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## ›WONDER FOODS‹ TO END WORLD HUNGER?

International Organizations,  
NGOs, and Industrial Actors  
in Global Nutrition, 1940s to 1970s

In July 1968, Peter Reitz from the Colombian Field Office of the humanitarian NGO CARE enthusiastically reported a ›new wonder food‹ named Pochito to the CARE headquarter in New York City: ›Everyone here is excited about this food, as they were about Incaparina a few years ago.‹ Reitz went on to provide specifications and asked CARE headquarters about their opinion on the product.<sup>1</sup> In her equally enthusiastic answer, CARE nutritionist Margot Higgins asked Reitz for more details about Pochito's ingredients, adding cheerily: ›I am getting quite a collection of these new-style foods: Incaparina, AK-1000, MPF, CSM, WSB and now Pochito, plus fish meal, cottonseed meal, vita-soy and other goodies. I should give a party.‹<sup>2</sup>

Higgins' list of ›goodies‹ points to the fact that fortified foods – meaning edibles particularly designed to provide hungry people with both calories and so-called essential nutrients – were very much in vogue in the international nutrition expert community in the 1960s and 1970s.<sup>3</sup> Most fortified foods – in particular Pochito and Incaparina – belonged to a new group of food products considered to be alternative sources of

1 Peter Reitz, CARE Colombia, to CARE New York, 9 July 1968, Box 173, CARE Archives. Manuscript and Archives Division. New York Public Library (NYPL). Astor, Lenox, and Tilden Foundations.

2 Margot Higgins to Peter Reitz, CARE Colombia, 16 July 1968, Box 173, CARE Archives.

3 ›Essential nutrients‹ were defined differently in different contexts, and the process of definition in the international context is a topic of its own (one which remains largely unwritten). On the establishment of (nutritional) standards and the debate about the ›vital minimum‹, see for instance: Joël Glasman, *Humanitarianism and the Quantification of Human Needs. Minimal Humanity*, Abingdon 2020, pp. 122-169. On the medical debate, see for example: Kenneth J. Carpenter, A Short History of Nutritional Science: Part 3 (1912–1944), in: *Journal of Nutrition* 133 (2003), pp. 3023-3032.



protein for the hungry poor. While their scientific development started in the late 1950s, commercial production began around a decade later and required cooperation between governments, scientists, international organizations (IOs), non-governmental organizations (NGOs), and the food industry. By this time a growing circle of nutrition professionals had formed. These nutritionists<sup>4</sup> – often (but not necessarily) people with a degree/education in nutritional science, biology, chemistry, social work or medical school – had successfully turned nutrition and nutritional education into their main line of work by providing science-based solutions (and products) to tackle hunger and food deficiency in local settings around the globe – especially in the so-called developing countries of the global south.

As part of a wider humanitarian (food aid) network,<sup>5</sup> these professionals advocated technical solutions to the so-called ›world food problem‹ – a problem the definition of which had been under constant (discursive) construction since the 1950s.<sup>6</sup> By not only offering specific expert knowledge but also promoting the development and dissemination of ›enhanced‹ or fortified foods, these nutrition professionals added a new layer to global debates about the world food problem. Advocating the development and dissemination of specialized foods to the world's hungry, they contributed to a change in relations between local food consumers, food producers, processing companies, governments, humanitarian NGOs, and IOs. These ›wonder foods‹ experienced a first boom between the 1950s and the 1970s as a result of the scientific discourse identifying the lack of animal proteins as a major cause of malnutrition. This position came under attack in the 1970s, however, and many of the protein-enriched products were no longer produced on a commercial level by the late 1970s. Nevertheless, the debates on ›hidden hunger‹ created a new alliance between science, international organizations and commercial food producers from the 1990s onwards. The previously exclusive focus on protein was supplemented by a range of micronutrients, such as iron, zinc, or vitamins.

In this article, we focus on the initial boom period for fortified foods and argue that this kind of cooperation, and particularly the active role played by private (transnational) for-profit and non-profit enterprises in international food relief, has been overlooked for too long. We also argue that specialized food products, such as Pochito or Incaparina, have a consumer history which still requires further exploration.<sup>7</sup> This article

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4 To the present day, the term ›nutritionist‹ is not subject to statutory professional regulation in many countries and legislations. Thus, it is fairly easy and widespread to claim the title of nutritionist or nutrition expert. However, from what our sources show, the nutritionists we refer to in our text are mostly professional social workers, people with an academic background in nutritional science, (human) biology, chemistry, or even trained medical professionals.

5 Tom Scott-Smith, *On an Empty Stomach. Two Hundred Years of Hunger Relief*, Ithaca 2020; Norbert Götz/Georgina Brewis/Steffen Werther, *Humanitarianism in the Modern World. The Moral Economy of Famine Relief*, Cambridge, UK 2020; Michael N. Barnett, *Empire of Humanity. A History of Humanitarianism*, Ithaca 2011.

6 David B. Grigg, *The World Food Problem, 1950–1980*, Oxford 1985.

7 See on this topic: Uwe Spiekermann, *Künstliche Kost. Ernährung in Deutschland, 1840 bis heute*, Göttingen 2018; Emma McDonnell/Richard Wilk (eds), *Critical Approaches to Superfoods*, London 2020.

therefore aims to contribute to a deeper understanding of the intertwined networks connecting scientists in academia, relief professionals in international organizations and aid agencies, the CEOs of food companies and consumers all over the globe. More research is needed to uncover the mechanisms that triggered both product innovation and long-term shifts in consumption patterns in food deficient countries where these fortified foods were introduced.<sup>8</sup>

In order to shed new light on the introduction, distribution and consumption of fortified foods in the context of international hunger relief activities, this article is divided into four parts: Section one provides a brief research overview of the history and development of nutritional science and its connections to humanitarian discourses and practices. In section two – taking the United States as an example –, we will trace the development of practices in food aid from the 1950s to the late 1960s, and from quantity-based food aid provision to (at least partially) quality-based concepts. We will argue that, during this period, both the concepts and institutional patterns of food aid distribution underwent significant changes, opening up spaces and opportunities for new professionals – such as nutritional experts – as well as for private and corporate actors in the United States. In section three we will then shift our focus from the Western ›donors‹ and experts to local, regional and international organizations in the so-called food-deficient countries. Taking the Institute of Nutrition of Central America and Panama (INCAP) and its signature product of Incaparina as an example, we will highlight both the debates and practices of fortified food production and consumption in Latin America. The conclusion will wrap up these three threads and point towards fields for future research at the intersection of historical nutritional science, humanitarian history, and the history of food production, marketing, and consumption.

## 1. A Short History of Nutritional Science and its Connection to Humanitarian Food Relief

While there is a relatively solid consensus among historians that, as part of the ›humanitarian international‹,<sup>9</sup> the rise of nutritional education and nutritional expertise became particularly visible and increasingly professionalized following the Second World War and especially from the 1960s onwards, neither the actors nor the topics and issues covered were entirely new. Scientific (social medical) research on the effects of poor food intake on individuals and certain social groups such as workers or nursing mothers had started as early as the mid-nineteenth century in Europe and the

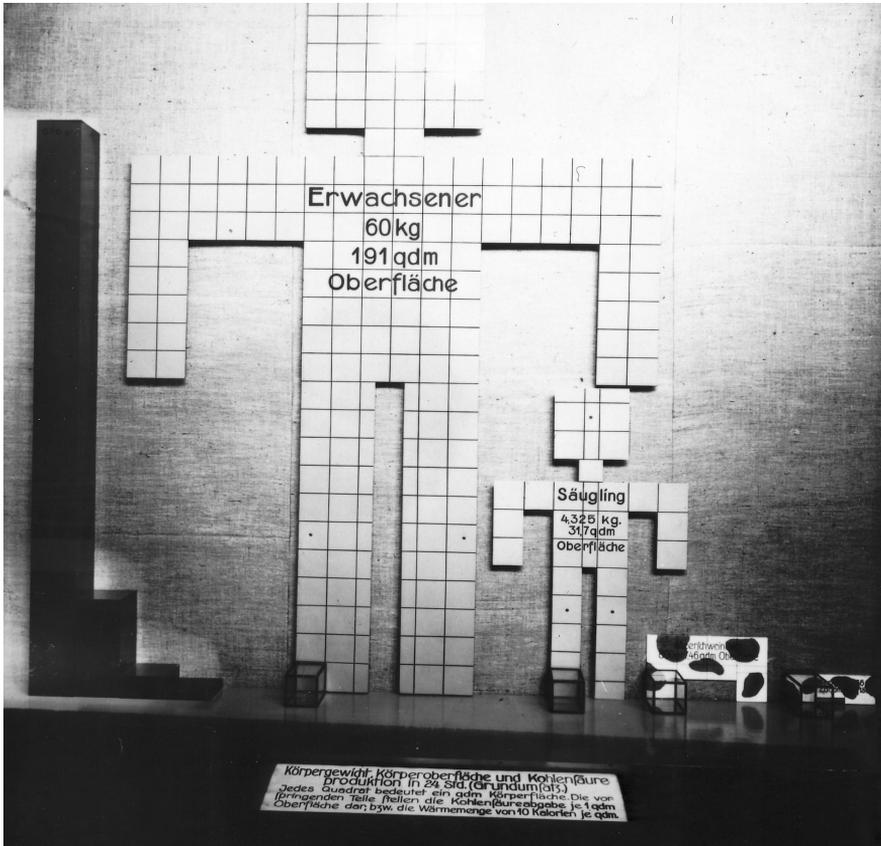
8 Dariush Mozaffarian/Irwin Rosenberg/Ricardo Uauy, History of Modern Nutrition Science – Implications for Current Research, Dietary Guidelines, and Food Policy, in: *The BMJ* (Clinical Research ed.) 361 (2018), k2392.

9 Johannes Paulmann, Conjunctures in the History of International Humanitarian Aid during the Twentieth Century, in: *Humanity. An International Journal of Human Rights, Humanitarianism, and Development* 4 (2013), pp. 215-238.

United States.<sup>10</sup> While moral arguments and paternalistic perspectives informed contemporary debates about poor diets, the invention of the calorie as a scientific category – and hence the measurement of human energy expenditure as part of every person's bodily existence – pushed the issue into the scientific limelight.<sup>11</sup> From the 1890s and throughout the first half of the twentieth century, human physiology – and especially the effects of food deprivation – were studied very thoroughly in experimental settings and long-term studies, often in medical but also in military contexts.<sup>12</sup> The human body and its sustenance became the object of intensive scrutiny. Researchers not only targeted the individual, but also focused on families, social groups and even national collectives and their respective nutritional status.<sup>13</sup> Social medicine and discourses about hygiene and health became increasingly professionalized and were subsequently incorporated into new welfare practices and institutions.<sup>14</sup>

The chemical isolation of vitamins took place as early as the 1920s, and this was swiftly followed by the invention of methods to replicate, and therefore market, vitamin supplements. This innovation allowed for the easy treatment of a variety of common deficiency sicknesses (such as scurvy) and also laid the foundations for an ever expanding health-supplement industry (and its use and regulation by governments).<sup>15</sup> Increasingly, scholars and medical professionals were looking beyond caloric deficits by investigating the lack of certain essential nutrients as an underlying cause of hunger and ›under-nutrition‹. Protein-deficiency in particular was pushed up the agenda in terms of importance and, by the 1940s, the conviction that a lack of animal proteins caused severe malnutrition had become common wisdom among academic experts, relief workers and policy makers.<sup>16</sup>

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- 10 Dieter Koch-Weser, The Historical Development of Social Medicine as a Responsibility of the Physician, in: Susanna Elm/Stefan N. Willich (eds), *Quo Vadis Medical Healing. Past Concepts and New Approaches*, Dordrecht 2009, pp. 101-105.
- 11 Nina Mackert, Making Food Matter: ›Scientific Eating‹ and the Struggle for Healthy Selves, in: Jürgen Martschukat/Bryant Simon (eds), *Food, Power, and Agency*, London 2018, pp. 105-128; James L. Hargrove, History of the Calorie in Nutrition, in: *Journal of Nutrition* 136 (2006), pp. 2957-2961.
- 12 See for instance: Todd Tucker, *The Great Starvation Experiment. Ancel Keys and the Men who Starved for Science*, Minneapolis 2007.
- 13 Alice Weinreb, *Modern Hungers. Food and Power in Twentieth-Century Germany*, New York 2017; see also various articles in John Burnett/Derek Oddy (eds), *The Origins and Development of Food Policies in Europe*, London 1994.
- 14 Sandrine Kott, *Sozialstaat und Gesellschaft. Das deutsche Kaiserreich in Europa. Aus dem Französischen von Marcel Streng*, Göttingen 2014, pp. 165-179; Iris Borowy, Introduction, in: Iris Borowy/Anne Hardy (eds), *Of Medicine and Men. Biographies and Ideas in European Social Medicine Between the World Wars*, Frankfurt a.M. 2014, pp. 7-21; Andrew T. Price-Smith, *The Health of Nations. Infectious Disease, Environmental Change, and Their Effects on National Security and Development*, Cambridge, Mass. 2002.
- 15 See Heiko Stoff, *Wirkstoffe. Eine Wissenschaftsgeschichte der Hormone, Vitamine und Enzyme, 1920–1970*, Stuttgart 2012; John P. Swann, The History of Efforts to Regulate Dietary Supplements in the USA, in: *Drug Testing and Analysis* 8 (2016), pp. 271-282.
- 16 See for instance: Birgit Pelzer-Reith/Reinhold Reith, Fischkonsum und »Eiweißlücke« im Nationalsozialismus, in: *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 96 (2009), pp. 4-26; Mozzafarin/Rosenberg/Uauy, History of Modern Nutrition Science (fn 8).



In the 1926 Great Exhibition for Public Health, Social Welfare and Physical Exercise (*Große Ausstellung Gesundheitspflege, soziale Fürsorge und Leibesübungen*, GeSoLei) in Düsseldorf, the largest German trade fair of the Weimar Republic, the physiology of nutrition and metabolism was one of many topics on display. Shown here are the body weight, body surface area and energy metabolism of an adult, an infant and various animals.  
(Deutsches Hygiene-Museum/German Hygiene Museum; photographer unknown)

The connection between nutritional science, food provision and war has been studied intensively. Recent publications on food provision and hunger during the First and Second World War (including exploitation practices in occupied territories<sup>17</sup>) have

17 Tatjana Tönsmeier, Supply Situations. National Socialist Policies of Exploitation and Economies of Shortage in Occupied Societies During World War II, in: Tatjana Tönsmeier/Peter Haslinger/Agnes Laba (eds), *Coping with Hunger and Shortage Under German Occupation in World War II*, Basingstoke 2019, pp. 3-26; Christian Gerlach, *Krieg, Ernährung, Völkermord. Forschungen zur deutschen Vernichtungspolitik im Zweiten Weltkrieg*, Hamburg 1998.

shed light on both private and public efforts to uphold food provision and citizen/combatant health across numerous nations.<sup>18</sup> The years after the Second World War in particular were marked by enormous national,<sup>19</sup> but also international relief efforts: The victorious governments (especially the US administration) as well as countless private humanitarian relief agencies delivered enormous amounts of food and everyday goods to Europe and other regions affected by food shortage and social calamity.<sup>20</sup>

While the European food crisis after the Second World War was eventually tackled by international food relief and enormous institutional efforts to re-start agricultural production and local economies, hunger and specifically malnutrition remained a global concern – now with an increasingly systemic twist: International debates about the ›world food problem‹,<sup>21</sup> referring to overproduction in industrialized societies and underconsumption and/or malnutrition in so-called developing countries, gained momentum. The distorted relationship between producers and consumers arising from global economic inequality, poverty, and ›underdevelopment‹ in many parts of the world began to provide a viable framework for the interpretation of the persistence of hunger in the modern world. Attempts to tackle hunger increasingly became embedded in a multi-layered approach: While development aid – ultimately meant to help ›underdeveloped‹ nations to become modern and economically mature market economies – emerged as a sort of systemic answer to the task of ending hunger, food aid, as a proven short-term remedy, also gained in importance on a global scale.<sup>22</sup> Given that overproduction in the United States and a few other countries grew steadily from the mid-1950s onwards, food aid provision from surplus stocks became a convenient model. Embedded in development discourses, humanitarian considerations and pushed by relief professionals who saw a chance to put their professional expertise gained in Europe to good use in Asia, Latin-America and Africa, international food relief grew continuously.<sup>23</sup>

This process was thoroughly discussed, facilitated and supervised by relief professionals within government bodies, NGOs, and IOs around the world. For those working in the field, tackling hunger was both an ethical task and a ›job‹. Furthermore, just

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18 See for instance: Hartmut Berghoff/Jan Logemann/Felix Römer (eds), *The Consumer on the Home Front. Second World War Civilian Consumption in Comparative Perspective*, Oxford 2017; Lizzie Collingham, *The Taste of War. World War Two and the Battle for Food*, London 2011.

19 For the US, see for instance: Janet Poppendieck, *Breadlines Knee-deep in Wheat. Food Assistance in the Great Depression*, Oakland 2014.

20 Julia Irwin, *Making the World Safe. The American Red Cross and a Nation's Humanitarian Awakening*, Oxford 2013; Tammy M. Proctor, An American Enterprise? British Participation in US Food Relief Programmes (1914–1923), in: *First World War Studies* 5 (2014), pp. 29–42; for WW2, see for instance: Rachel M. McCleary, *Global Compassion. Private Voluntary Organizations and U.S. Foreign Policy since 1939*, Oxford 2009.

21 Grigg, *World Food Problem* (fn 6).

22 Emily S. Rosenberg, *Spreading the American Dream. American Economic and Cultural Expansion, 1890–1945*, New York 1993.

23 Heike Wieters, *The NGO CARE and Food Aid from America, 1945–80. ›Showered with Kindness?‹*, Manchester 2017.



Members of the *Hilfswerk der Evangelischen Kirche* and *Innere Mission* receive CARE packages from US donations and distribute them to recipients in the Federal Republic of Germany (1952). (Bundesarchiv/Federal Archives, Bild/Picture 194-0913-35, photo: Hans Lachmann)

as in every professional environment, the ends and means, techniques and institutional settings were heavily debated, as were the amount and quality of the goods provided. Food aid was a controversial field in which institutional dynamics and economic logic often clashed with moral convictions and the professional opinions of relief workers in the widest sense.

## 2. The US Case: from Quantity- to Quality-based Food Aid?

The following section traces these discussions and developments, taking the United States – particularly US-based humanitarian NGOs and their efforts to combat world hunger through the provision of food aid – as an example. The focus is therefore placed on Western donors and US members of international relief organizations and on their opinions on proposed solutions to endemic malnutrition in the so-called developing countries.

By now, a wide variety of studies have demonstrated that food aid has a long tradition as a tool used by the US government to aid communities in need.<sup>24</sup> Food deliveries to regions experiencing poor harvests, floods or droughts have been sent by the government and civic (often religious) groups in a variety of contexts, both on US soil and abroad.<sup>25</sup> Early examples are somewhat random in nature, however, and never really made it into food diplomacy in an institutionalized sense. It was only in the twentieth century, in the context of the two world wars and their aftermaths, that new and more permanent institutions and actors emerged.<sup>26</sup> These actors turned food aid provision into a regular tool of humanitarian diplomacy and helped establish an institutional field, bound by joint bureaucratic procedures, shared goals and practices,<sup>27</sup> in which humanitarian motives, international diplomacy, economic imperatives and scientific discourse merged.<sup>28</sup>

This institutional field has repeatedly been characterized as twentieth-century food aid regime, a term popularized by Harriet Friedmann among others.<sup>29</sup> The term ›regime‹ serves to highlight the network character of food aid provision and also underscores that, from the 1950s onwards, food aid was no longer only doled out on an ad hoc emergency basis, but was increasingly distributed in stable and long-lasting schemes by increasingly professional actors. In addition to emphasizing the network aspect mentioned above, the term ›regime‹ is also open enough to include more than government bodies.<sup>30</sup> While food aid provided by the US government (based on bilateral agreements) represented – for the longest time – the biggest share of overall American food aid, it is important to highlight the fact that food relief abroad was also carried out to a large extent by IOs and private (often transnational) civil society organizations.<sup>31</sup> Many of these private voluntary relief organizations (such as the American Friends Service Committee [AFSC] and Save the Children) had been established in the context of the First World War, others (among them the American NGO CARE, Catholic Relief Services or Lutheran World Relief) were newly established during World War Two and

24 Cormac Ó Gráda, *Famine. A Short History*, Princeton 2010; Robert William Fogel, *The Escape from Hunger and Premature Death, 1700–2100. Europe, America, and the Third World*, Cambridge, UK 2004, chapter 1.

25 Amanda Porterfield, Protestant Missionaries. Pioneers of American Philanthropy, in: Lawrence Jacob Friedman/Mark Douglas McGarvie (eds), *Charity, Philanthropy, and Civility in American History*, Cambridge, UK 2004, pp. 49–69.

26 William A. Dando, *Food and Famine in the 21st Century*, Santa Barbara 2012; Raymond F. Hopkins, The Evolution of Food Aid: Towards a Development-First Regime, in: *Food Policy* 9 (1984), pp. 345–362.

27 Paul J. DiMaggio/Walter W. Powell, The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields, in: *American Sociological Review* 48 (1983), pp. 147–160.

28 Nick Cullather, The Foreign Policy of the Calorie, in: *American Historical Review* 112 (2007), pp. 337–364.

29 Harriet Friedmann, The Political Economy of Food: The Rise and Fall of the Postwar International Food Order, in: *American Journal of Sociology* 88 (1982), pp. S248–S286.

30 Raymond F. Hopkins, Reform in the International Food Aid Regime: The Role of Consensual Knowledge, in: *International Organization* 46 (1992), pp. 225–264, here p. 227.

31 Rachel M. McCleary, *Global Compassion. Private Voluntary Organizations and U.S. Foreign Policy since 1939*, Oxford 2009.

developed into increasingly professional actors in food aid distribution over the following decades.<sup>32</sup> Finally, the term food aid regime hints at changing international agricultural market structures and points to the fact that the availability of unsellable food staples (American agricultural abundance) and the provision of food aid to foreign countries were intimately connected.

This relationship between agricultural overproduction in the US and food aid provision abroad had not originally been intended by policy makers. However, protectionist agricultural policies during World War Two (meant to stimulate agricultural production and guarantee farmers fixed prices for certain agricultural goods), turned out to be more difficult to end than they had been to install.<sup>33</sup> US farmers and their lobbies strongly objected to the end of government price guarantees for their produce, leading to certain food staples piling up in government warehouses. While high agricultural production levels and surplus stocks in the US had helped to take the edge off the European post-war food crisis, these surpluses became a costly and unsellable burden after the European recovery. Not only did potential buyers in structurally food deficient countries lack dollar currency to pay for US staples, furthermore some of these goods (such as cheese for instance) were not actually in high demand abroad.<sup>34</sup> It was against this backdrop that the idea of giving part of this agricultural abundance away for free for food relief purposes gained in appeal in the US.<sup>35</sup> Vigorously pushed by humanitarian actors (with the NGO CARE at the forefront<sup>36</sup>), and advocated by farmers and influential senators and congressmen in the media, food aid taken from unsellable US-agricultural abundance became an important foreign policy tool. From the early 1950s onwards (and made official with Public Law 480 passed in 1954), a large number of food aid agreements were set up between the US government and recipient governments in the so-called developing countries.<sup>37</sup>

32 Daniel Maul, »Silent army of representatives«: Amerikanische NGOs und die Entstehung internationaler Mechanismen humanitärer Hilfe 1917–1939, in: Sönke Kunkel/Christoph Meyer (eds), *Aufbruch ins postkoloniale Zeitalter. Globalisierung und die außereuropäische Welt in den 1920er und 1930er Jahren*, Frankfurt a.M. 2012, pp. 105–122; Farah Mendlesohn, *Quaker Relief Work in the Spanish Civil War*, Lewiston 2002; Rachel M. McCleary, *Global Compassion. Private Voluntary Organizations and U.S. Foreign Policy since 1939*, Oxford 2009.

33 Virgil W. Dean, *An Opportunity Lost. The Truman Administration and the Farm Policy Debate*, Columbia 2006, pp. 13–18.

34 Giovanni Federico, *Feeding the World. An Economic History of Agriculture, 1800–2000*, Princeton 2005, pp. 196–205.

35 Beth Osborne Daponte/Shannon Bade, How the Private Food Assistance Network Evolved: Interactions between Public and Private Responses to Hunger, in: *Nonprofit and Voluntary Sector Quarterly* 35 (2006), pp. 668–690.

36 Heike Wieters, Of Heartfelt Charity and Billion Dollar Enterprise: From Postwar Relief to Europe to Humanitarian Relief to »Everywhere« – CARE, Inc., in Search of a New Mission, in: Marc Frey/Sönke Kunkel/Corinna R. Unger (eds), *International Organizations and Development, 1945–1990*, Basingstoke 2014, pp. 220–239.

37 Christopher B. Barrett/Daniel G. Maxwell, *Food Aid After Fifty Years. Recasting its Role*, London 2005, pp. 13–16; see also: Mitchel B. Wallerstein, *Food for War – Food for Peace. United States Food Aid in a Global Context*, Cambridge, Mass. 1980.

These early food aid agreements were based on two central pillars: First, there was a strong focus on the quantity of food stuffs being delivered from one region of the globe to another. Second, these food aid agreements were strongly donor-oriented, meaning that the idea of relieving US markets (and government warehouses) of expensive agricultural surplus was often as least as important as the impetus of helping populations in need of food in food deficient areas.<sup>38</sup>

In order to assess the further development of this post war food aid regime it is vital, however, to consider all actors' interests and perspectives – including those of food producers, food processing companies and, of course, recipients of food aid. PL 480, in its original shape, was as much a surplus disposal program driven by domestic economical imperatives and upheld by US farmers' interests<sup>39</sup> as it was an aid program driven by diplomatic and humanitarian considerations – the latter of which were certainly pushed to the fore by private voluntary relief agencies which obtained large quantities of these US surpluses and distributed them to needy people abroad. Furthermore, recipient governments (not all of them actually structurally food deficient countries) also had their own motives for accepting food shipments licensed under PL 480. In fact, many governments – among them the Egyptian government under President Nasser – used free US wheat or corn shipments to bolster their import substitution strategies.<sup>40</sup> Other governments were interested in barter agreements and exchanged local produce for US food staples.<sup>41</sup> Finally, the provision of emergency food also played a growing role: Most recipient governments set up large scale cooperative ventures with US NGOs to have US food surplus distributed among the most vulnerable parts of society, mostly to nursing mothers and children (see *Claudia Prinz* in this issue) and sometimes in so-called 'food-for-work' schemes.<sup>42</sup>

38 A comparatively large number of authors in the 1980s and 1990s have accordingly characterized Public Law 480 as a large-scale surplus dumping program – thereby underlining economic motives and stripping early food aid programs of their humanitarian underpinnings, see for instance: Wallerstein, *Food for War* (fn 37); John Cathie, *The Political Economy of Food Aid*, Farnborough 1982; Robert M. Stern, Agricultural Surplus Disposal and U.S. Economic Policies, in: *World Politics* 12 (1960), pp. 422-433.

39 In addition, PL 480 has often been strongly tied to US foreign policy objectives in the Cold War era as well as to the government's inability to cut subsidies to US farmers, see: Trudy Huskamp Peterson, *Agricultural Exports, Farm Income, and the Eisenhower Administration*, Lincoln 1979; Nadine Lehrer, *U.S. Farm Bills and Policy Reforms. Ideological Conflicts Over World Trade, Renewable Energy, and Sustainable Agriculture*, Amherst 2010, pp. 62-65.

40 William J. Burns, *Economic Aid and American Policy toward Egypt, 1955–1981*, Albany 1985; Marvin G. Weinbaum, *Egypt and the Politics of US Economic Aid*, Boulder 1986; Timothy Mitchell, *Rule of Experts. Egypt, Techno-Politics, Modernity*, Berkeley 2002.

41 Barrett/Maxwell, *Food Aid after Fifty Years* (fn 37), pp. 13-16.

42 On large-scale feeding programs for mothers and school children, see for instance: Heike Wieters, Krisen, Kompromisse, Kalter Krieg. Die amerikanische NGO CARE und die Anfänge humanitärer Nahrungsmittelhilfe in Ägypten, 1954–1958, in: *WerkstattGeschichte* 68 (2015), pp. 45-63; for the contemporary debate on the ethical foundations of food for work projects, see: Jamey Essex, The Work of Hunger: Security, Development, and Food-for-Work in Post-crisis Jakarta, in: *Studies in Social Justice* 3 (2009), pp. 99-116.

While these projects were initially popular with all the parties involved (the US government, the recipient governments and the NGO intermediaries facilitating these programs), it was precisely in the context of these privately administered feeding programs that US NGOs such as CARE came to notice that US surplus foods did not always meet the dietary needs (let alone tastes) of individual recipients overseas: Milk powder and cheese could spoil in hot and damp climates, causing potentially dangerous intestinal problems or even food poisoning.<sup>43</sup> Wheat was not customary in every corner of the globe, and the same was true of cheese, butter or staples containing pork or other animal products. In addition, relief professionals inside the NGOs themselves grew more and more weary of programs that merely dumped calories on needy people. Towards the end of the 1950s and into the 1960s US relief workers began to articulate the feeling that mere ›charity‹ was actually an ›embarrassing‹ concept<sup>44</sup> and that future programs would have to target their clients' own initiative and fit local customs better in order to avoid misunderstandings and the rejection of food aid by local recipients.<sup>45</sup> Within CARE, for instance, most relief professionals urged the New York management to set up more projects that would help people ›to help themselves‹.<sup>46</sup> This idea was not new, though, and had already been prominently pronounced by Harry S. Truman several years earlier in his 1949 inaugural address.<sup>47</sup> The historian Hubertus Büschel has even argued that the concept of promoting ›self-help‹ shows clear-cut colonial roots.<sup>48</sup> Despite this, the concept clearly prospered among US-relief workers in the 1950s and 1960s – meaning that the voices calling existing food aid routines into question and urging more participation of recipients were becoming increasingly loud.<sup>49</sup> With the establishment of a nutrition department in CARE, this debate eventually gained in urgency: Malnourishment and ›specific hunger‹ in the developing countries was increasingly recognized as a central dimension of the ›world food problem‹ in both the scientific and public domains.

43 CARE, Box 130, Fred Devine (CARE) to Martin Garber (Food Distribution Division, USDA, Agricultural marketing service), 13 August 1957, regarding large amounts of spoiled cheese. In 1962 several Indian School children died from spoiled CARE milk, allegedly because the bowls in which the milk powder had been compounded were dirty. Box 1171, MBDM, 24 January 1962.

44 NYPL, CARE (MssColl 470), Box 7, CARE position paper on self-help (Preliminary Staff Report), undated [1955/56].

45 NYPL, CARE (MssColl 470), Box 130, letter Alexander Sakalis (Chief of Mission CARE Egypt) to George Taylor, 21 January 1957. Both local authorities and recipients were much more interested in other commodities like wheat and butter. In addition, milk powder was not habitual and most recipients did not use it for their everyday cooking.

46 See fn 44.

47 Harry S. Truman, Inaugural Address, 20 January 1949. Online by Gerhard Peters and John T. Woolley, The American Presidency Project, URL: <<https://www.presidency.ucsb.edu/node/229929>>.

48 See Hubertus Büschel, Eine Brücke am Mount Meru. Zur Globalgeschichte von Hilfe zur Selbsthilfe und Gewalt in Tanganjika, in: Hubertus Büschel/Daniel Speich (eds), *Entwicklungswelten. Globalgeschichte der Entwicklungszusammenarbeit*, Frankfurt a.M. 2009, pp. 176-206.

49 NYPL, CARE (MssColl 470), Box 1171, minutes of board of directors meeting, 25 July 1956.

Given the immensity of the problem, international cooperation and global recipes for hunger prevention were on the rise – with nutrition being one ›central component of this ›new international‹ view of the global.›<sup>50</sup> The global ›spread‹ of the calorie as a treatment for the alleged food gap – set in motion by Wilbur Olin Atwater's study on calorific values of foods more than half a century earlier<sup>51</sup> – was increasingly challenged or at least complemented by the assumption that a lack of proteins in particular was compromising hungry people's health and that specialized food supplements could provide solutions in the long run.<sup>52</sup> Tom Scott-Smith has recently suggested that international nutrition between the 1950s and 1975 should be understood as an expression of ›high modernist‹ ideals. The actors believed in science as a mighty tool for creating improved diets. By changing the general composition of foods – i.e. through the addition of artificial vitamins, proteins, or other ›micronutrients‹ – actors believed they might eventually possess the key to effectively combatting hunger worldwide.<sup>53</sup> In a CARE memo on Programming Goals and Strategy from the 1960s, the NGO's executives presented nutrition as ›one of the main generative links in an interlocking series of vicious circles that influence economic productivity, educational opportunity, and health and population growth in the underdeveloped countries.›<sup>54</sup> As the introductory anecdote highlights, CARE soon started ›collecting‹ and providing special products such as high-protein baby formula, powdered wheat-soy blend (WSB) and protein biscuits – a trend later mildly ridiculed by one of its own nutritionists as ›the 60's protein obsession.›<sup>55</sup> These later comments notwithstanding, the question of how to provide hungry people, and children in particular, with healthy food that could potentially compensate for their nutritional deficits became more and more important throughout the 1960s. CARE's responsiveness to new (and, from a contemporary perspective, innovative) approaches, such as the inclusion of nutritional aspects into food aid programming, highlights the fact that humanitarian relief agencies – in line with international trends – were actively trying to transform food aid into a central development resource.<sup>56</sup>

In order to do so, CARE and a couple of other US NGOs teamed up with both government actors and private businesses to search for innovative solutions. In 1963, for instance, a number of US NGOs – CARE included – implemented a pilot study

50 Alexander Nützenadel/Frank Trentmann, Mapping Food and Globalization, in: Nützenadel/Trentmann (eds), *Food and Globalization. Consumption, Markets and Politics in the Modern World*, Oxford 2008, pp. 1-18, here p. 11.

51 Cf. Cullather, *The Foreign Policy of the Calorie* (fn 28), pp. 342-343.

52 Kenneth J. Carpenter, The History of Enthusiasm for Protein, in: *Journal of Nutrition* 116 (1986), pp. 1364-1370.

53 Scott-Smith, *Empty Stomach* (fn 5), pp. 121-124.

54 CARE, Box 98, Overview of CARE Programming Goals and Strategy, undated [late 1960s?].

55 CARE, Box 176, Mary Ann Anderson (CARE nutritionist) to Jacques Lauriac and Irma Lashley (CARE mission Sri Lanka), 18 June 1974; see also: Carpenter, *The History of Enthusiasm for Protein* (fn 52).

56 OECD, *Food Aid. Its Role in Economic Development*, Paris 1960; Hartmut Schneider, *Food Aid for Development. Report on the OECD Development Centre Expert Meeting on Scope and Conditions for Improved Use of Food Aid for Development* held in Paris on 30th – 31st March 1978, Paris & Washington, D.C. 1978.

with soy grits that were fed to children in Bolivia, Colombia, Turkey, the Philippines, and Burundi on an experimental basis. While the study was financed by the US Department of Agriculture and the soy grits were delivered by US farmers, it was the NGOs' job to integrate these supplements into their regular food appropriation schemes. The NGOs demonstrated their openness to innovation (and topped up their feeding program with additional supplies), but also consciously helped to evaluate ›commercial prospects for this product as a source of protein in protein deficit areas‹.<sup>57</sup> Projects such as this highlight the fact that the American voluntary agencies were at the forefront of uniting food aid and development issues without forgetting the interests of US agriculture and industry. This institutional nexus – largely neglected in scholarly literature until recently<sup>58</sup> – bore remarkable fruit for CARE during the 1960s. If, in the 1950s, US NGOs had had great difficulties in pushing the US Department of Agriculture to provide more acceptable foods to feeding schemes, a decade later there was a clear increase in projects including new and protein-rich foods.

In many instances, the US Department of Agriculture worked as an intermediary between voluntary agencies and industrial actors, including large US grain producers, processing companies and even retail companies. CARE, however, was keen to maintain its own relationships with agricultural producers as well as with the large food companies. Throughout the US food sector, the ›competitive struggle for market control between producers and retailers‹ was increasingly being won by the latter, as the industrialization of agriculture and global consumption of processed foods gained ground.<sup>59</sup> Accordingly, CARE executives sought to strengthen their relations to food processing firms and to keep a close eye on opportunities for cooperation. In 1967, CARE sent a high-level representative to the first International Agribusiness Conference in Chicago, attended by top-level agricultural and business leaders such as Orville Freeman, George McGovern and Hubert Humphrey among others. After the meeting, CARE deputy director Fred Devine reported a great openness on the side of the business community to ›consider the benefits of working with the [voluntary agencies] abroad, not only because of [their] managerial skills, but also their capacity in the area of testing new commodities and providing new markets‹. In any event, Devine came home to New York with a deal with Fisher Flouring Mills – enrolling CARE in the testing of a new baby food based on bulgur wheat, provided that Fisher saw to the economic and technical ›feasibility‹ of the program as well as the ›palatability‹ of the product.<sup>60</sup>

57 CARE, Box 94, prospect of pilot study on the value of supplementing children's diet with protein from soy grits, USDA, 5 April 1963.

58 Aya Hirata Kimura, *Hidden Hunger. Gender and the Politics of Smarter Foods*, Ithaca 2013; Marion Nestle/ Michael Pollan, *Food Politics. How the Food Industry Influences Nutrition and Health*, Berkeley 2013.

59 Victoria de Grazia, Globalizing Commercial Revolutions, in: Gunilla Budde/Sebastian Conrad/Oliver Janz (eds), *Transnationale Geschichte. Themen, Tendenzen und Theorien*, Göttingen 2006, pp. 238-253, here p. 243; see also William Winders, *The Politics of Food Supply. U.S. Agricultural Policy in the World Economy*, New Haven 2009.

60 NYPL, CARE (MssColl 470), Box 1172, minutes of executive committee meeting, 24 May 1967.

While these projects admittedly remained minor additions to CARE's overall administration of large-scale food aid programs geared at feeding considerable numbers of children via school feeding or adults in ›food-for-work‹ schemes, the question of food quality remained an issue: In the late 1960s, CARE executive director Frank Goffio accepted an invitation to a Monsanto plant in St. Louis where ›low-cost high-protein foods‹ were being developed. At that meeting, CARE provided the corporate giant ›with specifications and samples of the biscuits used in CARE's feeding programs in Hong Kong and Guatemala to determine whether satisfactory comparable biscuits can be made with a soy flour concentrate they have developed and plan to produce in a plant in Hong Kong.‹<sup>61</sup> CARE, as well as a considerable number of other US NGOs, were very keen to enhance their offer of ›functional foods‹ – products that could be used to contribute to the science-based eradication of hunger and malnourishment in the developing world.<sup>62</sup>

### 3. Cooperation between Science and Business: Proteins and Food Fortification in Central America

While US NGOs were busy setting up partnerships with US food companies in order to enrich their food aid programs abroad, local and international actors in the so-called developing (or food deficient) countries were busy doing the same. Taking Guatemala as a starting point, the production of fortified foods is closely linked to the Institute of Nutrition of Central America and Panama, or INCAP. Founded as early as 1949, in the context of the first Guatemalan reform government of President Juan José Arévalo (1945–51), INCAP promoted local solutions for regional nutrition problems. At the same time, the institute cooperated closely with US foundations and scientists, as well as with IOs such as FAO, WHO and UNICEF. Throughout the second half of the twentieth century, the institute became an interesting site of knowledge exchange in nutrition. Beginning in the 1940s, INCAP's leading scientists propagated a nutrition based on local resources, which soon led to conflicts with the institute's donors and partners over food aid distribution.<sup>63</sup>

61 NYPL, CARE (MssColl 470), Box 1172, minutes of executive committee meeting, 29 March 1967.

62 John Young, A Perspective on Functional Foods, in: *Food Science and Technology Today* 10 (1996), pp. 18-21; Brian Wansink, *Marketing Nutrition. Soy, Functional Foods, Biotechnology, and Obesity*, Urbana 2005.

63 Corinne A. Pernet, Between Entanglements and Dependencies: Food, Nutrition, and National Development at the Central American Institute of Nutrition (INCAP), in: Frey/Kunkel/Unger, *International Organizations and Development* (fn 36), pp. 101-125; Christiane Berth/Corinne A. Pernet, Wissenstransfer, Experten und ihre Handlungsspielräume am Instituto de Nutrición de Centro América y Panamá (INCAP), 1961–1982, in: *Geschichte und Gesellschaft* 41 (2015), pp. 613-648.



The Institute of Nutrition of Central America and Panama (INCAP), with its main offices in Guatemala City, has been engaged since 1949 in studying human nutrition and finding solutions to the problems of malnutrition. INCAP's field staff carried out numerous surveys, which included staying with a family for seven days and recording the food purchases made by the housewife, observing the preparation and consumption of food, and recording the intake of each member of the family. Here, a Guatemalan indigenous woman (right) purchases plums from a vendor in a marketplace. Accompanying her is a member of INCAP's nursing staff, who records the purchases. The photographic documentation became part of INCAP's efforts in research, education, and global communication. (United Nations Photo 7447495, photographer unknown, 1955)

In this context, a group of INCAP researchers around Ricardo Bressani developed a protein-rich food supplement based on cottonseed flour. Bressani was a Guatemalan biochemist who led INCAP's agricultural and food science department from 1956 onwards. The team tested seven formulas before making clinical evaluations and preparing for commercial distribution. Finally, the scientists chose formula 9A, since the availability of some basic ingredients had changed in the meantime. Compared to

formula 8, the 9A mixture contained ingredients facilitating large scale production. It was based on 38 percent cottonseed flour and 29 percent corn flour. In addition, the product also contained vitamin A.<sup>64</sup> The historian Tom Scott-Smith has therefore characterized Incaparina as one of the first examples of fortified blended foods. These new products combined several nutrients instead of focusing exclusively on protein.<sup>65</sup> Incaparina differed from other commercial products, however, since it was adapted to local consumer habits. The mixture was to be distributed in the form of *atole*, a hot beverage, based on corn. Researchers hoped that this would improve its acceptability in Central America.

INCAP researchers named their invention Incaparina, which is a combination of INCAP and *harina*, the Spanish word for flour. Soon, INCAP decided to cooperate with the local food industry for its commercial production. Before doing so, the institute carried out field trials and cost surveys in Guatemala. As a result, INCAP established rules in 1960 which all Incaparina producers had to adhere to: First, they had to request authorization with local health authorities and INCAP. These authorizations also included arrangements on sales prices. The firms had to present estimates on cost and the volume of production as well as a request for price authorization for two different price groups – for retail sales and a reduced price for distribution in welfare and relief actions. INCAP argued that firms should be able to make a ›reasonable profit‹ but that Incaparina should remain affordable for low-income groups. This ambitious aim led to regular discussions among scientists, firm representatives, and health ministries. Second, firms had to agree on INCAP's quality standards and accept regular controls. They sent in samples which were analyzed by INCAP in its laboratories. Third, INCAP obliged firms to submit all advertising and packaging materials in order to ensure that the information provided was adequate for local consumers.<sup>66</sup> Therefore, the institute sought to retain ›epistemic authority‹ over the product.<sup>67</sup> In order to do so, it registered Incaparina as a trademark. From the beginning, the institute perceived the formula as a model for similar foods in other regions. For this reason, it never filed a patent, which would have limited the formula's use for comparable foods.<sup>68</sup>

Incaparina drew great interest in the international nutrition community. Between 1958 and 1968, INCAP received correspondence from more than 1,000 individuals and visits from 171 persons from 18 countries outside of Central America interested in

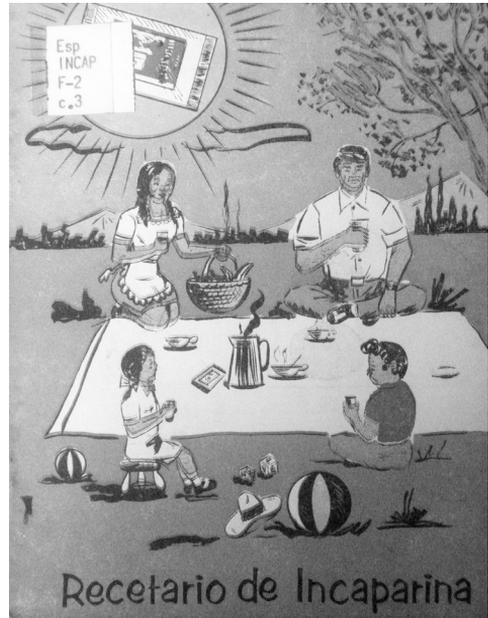
64 Moisés Béhar, The Story of Incaparina. Utilization of Available Sources of Vegetable Protein for Human Feeding, in: *Journal of the American Medical Women's Association* 18 (1963), pp. 384-388; Nevin S. Scrimshaw, Food and Nutrition Policy: A Look at the Incaparina Experience in Guatemala, in: *Food and Nutrition Bulletin* 2 (1980) issue 2, pp. 1-2.

65 Scott-Smith, *Empty Stomach* (fn 5), pp. 131-132. See also the interview in this issue.

66 Richard L. Shaw, Incaparina: A Low Cost Vegetable Mixture and its Commercial Application, in: *Plant Foods for Human Nutrition* 1 (1969), pp. 99-107, here pp. 102-104; INCAP, Informe sobre el desarrollo y utilización de Incaparina, 2 February 1961.

67 C.[ristina] Sathyamala, Nutritionalizing Food: A Framework for Capital Accumulation, in: *Development and Change* 47 (2016), pp. 818-839.

68 Scrimshaw, Incaparina (fn 64).



Title page of a recipe brochure promoting Incaparina, probably 1960s (INCAP library)

producing a similar mixture. In 1961, INCAP created a new position for promoting Incaparina’s commercial distribution, that of the Economic-Industrial Advisor, who was to coordinate external visits and negotiations. By 1968, the advisor Richard Shaw had travelled to Colombia, Peru, Mexico, Venezuela, the West Indies and the US to provide advice on Incaparina production.<sup>69</sup> In addition, the Institute published an English booklet to promote Incaparina on a global scale. Little is known so far on advertising efforts in differing countries. Evidence from Guatemala suggests that the companies chose two main approaches: distribution activities within the communities with mobile promotion units and sound, radio advertisements, and written advertising materials, such as posters, leaflets, or newspaper ads. Overall, the materials promoted Incaparina as a foodstuff providing health and energy. Visuals frequently included children with strong muscles in order to illustrate the product’s effect on physical strength. Other adverts highlighted Incaparina’s positive contribution to learning capacities, implying the promise of future prosperity through children’s success at school. Third, leaflets promoted Incaparina as a cheap and healthy alternative to eggs, meat, and milk. Clearly, some promotional activities also addressed an urban middle-class audience, as shown in elegant distribution stands in the city or

69 Pan American Health Organization (PAHO) Directing Council, XVIII Meeting, Buenos Aires, Argentina. Objectives, functions, and financing of the Institute of Nutrition of Central America and Panama. CD 18/20, Provisional Agenda Item 22, 1968, p. 10.

photos of white children dressed neatly in t-shirts, white socks, and shoes.<sup>70</sup> In INCAP's institutional memory, Incaparina is one of the major success stories,<sup>71</sup> and the institute's 70th anniversary video features it among its ten major achievements. In the Guatemalan media, it has been seen in recent years as a significant Guatemalan invention and as an innovative brand.<sup>72</sup> The producer, Alimentos S.A., has its own YouTube channel for marketing the mixture.

However, the cooperation with private enterprises also had its pitfalls. The commercial distribution of Incaparina required reasonable pricing if it was to be affordable for people suffering from hunger. Nevertheless, in 1969, INCAP's economic consultant Richard Shaw again drew attention to the fact that producers had to be able to make a 'reasonable profit' from Incaparina sales.<sup>73</sup> This issue caused difficulties when INCAP started to negotiate with private companies in each Central American country. This was not an easy task, since companies were reluctant to enter into the production of a low-cost food. During the first negotiations in Guatemala, two companies presented offers unacceptable for INCAP, since their profit margins would have necessitated a high price for Incaparina. Finally, *Cervecería Centro Americana*, a large Guatemalan brewery, obtained the first authorization in 1960. By 1969, Shaw concluded that Incaparina 'has demonstrated the economic viability of such a product without any reliance on direct subsidies or the support of massive governmental or other institutional purchases'.<sup>74</sup>

Similarly, commercial food producers started production in neighboring countries, among them the US firm Quaker Oats. In some instances, the introduction soon failed, as producers lacked political support or experience. In El Salvador, for example, the producers advertised Incaparina as a medicine, which turned out to be a commercial failure and, in Nicaragua, the producer *Alimentos Infantiles* did not meet INCAP's quality standards. As a result, Ricardo Bressani travelled to Managua to meet the Nicaraguan health minister. At the time, Nicaragua was ruled by the Somoza dictatorship, and Nicaraguan politicians largely ignored hunger and malnutrition in the country while paying lip service to international development goals. Accordingly, the health minister nearly kicked Bressani out of his office when the scientist argued for quality

70 INCAP, Informe Anual 1962–63, p. 43; Informe Anual 1967, p. 27; Informe Anual 1969, p. 7; Informe Anual 1971, pp. 10–11; Informe Anual 1972, p. 11; Instituto de Nutrición de Centro América y Panamá, Incaparina, Guatemala City: INCAP, 1966.

71 See for example: Moisés Béhar, Reflections on the Legacy of INCAP, in: *Food and Nutrition Bulletin* 31 (2010), pp. 173–175; Castro Arriola/Hilda Leticia, Impact of Internal and Environmental Factors on an International Institute for Technical Cooperation on Food, Nutrition and Health, Dissertation, Faculty of Philosophy, Cornell University 1999, p. 258; Creación de la Incaparina: fuente de proteínas de origen vegetal, September 2019, URL: <<http://www.incap.int/index.php/es/contribuciones4>> (with an interesting photo gallery at the bottom); and the short documentary produced by the firm in 2010: <<https://www.youtube.com/watch?v=3xXxtQx6W7U>>.

72 *Revista D* 134, 28 January 2007, pp. 8–9.

73 Shaw, Incaparina (fn 66), p. 103.

74 Richard L. Shaw, Incaparina in Central America, in: Max Milner (ed.), *Protein-Enriched Cereal Foods for World Needs*, St. Paul 1969, pp. 320–333.

guidelines in Incaparina production and, as a consequence, production in Nicaragua soon came to an end, since the local producer did not align to the technical standards. In El Salvador, the producer promoted Incaparina under the same name as in Guatemala, leading to competition between the two firms. In Costa Rica political support declined after President José Figueres Ferrer left office in 1974, leading to a drop-off in production.<sup>75</sup> To sum up, Incaparina was weakened in Central America by a combination of the absence of political support, failed marketing strategies, and deficient quality.

In Guatemala, however, reception was positive and widespread radio advertisement campaigns ensured that Incaparina became well-known among the target population. A 1968 survey in five rural communities revealed that more than 90 percent of the families were aware of Incaparina's existence. Nonetheless, only 37 percent consumed the mixture regularly.<sup>76</sup> Analyzing the reasons for low Incaparina consumption, researchers have highlighted popular misconceptions, prices, and the competition offered by donated food. For example, Guatemalans in some regions considered Incaparina to be so nutritious that only small quantities should be consumed, thus undermining the intention of supplying children with sufficient protein. Scientists had designed the mixture as a milk substitute and compared its price to the white liquid: In 1968, a glass of Incaparina was significantly cheaper than a glass of powdered skimmed milk (0.011\$ compared to 0.044\$). Guatemalan consumers, however, saw the mixture as a substitute for corn rather than for milk. During the 1960s, people mostly consumed it in the form of *atole*. Compared to corn, Guatemalans considered Incaparina to be expensive.<sup>77</sup> In its publications, INCAP scientists always highlighted that Incaparina was significantly cheaper than similar products, such as powdered milk, other processed *atole* mixtures or instant oatmeal.<sup>78</sup> However, *atole* drinks produced from corn dough, while more laborious, were significantly cheaper.

A 1968 survey among 1,246 people revealed that more than 70 percent consumed Incaparina for health reasons while 13.6 percent did so for its ›good‹ taste.<sup>79</sup> Therefore, taste was only a minor motivation for consuming Incaparina. The survey also demonstrated that people who stopped consuming Incaparina did so mainly as a result of its taste, its color, and its price. This was confirmed by a 1976/77 survey among 620 women in five different Guatemalan regions. This study also showed that 29.35 percent of these women stopped consuming Incaparina due to a lack of money.<sup>80</sup>

75 Interview Ricardo Bressani Castignoli, Guatemala City, 17 March 2011; Shaw, Incaparina in Central America (fn 74).

76 Shaw, Incaparina in Central America (fn 74), pp. 323-327.

77 Shaw, Incaparina (fn 66), p. 103.

78 See for example: Informe Anual 1967, p. 30. By then, a pound of Incaparina cost 20 Quetzales compared to 80 Quetzales for a pound of powdered milk and 39 Quetzales for a pound of instant oatmeal.

79 Robert P. Wise, The Case of Incaparina in Guatemala, in: *Food and Nutrition Bulletin* 2 (1980) issue 2, pp. 1-7; Uwe Kracht, Encuesta sobre el mercado de Incaparina realizado por la Universidad Técnica de Berlín, Guatemala, October 1968, pp. 6-7.

80 Dalia Margarita C. de Castañeda, Consumo de Incaparina a nivel familiar. Tesis de Licenciatura. Universidad de San Carlos/INCAP, August 1978, p. 34.

There is some evidence from 1968 acceptability surveys suggesting that Incaparina won most clients among the urban upper and middle classes. Moreover, several studies emphasized that the producer did not advertise Incaparina as a product for low-income groups, contradicting INCAP's original plans.<sup>81</sup> For example, an advertisement published in the newspaper *El Imparcial* in July 1969 includes a photo of a pregnant middle-class woman knitting on her sofa.<sup>82</sup> In rural areas, however, customers mainly became aware of Incaparina through radio advertisements as well as local shops and health centers.<sup>83</sup> By the mid-1970s, Incaparina prices rose again, thus making the mixture unaffordable for poor Guatemalans. In Colombia, by contrast, the producer had agreed on lower profit margins and could therefore offer the mixture at lower prices. In 1973, Incaparina was 50 percent cheaper than beans. As a consequence, people started buying larger packages and came to view the Colombian mixture as a basic food.<sup>84</sup>

In hindsight, leading INCAP personnel considered international food aid to be the main factor limiting Incaparina's successful introduction. The former INCAP director Moisés Béhar accused foreign donors of compelling Central American governments to distribute donated products, impeding them from including Incaparina in their health programs.<sup>85</sup> In fact, INCAP entered into several heated conflicts with CARE over Incaparina distributions in the 1960s, in the course of which CARE denounced Incaparina as an unpopular product which had only survived due to INCAP's ›propaganda machine and appeal to Central American nationalism‹.<sup>86</sup>

These contemporary evaluations have been increasingly erased by the Incaparina success story in the early twenty-first century. According to Ricardo Bressani, Incaparina entered the Guatemalan palate to the extent that Guatemalans now considered it a basic foodstuff.<sup>87</sup> Unfortunately, no further acceptability studies had been conducted until the early 2000s. In a survey among 100 care providers all interviewees in two communities claimed that Incaparina had a good taste, although 32 percent also considered the taste to be bitter.<sup>88</sup> The perspectives of the companies involved are more difficult to localize but, in public statements at least, early expressions on the cooperation are optimistic. For example, John C. Hussey, Marketing Director for Latin America at Quaker Oats expressed his pride at the production of a Colombian Incaparina version. In his eyes, the production of a low-cost protein-rich food was part of a ›good battle‹ against hunger. In addition, Hussey considered three factors to have been important in the successful introduction of a protein-rich food: first that the food was

81 Shaw, *Incaparina in Central America* (fn 74).

82 *El Imparcial*, 3 July 1969.

83 Kracht, *Encuesta sobre el mercadeo de Incaparina* (fn 79), pp. 6-7.

84 Wise, *The Case of Incaparina* (fn 79).

85 Moisés Béhar, *My Experience as Director of INCAP 1961–1974*, in: INCAP, *Annual Report 1988*, pp. vii–ix.

86 Fred Anderson to William M. Langdon, CARE New York, 25 November 1966, Box 657, CARE Archives.

87 Interview Bressani (fn 75).

88 Michelle Barenbaum et al., *Use, Acceptability, and Cost of Incaparina, a Commercially Processed Food in Guatemala*, in: *Food and Nutrition Bulletin* 22 (2001), pp. 71-80, here p. 76.

adapted to local consumption habits, second that the firm was sufficiently solvent to subsidize production in the introductory period, and third that its production required no imported raw materials. Hussey's statement also demonstrates US entrepreneurs' conviction that revolutionizing local food habits meant improving Latin American diets or, in his words, ›upgrading the Colombian diet‹.<sup>89</sup> This quote illustrates the conviction that food could be ›upgraded‹ through technological solutions. It also shows that the firms representatives believed in a cultural hierarchy of diets where industrial food ranked at the top.

While US enterprises initially considered the production of protein-rich food in Latin American countries as a new market opportunity, enthusiasm quickly waned. Sales were good in Colombia until two other companies introduced similar products in 1969, Colombiharina and Duryea. Both mixtures were based on defatted soya bean flour. As a result of their successful introduction, Incaparina sales decreased. Consequently, Quaker first invented a new product also based on soya bean flour and then, in 1970, abandoned the production of protein enriched foods in Colombia altogether.<sup>90</sup> However, a few years later, in 1976, the Colombian Institute of Family Welfare (*Instituto Colombiano de Bienestar Familiar*) took on the idea and launched a similar mixture named Bienestarina, which still exists today.

Although no systematic survey has been undertaken, it seems that many of the new protein-rich foods were commercial failures. In 1980, the former INCAP director Nevin Scrimshaw considered the greatest success of a protein-rich food similar to Incaparina to have taken place in India, where it was distributed under the name Bal-Ahar.<sup>91</sup> Although similar products were sold in many places, such as Nigeria, Sri Lanka, Brazil, or Lebanon, comparative studies on marketing, prices, ingredients, and consumers' responses are still lacking.<sup>92</sup>

#### 4. Conclusion

From the late nineteenth century onwards, science began to provide a new language for valuing food. This new language shaped concepts of food aid throughout the twentieth century and has informed humanitarian action to this day. Nutritional science gained a strong authority that increased in the second half of the twentieth century. Calories, vitamins and proteins became new markers for qualifying the distributed food. Adding micronutrients to foods, such as sugar, wheat, or cookies, seemed to offer a solution to world food problems based on industrial production. This new system

89 John C. Hussey, Pitfalls Between Production and Consumption of New Protein Foods: Incaparina in Colombia, in: *Journal of Dairy Science* 52 (1969), pp. 422-424.

90 Camilo Rozo, Complementary Foods in Colombia, in: *Food and Nutrition Bulletin* 21 (2000), pp. 55-61.

91 Scrimshaw, Incaparina (fn 64).

92 For an overview, see Tom Scott-Smith, Beyond the ›Raw‹ and the ›Cooked‹: A History of Fortified Blended Foods, in: *Disasters* 39 (2015), pp. S244-S260.

of international food aid stabilized after 1945, incorporating humanitarian organizations as well as private firms as new partners. During the Second World War, the aim of providing soldiers with nutritious food rations had fostered new research and the invention of fortified products. As in many other areas, technical inventions from wartime were later applied in the civilian sphere.

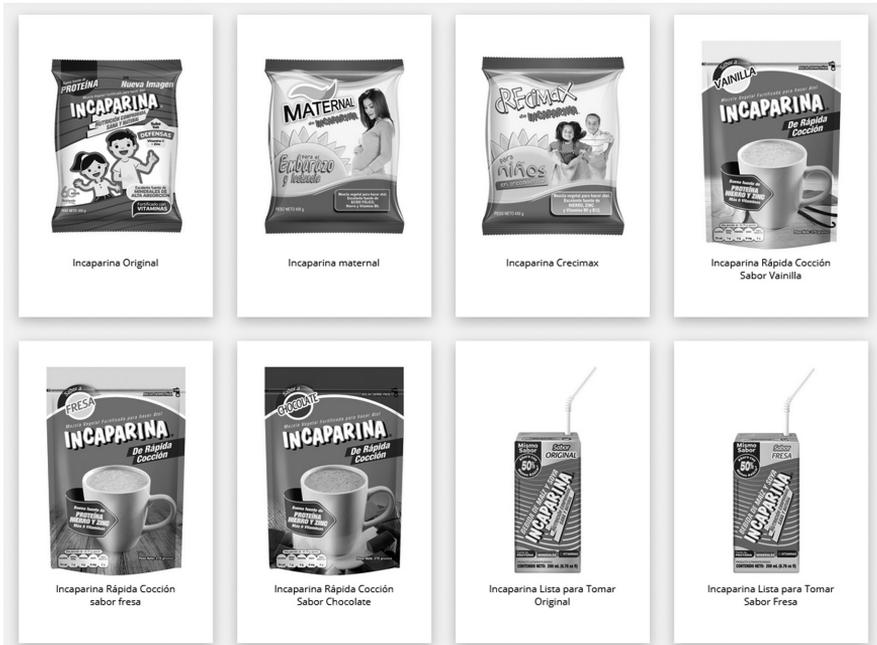
Cooperation between governments, NGOs, IOs, researchers, and food producing companies started in the 1950s and gained importance towards the 1960s and 1970s. We suggest that it is essential to include private enterprises as partners in the designing, selling, and marketing of fortified foods. In many cases, representatives from firms, NGOs, and IOs held vastly differing views on key questions such as prices, payments for quality controls, and modes of distribution. Scientists were not always able to retain epistemic authority over fortified products. While scientists evaluated the products according to their nutritional benefits, companies were concerned with marketing, taste, or competition, and agreements on prices were a particularly conflicted issue. While some of these new products did at first gain widespread interest, few first-generation protein-enriched foods actually ended up enjoying commercial success.

In the case of Incaparina, it is probable that the mere proximity to INCAP headquarters ensured its survival. Beyond this, further research is necessary in order to shed light on consumer perspectives and the long-term impacts of these products on food preferences. Incaparina's continued existence over several decades shows that Guatemalans valued the product, either as a good food for children, as a healthy product, or as a way to prepare *atole*. The firm currently offers Incaparina in its original flavor, but also in vanilla, chocolate, banana, and strawberry flavors. A 2001 survey demonstrated that care providers in communities close to Guatemala City frequently used Incaparina in feeding children. While all interviewees evaluated the taste of Incaparina as good, they also defined it either as bitter, sweet, or unique. The survey therefore included different evaluations of taste, but we do not know if the categories were established by the interviewers or the interviewees themselves.<sup>93</sup> Accordingly, we also suggest that research is needed to explore consumers' reactions to fortified foods in different regions of the world. In the 1960s and 1970s, recipients repeatedly rejected fortified foods on the grounds that these foods were foreign, too expensive or just did not taste good enough. Moreover, discussions in NGOs show that staff members felt the need to adapt the distributed food to people's needs, taking into consideration taste, climate, and the availability of refrigerators.

Changing scientific notions of hungry people's needs influenced the design of fortified foods. From the mid-1970s onwards, the initial focus on protein moved on to other micronutrients, such as vitamin A, when the International Vitamin A Consultative Group lobbied for new supplements. From the 1990s, international actors paid more attention to micronutrient deficiencies. Representatives at international nutrition

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93 <<https://www.centraldealimentos.com/marcas/incaparina/>>; Barenbaum et al., Use, Acceptability, and Cost of Incaparina (fn 88).



›Incaparina es energía, fuerza y salud para toda la familia‹ (›Incaparina is energy, power and health for the whole family‹): recent product images of Incaparina (<<https://www.centraldealimentos.com/marcas/incaparina/>>; screenshot, April 2021)

conferences defined specific goals for different micronutrients, further strengthening food fortification projects on a global scale. The World Bank in particular pushed for cooperation with private business and launched the Business Alliance for Food Fortification in 2005.<sup>94</sup> The idea of ›wonder foods‹ as a measure for improving the nutritional situation remained attractive, therefore, as did the close alliance with food producing firms.

Recently, so called functional foods or nutraceuticals have gained in influence. These products, enriched with substances such as Omega 3, minerals, or antioxidants, are globally marketed today as beneficial to health and contributing to the prevention of disease.<sup>95</sup> However, some of the first generation inventions, such as Incaparina in Guatemala or Bienestarina in Colombia, have also survived. The development of fortified foods is also promoted by traditional actors such as INCAP and Vanderbilt

94 Kimura, *Hidden Hunger* (fn 58), pp. 28-29, 41-47; John Nott, ›How Little Progress‹? A Political Economy of Postcolonial Nutrition, in: *Population and Development Review* 44 (2018), pp. 771-791.

95 Alice Street, Food as Pharma: Marketing Nutraceuticals to India's Rural Poor, in: *Critical Public Health* 25 (2015), pp. 361-372.

University. In 2015/16, they launched a new initiative: Mani+, a fortified peanut butter that is distributed to hungry children in Guatemala which includes high levels of protein, fat, calories, and other nutrients. Mani+ is produced by the social enterprise Nutriplus, located at INCAP facilities. Like its Incaparina predecessor, the peanut butter contains only local ingredients.<sup>96</sup>

In this article, we have demonstrated that there is a strong continuity in international food aid from the 1950s to the early twenty-first century. Scientists, relief workers, company representatives, politicians, and recipients contributed to a global network of food distribution, including different generations of ›wonder foods‹. Future research needs to address changing power asymmetries within this network and to include perspectives on the specific agency of actors which have thus far been widely neglected: private firms, among them large multinationals such as Nestlé, Coca Cola or General Mills, as well as food consumers. Only if we shed additional light on the interests and transformative power of these actors will we be able fully to understand how ›wonder foods‹ conquered a growing share of the global food market both within and beyond food assistance and emergency relief.

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96 <<https://news.vanderbilt.edu/2015/10/05/vanderbilt-malnutrition-project-opens-mass-production-facility-in-guatemala/>>; <<https://news.vanderbilt.edu/2016/02/29/the-power-of-the-peanut-nutritional-supplement-serves-vital-need-for-malnourished-children-in-guatemala/>>.