (2002) assertion that multiculturalism and neoliberalism are intimately bound, I argue that quinoa's inauguration as a miracle food represents a broadening of the MFN's propensity to depoliticize hunger. The quinoa MFN extends the curative metaphor (along with its prowess to depoliticize) to poverty, climate change adaptation, and biodiversity loss. Echoing and extending Kimura's (2013) argument that different charismatic nutrients come to be celebrated as keys to fighting the Third World food problem at different historical periods in relation to changing discourses about malnutrition, I argue that quinoa's framing as a global hunger miracle food emerges in direct relation to the rise of "sustainable" and "multicultural" development paradigms and corresponding emphases on the "expediency" of culture (cf. Yudice 2004), environmental sustainability, food security, and climate change. Quinoa's interpellation into the MFN reveals that the focus on charismatic *micro*nutrients of the 1990s (which I contend are one instantiation of the MFN) is giving way to a new discursive formulation of problems/solutions in which malnutrition is about a lack of multiple nutrients and is seen as interconnected to other "development challenges." However, even as the reading of "the problem" is more complex in this rendition of the MFN, the myth of the *single* global antidote, the miracle food, re-emerges. While acknowledging linkages among malnutrition, poverty, climate change vulnerability, and biodiversity loss would appear to be an opportunity to design solutions that confront the power-laden, scale-dependent relationships among these issues, instead the durable, flexible MFN reappears, obfuscating this complexity by framing the solution as a simple matter of finding a superior miracle food.

BEFORE THE MFN: DISCOURSES OF "QUINOA DEVELOPMENT"

Quinoa's recent designation as a global-scale miracle food is not its first appointment as a "development crop." While quinoa has only recently been inserted into the (global-scale) MFN as I have articulated it here, diverse development communities have inserted quinoa into diverse development discourses over the past four decades, each emphasizing different qualities (i.e., climate tolerance versus nutrition) and envisioning quinoa "development" in disparate ways. Quinoa has been framed as a tool to alleviate urban malnutrition in the Andes and incorporate peasants into national economies, an "underutilized species" poised for global cultivation, a "Non-Traditional Agro-Export," and a climate change adaptation crop. Quinoa's adaptation to these diverse discourses allowed for the forging of nascent sociopolitical webs, which would be necessary for quinoa's induction into the MFN, and as I argue later, the tensions between different visions of quinoa's future evident in these early narratives have intensified with quinoa's inauguration as a miracle food. Like all foods that come to be seen through the MFN, quinoa is not naturally a miracle food, but has been made to be seen as such through the conceptual and material work of diverse actors.

After four centuries of disparagement and disregard by those outside the highland communities where quinoa remained a staple, quinoa began to catch the attention of researchers and development practitioners in the late 1960s. A handful of Peruvian and Bolivian agronomists initiated projects examining quinoa's agronomic characteristics (Gandarillas 1968; Cárdenas 1969) and nutritional qualities (Cardozo 1959), and funding from OXFAM and FAO supported the first quinoa-breeding programs that sought to develop commercial quinoas (Bonifacio et al. 2014). By 1968 a small research community had coalesced such that the first Chenopodium Convention convened with over forty researchers from Bolivia and Peru.[10] By the 1976 convention, the headcount had almost tripled (Tapia 2014).

Following this research surge, quinoa came to be seen as a potential national development opportunity for Peru and Bolivia during the 1970s. State agricultural development ministries supported studies assessing the feasibility of formalizing domestic quinoa markets, framing quinoa commercialization as an opportunity to alleviate increasing rates of urban malnutrition while integrating "economically unproductive" subsistence farmers into capitalist markets (Egoávil et al. 1979).[11]

As national-level development organizations began to see the development of *domestic* quinoa markets as an opportunity, another group of visionaries saw quinoa as a potentially lucrative export crop. After North American traveler Steve Gorad brought a 50lb bag of the "lost crop of the Inca" back to the United States in 1978, he partnered with entrepreneur Don McKinley and agronomist David Cusack to form the Quinoa Corporation, which began exporting quinoa from Bolivia to the United States in 1983.[12] Quinoa came to occupy a niche role in US health food stores, and by 1988 750 tons of quinoa were sold in the United States (Carimentrand et al. 2013; National Research Council 1989). Quinoa's fledgling export trade corresponded with the rise of the "Non-Traditional Agro-Export" (NTAE) discourse in the 1980s, which touted the export of high-value crops such as flowers and asparagus as panaceas for developing countries that hitherto relied on export of cheap primary commodity crops (Imbruce 2006; Thrupp 1994; PROINPA 2011). Quinoa export from Bolivia increased incrementally throughout the 1990s, and it was not until the early 2000s that demand outside the Andes surged, leading Ecuador and Peru to rapidly develop export markets to capitalize on what would become known as the "Quinoa Boom."

When international development organizations "discovered" quinoa in the 1970s, quinoa was deemed an "underutilized" species and recommended for global propagation. A National Academy of Sciences volume on "Underexploited Tropical Plants with Promising Economic Value" (1975) included a chapter on quinoa that called for increased research, trials in new locations, and intensive plant breeding to expand the geographic range of quinoa cultivation. During the 1980s, quinoa seeds were distributed to more than fifty countries, and quinoa was prominently featured in National Research Council's "Lost Crops of the Inca" (1989), where it was again recommended for worldwide cultivation and judged a "grain of the future." In 1996, the FAO declared quinoa one of "humanity's most promising crops" and soon thereafter organized the American and European Test of Quinoa to evaluate quinoa's ability to grow in North America, Europe, Africa, and Asia and "promote the regional interchange of the excellent genetic material of quinoa among research institutes and universities" (Jacobsen 2003; Mujica et al. 1998).

The "Neglected and Under-utilized Species" (NUS) framework gained acclaim in agricultural development circles in the 1990s as a response to the failures of the Green Revolution model that had focused on increasing production and yields of staple crops such as wheat and corn. Quinoa's classification as an NUS led to partnerships between Biodiversity International, International Fund for Agricultural Development (IFAD), and local agricultural development organizations in Peru and Bolivia in an ambitious multipronged project that collected quinoa germplasm to make it available for breeding, disseminate "improved" seeds, document traditional knowledge about quinoa, and increase income generation from quinoa production by developing commodity chains (Rojas et al. 2009; Padulosi et al. 2014). This project catalyzed alliances between development organizations, national governments, private sector companies, and research organizations, relationships that would serve as scaffolding for the sociopolitical webs enabling quinoa's subsequent insertion into the MFN.

Finally, as the development community's concern with climate change, and specifically relationships between intensifying climate uncertainty and global food production, escalated in the early 2000s, quinoa came to be seen as a "climate change adaptation crop" (Ruiz et al. 2014). Researchers constructed models of quinoa's response to climate change (Lebonvallet and Brisson 2009) and, drawing on evidence that quinoa could be bred to survive beyond the Andes, researchers and development institutions framed quinoa as a critical tool for climate change adaptation (PROINPA 2011).

SHIFTING PARADIGMS: THE RISE OF "MULTICULTURAL" AND "SUSTAINABLE" DEVELOPMENT

While quinoa's adaptation to diverse development discourses generated sociopolitical webs essential to quinoa's eventual insertion into the MFN, major shifts in the roles of "culture" and "the environment" in development discourse in the 1990s provided a critical impetus for quinoa's positioning in the MFN. In the modernization paradigm, which had served as the theoretical basis for development since WWII, culture and tradition were residual categories and barriers to "progress" since "traditional" societies were thought to be in the process of becoming "modern." In the 1970s, development planners began to realize that projects failed if they were not "culturally sensitive," and by the early 1990s multilateral development institutions such as the World Bank were reorganizing objectives to encourage, and sometimes mandate, "multicultural development," a shift

coinciding with the increasing profitability of culture and ethnicity (Escobar 1995: 499; Hale 2002). "Traditional ecological knowledge," known in the development community as TEK, was also gaining attention as a (highly threatened) source of insight into environmental problems. While scientific authority was by no means replaced by tradition, "traditional knowledge" was increasingly seen as an alternative source of authority on environmental issues. Culture, tradition, and traditional knowledge were suddenly not considered hurdles to progress, but as critical resources for development. However, as Hale (2002) cautions, the emerging discourse of multiculturalism should not be read as a benevolent celebration of long-denigrated cultures. Instead the "neoliberal multiculturalism" that arose in the 1990s was a project that simultaneously celebrated benign, and especially profitable, expressions of indigeneity while actively, even violently, denouncing those that posed threats to the nation-state's authority.[13] As such, celebrations of (certain kinds of and ways of expressing) indigeneity also prescribe what is an "acceptable" expression of indigeneity, and as Hale argues, limit the political possibilities of indigenous peoples. Following Hale's insight, we must ask how the commending of quinoa as a praiseworthy expression of indigeneity simultaneously constrains the claims the indigenous quinoa producers can make about quinoa.

Around the same time, the idea of "sustainable development" emerged as a response to concerns about the increasingly visible environmental degradation wrought by what come to be seen as myopic emphases on economic growth and Green Revolution–style approaches to agricultural development (Escobar 1995; Padulosi et al. 2008). "Sustainable development," famously defined by the World Commission on Environment and Development (1987) as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," brought "the environment" under the purview of development planners, and foregrounded issues of biodiversity loss and climate change as "development problems" (Escobar 1995: 194–96). While the degree to which the sustainable development paradigm actually altered the practice of development is debated (Redclift 2002), the discourse of development was radically transformed such that almost all development projects now contain rhetoric about sustainability, and biodiversity, climate change, and "the environment" in general are frequently positioned at the forefront of the development agenda.

While previous miracle foods were scientifically improved versions of primary commodity crops aiming to tackle particular manifestations of malnutrition (e.g., VAD), quinoa's well-rounded nutrition could cure multiple kinds of malnutrition while also attending to issues of culture loss, poverty, biodiversity, and climate change adaptation. Quinoa's association with increasingly dominant development themes of indigenous culture, traditional knowledge, agrobiodiversity, and climate change adaptation were critical in positioning quinoa as a global miracle food and miracle crop, a shift catalyzed by the International Year of Quinoa.

THE INTERNATIONAL YEAR OF QUINOA: QUINOA'S DEBUT AS A GLOBAL MIRACLE FOOD AND MIRACLE CROP

Quinoa's designation as a global miracle food was consolidated and formalized when, approving Bolivia's proposal, the UN General Assembly declared 2013 the International Year of Quinoa (IYQ), launching a year-long series of events dedicated to promoting quinoa as a miracle food *and* miracle crop:

> The IYQ constitutes the first step in an ongoing process to focus world attention on the role that quinoa's biodiversity and nutritional value play in food security, nutrition, and poverty eradication, and support of the achievement of the internationally agreed development goals including the Millennium Development Goals . . . in a context of progressing climate change. (FAO 2013b: 3)

The IYQ's rhetoric explicitly frames quinoa as a "miracle plant," a curative not only for hunger, but a host of development problems (FAO/Biodiversity International 2012). The IYQ was carried out, in similar fashion to many UN-commemorated "Years," through UN-sanctioned events and projects including gourmet gastronomy fairs, product contests, seed competitions, a Slow Food quinoa cookbook, a "World Congress on Quinoa" to convene researchers, a symposium to convoke "diverse stakeholders," and a traveling exhibition detailing quinoa's history, use, and production that visited FAO offices across the globe (FAO 2013b).

The IYQ, I argue, was designed as a self-conscious project to foster and strengthen the sociopolitical webs necessary to consolidate quinoa's place as the incumbent miracle food. The IYQ entailed numerous venues explicitly intended to kindle partnerships between international NGOs such as Biodiversity International and Slow Food International, development institutions including the World Bank, local development organizations both within and beyond the Andes, national governments, private companies along nascent global quinoa commodity chains, and research institutions, an objective made explicit in the IYQ's goal to "encourage partnerships between public, private and nongovernmental organizations related to the cultivation of quinoa" (FAO 2013e). While other miracle foods had assumed

such a status through gradual processes of sociopolitical web-making, the IYQ provided a major thrust for the consolidation of the alliances necessary for quinoa's insertion into the MFN. These alliances were important not only for the sake of creating a consensus about quinoa's miracle food potential, but also for developing and disseminating this narrative in media materials and public events, and forging the scientific partnerships fundamental to developing quinoa varieties adapted to diverse latitudes and climates and thus enabling quinoa's global propagation.[14]

Convening groups with diverse, and sometimes incompatible, interests, perspectives, and goals, the IYQ was a "collaborative" project in the sense Anna Tsing (2006) articulates collaboration, as a dynamic in which the everpresent frictions in relations between actors are not antithetical, but instead animate connections across difference. Frictions are critical to the development of "globally traveling knowledge," or knowledge about "the globe," which in the case of the IYQ was the creation and broadcasting of the narrative of quinoa as a global-scale curative. While the discourse produced by the IYQ-sponsored events (i.e., that quinoa's global propagation will alleviate global food insecurity while simultaneously ameliorating other development challenges) appears streamlined, conflicts abounded among IYQ participants about what quinoa development should look like.

Nascent tensions and inconsistencies among different visions of "quinoa development" that were visible in quinoa development discourses between the 1960s and early 2000s intensified with the concurrent thrust toward the global expansion of quinoa production and booming export markets, which until recently were supplied exclusively by Andean nations. Those aligned with or invested in the booming export markets in the Andes feared that quinoa's global propagation would flatten skyrocketing prices and deteriorate the competitive advantage from which Andean nations had benefited as the only quinoa suppliers, a fear echoed in interviews with Peruvians whose lives depend on quinoa, from producers to plant breeders. As such, many affiliated with Andean production saw global propagation as incompatible with poverty alleviation in the Andean highlands. Others pointed out contradictions in the goals of poverty reduction in the Andes through quinoa export and malnutrition alleviation at the same scale. While high prices meant previously unavailable incomes for quinoa producers, surging prices also made quinoa too expensive for the urban poor in Andean cities, who were quickly replacing this staple with imported rice and premade wheat noodles. Likewise, some began to question whether the export boom was precluding quinoa's contribution to food security in the Andes. Yet the incompatibilities in the IYQ's lofty rhetoric and tensions among interest groups are cloaked by the allure of the simple, attractive Quinoa MFN, which frames quinoa as a potential *cure* for hunger, biodiversity loss, and climate change, and is disseminated with conviction through speeches, press releases, and media materials.

THE TRADITIONAL MIRACLE FOOD: QUINOA AND THE CHANGING ROLES OF "CULTURE" IN THE MFN

Scientists, the protagonists in previous miracle food tales, are conspicuously absent from the IYQ rhetoric. Instead, it is the "indigenous peoples of the Andes" we have to thank for the incumbent miracle food, a conviction made clear in the opening paragraph of the IYQ Master Plan: "The year 2013 has been declared 'The International Year of Quinoa' (IYQ), in recognition of the indigenous peoples of the Andes, who have *maintained, controlled, protected and preserved* quinoa as a food for present and future generations thanks to their traditional knowledge and living practices which are in harmony with nature and Mother Earth" (FAO 2013c; emphasis mine). The IYQ website and media materials are plastered with photographs of women sporting "traditional" skirts and long braids, evoking a common image of Andean indigeneity, and even the slogan of the IYQ— "A Future Sown Thousands of Years Ago"—references tradition and culture, not scientific progress, as the source of quinoa's curative power. This shift in the role of culture in the MFN, from the barrier to proper nutrition to the miracle food's origin, emerges alongside shifts in the role of culture in development discourse more generally. Not only did quinoa's ascent to miracle food stardom depend upon the rise of discourses of "multicultural development" and TEK, but quinoa's insertion into the MFN affirms that tradition and culture yield critical resources for development.

Although this rhetoric profusely acknowledges the role "traditional peoples" played as "custodians," it stops short of attributing indigenous people agency in quinoa's creation. While scientists are quite explicitly the inventors of GR and 02 corn, Andean agriculturalists are framed as passive "stewards," not authors or creators (FAO 2013b). In the IYQ rhetoric, quinoa is a "natural" product that indigenous people *preserved*. Yet anyone with basic knowledge about agricultural domestication knows that domesticated plants are not naturally occurring or accidentally domesticated but result from the hard work of seed selection and adaptation. In particular, with its extraordinary intraspecific diversity, quinoa's current state is a result of conscious decisions made by cultivators who have selected, exchanged, and experimented with varieties, and continue to do so to this day.

This claim that seeds are "natural" removes the social aspect of agrobiodiversity (Hayden 2003) and is strategic in terms of the debates around intellectual property rights of quinoa germplasm, a controversy in which the IYQ's project to globalize quinoa production is very much involved. After researchers at Colorado State University patented a quinoa variety in the 1990s in the hopes of spurring the development of new varieties, the Bolivian government and largest producer association, ANAPQUI, initiated a backlash and nationalized their quinoa germplasm banks, a shift that was eventually inscribed in Bolivia's 2009 constitution (Dutfield 2000).[15] If the IYQ had thanked the Andean indigenous peoples for *inventing* quinoa rather than merely preserving it "in its natural state," this framing would support the case, being made by Bolivia, that Andean nations should have some sort of ownership of quinoa germplasm. This ownership would in theory guard quinoa from unauthorized use outside the Andes and protect the farmers (and others in the Andes) benefiting from the export boom against competition from other countries, a threat quickly becoming a reality as quinoa prices drop due in large part to increased commercial production outside the Andes.

While the IYQ outwardly celebrates quinoa's "traditional origins," less conspicuous events are taking place in the agronomy and technology communities that contradict any pure un-technified "sharing of an indigenous miracle." The International Quinoa Research Symposium held at Washington State in August 2013 brought agronomists from around the world to participate in breeding trials, express concern over limited access to quinoa germplasm, and discuss intellectual property rights for quinoa seeds. In the opening speech, FAO Technical Coordinator Tania Santivañez stated that "researchers need to be able to breed, plant, and test new and existing varieties of quinoa to identify the best match between seed and environment," alluding to the more complex relationships between scientists and agribusiness and the promotion of quinoa as a miracle food (Nickel-Kailing 2013). In order for breeders to develop new quinoa adapted to regions beyond the Andes, a key objective of the IYQ, quinoa's germplasm must be freely available, argued many at the symposium. The MFN frames quinoa as a potential cure for global hunger (among other things), a potential that can only be tapped through breeding. Thus stymying the innovation of new quinoas, in a similar fashion to opposition to Golden Rice, is framed as akin to supporting malnutrition.

While the rhetoric of gratitude to the Andes indigenous people dominates quinoa's framing as a miracle food, the actual returns these people have received from this project to globalize quinoa have been minimal. Few of the producers I interviewed

FIGURE 2: *Hundreds of quinoa accessions in Peru's largest quinoa germplasm bank.*
PHOTOGRAPH BY EMMA MCDONELL © 2015

in Puno, the hub of quinoa production in Peru, had heard of the IYQ and were disappointed to see little evidence of the project in their own communities. The IYQ did organize "agrobiodiversity fairs" in highland cities where farmers could enter their quinoa into competitions to win ribbons and sometimes trophies. Quinoa buyers also hoped to receive assistance from the project and yet they came to see the IYQ as a mere "*espectaculo*," a spectacle or show that lacked any real interest in helping highland producers, and made jokes about the endless photo-ops of Peru's First Lady and the IYQ "special ambassador," Nadine Heredia, that characterized the IYQ events.

Thus, while the IYQ lavished praise upon the indigenous "custodians," this rhetoric of gratitude obscured that the geographical expansion of quinoa production, in the heroic pursuit of curing global hunger, was effectively undermining Andean producers. Although the IYQ is over, the project to globalize quinoa production that it jump-started continues. As of the start of 2014, quinoa experimentation is taking place

in more than forty countries and commercial production in thirteen, although most intensively in the United States, Canada, France, Holland, Denmark, Italy, India, Kenya, Morocco, and China, not all places suffering from dire hunger (Bazile and Baudron 2013; FAO 2013d). As quinoa production expands into areas with considerably higher agricultural productivity than quinoa's native highlands, where harsh environmental conditions make yields relatively low compared to the lower elevation, warmer regions where quinoa is increasingly cultivated, highland farmers are struggling to compete. The production glut has led farm-gate prices to plummet since 2014 and many highland smallholders are refusing to sell at the low prices. This contradiction between the lauding of indigenous agriculturalists for "preserving" quinoa and the undercutting of this same group of people's ability to economically benefit from quinoa calls forth Hale's (2002) warning about projects celebrating indigenous culture. While Hale focuses on relationships between indigenous groups and the state vis-à-vis "multicultural citizenship," cautioning that these projects serve to delimit the kinds of claims indigenous people can make, this dynamic also applies to the case of quinoa. The "stewarding" of quinoa is celebrated as an exemplary form of indigenous cultural expression that is both benign (does not produce an affront to the state) and profitable; tradition is valuable because it provides (economic) "value." While applauding the indigenous traditions that protected quinoa, the language of stewardship enforces boundaries around the political possibilities of the quinoa stewards, who are expected not to make claims to own or control quinoa's genetic resources, claims that would protect them from the globalization that threatens their ability to benefit from quinoa.

Concluding Remarks: Traditional Miracles and Universal Solutions

The stories of high-lysine corn, Golden Rice, and quinoa serve as cautionary tales about the enduring power of the curative metaphor to depoliticize global hunger, and in the case of quinoa, a number of other development "challenges." To conclude, I draw attention to the complex, fraught interaction between the politics of indigeneity and the politics of global malnutrition that arises with the shifting roles of science and tradition in quinoa's adaptation of the MFN. I then point out the way in which quinoa, as the only miracle food implemented at more than an experimental scale, foregrounds scale disjunctures between simple miracle food stories and complicated realities, a dynamic that underscores the need for agrifood and food policy scholars to pay close attention to complex interactions of scale.

Critical nutrition scholars propose we rethink expertise in nutrition policy, such that boundaries between experts who have authority to give advice (through academic credentials) and those who are targets of this expert advice should be broken down (Kimura 2013: 4).[16] Nutritionism, it is argued, promulgates a techno-managerial gaze on hunger that is disembodied from culture, and going forward, questions of cultural difference and tradition must be at the forefront in nutrition policy (see Kimura 2013; Kimura et al. 2014; Escobar 1995). Quinoa's insertion into the MFN does indeed foreground tradition. The heroes in the quinoa MFN are not scientific experts, but the Andean indigenous people and their ancestors, who protected this miracle food "as a food source for present and future generations" (FAO 2013c). This seems strikingly different from the *02* and GR stories, in which First World scientists apply the blessings of technology to the "inferior" native crops in order to feed the hungry people who, as the story goes, cannot feed themselves.

While culture and traditional knowledge have replaced the scientist as the source of authority and procurer of the curative, the quinoa MFN, ironically, reproduces the dietary colonialism that disregards cultural difference and tradition. Even though the dogma of the scientific authority is subverted in this narrative, the universalist project of replacing the many other, "inferior" crops around the world with quinoa systematically disregards local perspectives and culture, leaving the normative orientation of nutritionism intact (Caldwell 2014). Moreover, the quinoa MFN implies a particular, limited reading of the role of culture in malnutrition alleviation in which "culture" and/or "tradition" are important insofar as they supply resources for tackling malnutrition (i.e., quinoa). While those responsible for the miracle food may be deserving of praise, the quinoa MFN undermines claims to rights to control the use of these resources and the ability of these people to profit from the crop's success. The quinoa MFN shows us that questioning scientific authority in nutritionism is not enough for critical nutrition studies. While the quinoa story switches out the actors, with "tradition" and "traditional peoples" taking the place of science and scientists, the plot and underlying logic remain intact. Even as malnutrition alleviation programs integrate cultural difference, we must pay close attention to the ways tradition and culture are invoked.

Finally, the negative impacts of the expansion of quinoa production outside the Andes on quinoa producers in the Andean highlands highlight the issue of scale in malnutrition alleviation projects, and in particular the contradictions of supposedly "global" solutions. Although expansion of quinoa production beyond the Andes could in the future alleviate malnutrition in some areas, it has come at the expense of the

potential poverty alleviation in the Andean highlands that export markets offered highland quinoa producers. While I have demonstrated that miracle food tales are not innocuous in their reproduction of fantasies of hunger as pathology, the quinoa case shows that implementation of miracle foods is also not harmless as the quest to expand production of miracle foods has complex interactions at different scales. While the universal cure is alluring in its ostensible simplicity, this simplicity obscures complex interactions at different scales.

This article should serve as a cautionary tale about miracle foods, and more broadly the curative metaphor, in discussions about global hunger and other "development" challenges. Tales of hunger panaceas are incredibly powerful and attractive as they seem to offer an antidote to some of the most urgent and pressing issues of our time. And yet the attractiveness of these tales lies precisely in their ability to depoliticize the incredibly political issues. As 30% of people in the "developing" world suffer some sort of diet-related ailment, it is imperative that we stop the futile search for a magical complex carbohydrate and begin facing the ultimate causes of malnutrition: power, inequality, and capital-intensive agriculture that dispossess (WHO 2000).

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NOTES

1. While the term "miracle food" is my own, and used in a rather specific way in this paper's argument, the language of the miracle food or "miracle plant" (see FAO/Biodiversity International 2012) is prevalent in campaigns to promote all three of the miracle foods I discuss.
2. For an excellent in-depth discussion of high-lysine corn, and in particular, Golden Rice, see Kimura (2013).
3. I use "discursive milieu" to highlight the plurality of development discourses, drawing on Grillo and Stirrat's (1997) contention that there exists not one monolithic "development discourse," but a plethora of discourses of development. Not only does the MFN articulate with a number of emergent development discourses, but the MFN itself is one of these discourses.
4. "Fortification" refers to the process of adding micronutrients to foods during the manufacturing process, while "biofortification" refers to altering a crop's biological makeup to increase micronutrient content (Kimura 2013: 2).
5. Macronutrients are nutrients required in large quantities in the human diet (e.g., protein, carbohydrates), and micronutrients are those needed in trace quantities (e.g., iodine, vitamin A).
6. While biofortification is now a common term in nutritional literature, referring to the alteration of a plant's biology to increase a particular nutrient, it was only popularized in the 1980s, and thus while the creation of *o2* does fall into this category, it would not be regarded as such at the time of *o2*'s "invention" (Kimura 2013: 42).
7. For more on the trope of the West as "global savior" of the poor in colonial and postcolonial times, see Warren Belasco (2006) on the link between imagined utopia and dietary colonialism.
8. Quinoa is a pseudocereal rather than a true cereal as it is not a member of the grass family. As a chenopod, quinoa is related to spinach and tumbleweeds.
9. I enclose "biophysical" in quotes to emphasize that quinoa's nutritional content and agronomic characteristics are at once "social" and "natural" as they have been actively, and often consciously, created and maintained by agriculturalists.
10. The *Chenopodium* genus includes quinoa and the closely related *kañiwa*, which is also recognized for exceptional nutritional content and hardiness.
11. Informal quinoa exchange networks were alive and well at the time, and *ferias* were held all over the highlands where quinoa was exchanged for other goods, often directly (Egoávil et al. 1979). The "market development" was not the development of markets *per se* but the formalization of capital-accruing markets. Farmers were deemed "economically unproductive" because their production did not contribute to *national economic indicators*.
12. For more on this aspect of quinoa's history, see Joshua Berson (2014).
13. A clear example of these "radical" expressions of indigeneity in Peru specifically are anti-mining protests that often draw upon indigenous identity in resisting mining concessions, and are commonly repressed through executive orders of "emergency zones" where constitutional rights temporarily do not apply to citizens.
14. As quinoa's physiological development hinges upon day length and latitude, these factors initially inhibited quinoa's production outside the Andes (Jacobsen 2003).
15. For more on this particular conflict, see Lisa Hamilton's (2014) "The Quinoa Quarrel."
16. See the special issue of *Gastronomica* 14(3) for more on critical nutrition studies.

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