



Dismantling of Institutionalization and State Policies as Guarantors of Food Security in Venezuela: Food Safety Implications

Pablo Hernández^{1*}, Andrés Carmona², Maria S. Tapia³ and Siloyde Rivas⁴

¹ Nutrition and Dietetics School, Central University of Venezuela, Caracas, Venezuela, ² Laboratory of Nutritional Biochemistry and Metabolism, Central University of Venezuela, Caracas, Venezuela, ³ Institute of Food Science and Technology, Central University of Venezuela, Caracas, Venezuela, ⁴ Independent Researcher, Caracas, Venezuela

Historically, Venezuela was recognized as a country with solid government food safety policies, science-based legislation, clear national food security goals, strict standards for domestic food production and imports, and a system of institutions committed to ensuring safety and quality along each step of the food chain. Major institutions that aimed to insure people's welfare, nutrition and food availability, and safety were created between 1936 and 1949. Remarkable progress was achieved in terms of control of tropical maladies and fight against hunger and malnutrition. The National Institute of Hygiene set the standards for food safety and the continuous surveillance of available foods. The National Codex Alimentarius Committee was officially created in 2001. Nowadays, the situation has dramatically deteriorated as indicated by a severe decline of national food production and a strong dependence on food imports, whose prices make them inaccessible to the majority of Venezuelans. In response to the humanitarian crisis, the government created a food program, the so-called Local Supply and Production Committee (CLAP), to distribute basic foods at reduced prices but with clear intentions of social and political control of the population. Currently, CLAP products come from government imports at a preferential exchange rate. Under the umbrella of an economic emergency decree, many food safety regulations and surveillance protocols have been relaxed or eliminated, often resulting in the acquisition of low-guality items that do not meet Venezuelan food preferences or quality standards. The objective of this work is to describe, through the Venezuelan case, how the food security infrastructure of a country can be dismantled. We address (1) the development of institutions dedicated to promoting food security and nutrition and the recent dismantling of the sector; (2) the creation, characteristics, and weakness of the CLAP program; and (3) the current food insecurity crisis and the attempts to provide humanitarian help to the Venezuelan population.

Keywords: food security, food safety, state policies, science-based legislation, Venezuela

"-How long are you going to treat these children, Dr. Bengoa? -Until they smile, Father Quintana" (Bengoa, 2002)

OPEN ACCESS

Edited by:

Arun K. Bhunia, Purdue University, United States

Reviewed by:

Kalmia Kniel, University of Delaware, United States Joseph D. Eifert, Virginia Tech, United States

> *Correspondence: Pablo Hernández doctuscumliber@gmail.com

Specialty section:

This article was submitted to Agro-Food Safety, a section of the journal Frontiers in Sustainable Food Systems

> Received: 30 October 2020 Accepted: 05 January 2021 Published: 18 February 2021

Citation:

Hernández P, Carmona A, Tapia MS and Rivas S (2021) Dismantling of Institutionalization and State Policies as Guarantors of Food Security in Venezuela: Food Safety Implications. Front. Sustain. Food Syst. 5:623603. doi: 10.3389/fsufs.2021.623603

INTRODUCTION

Once a rich country, with its economy based mainly on oil production and export, Venezuela managed to guarantee food security by complementing its food availability with the import of some items such as wheat, powdered milk, and edible fats. Venezuela's modern history as a major oil producer started in 1922; shortly thereafter, the country began to build an important institutionalization since 1936, including the creation of the Ministry of Health and Social Welfare and the National Institutes of Hygiene and Nutrition. Public policies implemented helped the acquisition of capital goods and the import of processed foods, purchasing power, and urbanization grew from 1936 through 1945 (Machado-Allison, 2007).

Child malnutrition was a big concern; it became evident from a food survey conducted in a poor neighborhood in Caracas in 1943, leading to the implementation of a net of school and popular diners. The National Institute of Nutrition (INN) developed programs to improve the alimentary and nutritional status of the Venezuelan population, as well as those aimed to treat and recover children suffering from severe malnutrition. In the 1960s, the success of the campaign to control malaria (1936–1964) and other diseases was resounding, and progress was also unquestionable in fighting hunger and malnutrition and in promoting food security and safety (López de Blanco and Carmona, 2005). The National Institute of Hygiene (INH) set the standards for food and drug surveillance.

From 1945 to 1978, there was a 4% annual growth in agricultural production (Pinto-Cohen, 1984). From 1945 to 1958, both food imports and agro-industrial development grew rapidly. In the 1960s, agriculture, livestock, and national production grew at an accelerated rate; unemployment also decreased, and the purchasing power increased; all these factors contributed to improving the population's food security (Machado-Allison, 2007). Despite the economic crisis of the 1980s, agriculture continued to grow. Available calories per inhabitant reached their maximum between 1978 and 1980 (2,800 kcal/day) (Machado-Allison, 2007; FAOSTAT, 2016). Between 1990 and 1996, a more equilibrated agricultural trade balance was achieved thanks to increased exports (Gutiérrez, 2002). Imports remained around US\$75 per inhabitant per year for many years, dominated by feed grains, wheat, oils, sugar, and powdered milk.

In 1998, the incoming administration of Hugo Chávez promised to share the country's oil wealth with the poor to guarantee food security, relying on oil revenues, which accounted for 93% of exports in 2008. Although agricultural and food security and sovereignty were state objectives, there was a drop in domestic food production, and the imports were increased to guarantee availability. Unfortunately, the decline in oil prices and erratic macroeconomic policies caused, particularly between 2008 and 2014, a shortage of foreign exchange and the falling domestic food production that could not be compensated by imports (Gutiérrez, 2016). The fall in oil prices in 2014, together with the reduction in oil extraction capacity, profoundly impacted the import of crop seeds and agricultural supplies. This negatively affected national food production. The crisis in food production deepened, not only as a result of currency restrictions but also due to government regulations, lack of confidence of private investors, and large property seizures, particularly of crop and cattle farms and industrial facilities (Doocy et al., 2019). For example, national food production, which covered 75% of food demand in 2013, fell to only 25% coverage by the end of 2017. From 2012 to 2016, total per capita imports fell by 66.5%. This caused a severe shortage of essential foods, and total food availability fell to critical levels never seen in the country.

Food safety was closely monitored by three organizations: the INH; the Venezuelan Industrial Norms Committee (COVENIN Standards), which established a series of strict regulations on manufactured foods; and the National Codex Alimentarius Committee, which was officially created in 2001. Therefore, until 1999, Venezuela had science-based legislation, clear national food security goals, strict standards for domestic food production and imports, and a system of institutions committed to ensuring safety and quality along each step of the food chain, all of them coordinated by the National Food Council, created by a presidential decree but whose activities were ended around 2003 when the food program Mercal came into play. Despite the fact that food security and safety were recognized as a fundamental right of the Venezuelan people in Article 305 inscribed in the Constitution of the Bolivarian Republic of Venezuela, nowadays, the alimentary situation has dramatically deteriorated. This work describes, through the Venezuelan case, how the food safety and security infrastructure of a country has been dismantled.

DEVELOPMENT OF INSTITUTIONALIZATION IN NUTRITION AND FOOD SECURITY IN VENEZUELA

Up to the Second World War, Venezuela was a rural country with minimal development of public institutions. The Ministry of Health and Social Welfare and the INH were created in 1936 and 1938, respectively. In the early 1940s, child undernutrition was a widespread problem, and the general population did not receive an adequate and balanced food supply. The first nutrition survey ever performed in Venezuela evaluated the nutritional situation of the inhabitants of "El Guarataro," a low-income Caracas neighborhood. Results of this study prompted the development of a nationwide net of popular diners where the working class could eat a complete lunch at a much reduced price; in addition, school children started to receive a daily glass of milk and/or a free lunch in their schools (Carmona, 2014).

Figure 1 shows a newspaper headline celebrating the 1943 opening of a school canteen; meals served included a glass of milk for every child. These early intervention programs led to the creation in 1949 of the INN. From this organism, solid and long-lasting policies were conducted, resulting in substantial amelioration of malnutrition among children up to 14 years of age. In regard to the food supply and safety, two food surveys at the national level were conducted, along with the periodic assessment of life conditions, evaluated through yearly surveys performed by the National Institute of Statistics and

El Comedor Escolar de la Experimental Venezuela, uno de los Mejores de América

Por sugerencia del Dr. Bengoa se añadió allí un vaso de leche al almuerzo de los alumnos.

FIGURE 1 | A 1943 newspaper account of the opening of the first Venezuelan school diner. "The diner of the Experimental Venezuela School, one of the best in America. By suggestion of Dr. Bengoa a glass of milk was added to the students' lunch." Source: José María Bengoa personal archive.

the Central Bank of Venezuela. Numerous campaigns were conducted based on food nutrition guidelines, the assessment of the nutritional status of adults and children, and the promotion of breastfeeding. The INN also published the National Food Balance Sheets, the Food Composition Tables, the Energy and Nutrient Requirements Tables for the Venezuelan Population, food guidelines for various population groups, reports of undernutrition prevalence, and the Venezuelan Archives of Nutrition that were later converted to the Latin-American Archives of Nutrition.

INN commanded the war against severe child malnutrition. Jose Maria Bengoa in 1939 pioneered the creation of recovering centers for malnourished school children. In a small Venezuelan rural town, he cared for emaciated and gloomy school children. Years later, the installation of a few nutritional recovery centers, financed by either public or private funds, almost eliminated the severe malnutrition prevalence. In 1991, a resolution from the Ministry of health (G-845) decreed that the report of malnutrition cases, evaluated by either clinical examination or anthropometric evaluation, should be mandatory. Nonetheless, since 2007, there have been no official bulletins published by INN.

Since 1975, United Nations (UN) agencies have proposed a strategy for the planning of a food and nutrition policy composed of three elements: (a) promote integrated rural development to improve food production and family income; (b) improve the combination of food produced, its processing, and its distribution; and (c) emphasize intervention programs toward specific target groups (Permanent Advisory Commission on Food Nutrition in the Andean Area, 1975).

Although in national planning, the nutritional issue was treated implicitly, it was only in the 5th National Plan (1976–1980) when "nutrition" was explicitly mentioned for the first time, emphasizing its importance for the country's social and economic development. It was in the 11th Plan of the Nation (1995), when the issue of food security was first addressed.

Besides, the prevention of micronutrient deficiencies, especially iron, was also considered. A program to enrich both corn and wheat flours, with various vitamins and minerals, was launched in 1993, resulting in a significant decrease in anemia (Comisión Venezolana de Normas Industriales, 1996; Chávez-Pérez, 2005). The National Food Council was created in 1995 with the mission to advise the government on the policies required to guarantee an adequate food supply, its physical and economic access, and its optimal biological use by the entire population (Carmona, 2000).

As shown in **Figure 2**, the availability of energy from 1980 to 2008 was only slightly adequate since most values were only 10–15% higher than the country's requirement (Instituto Nacional de Nutrición, 2008), which was increased to 2,300 kcal/day in late 2000 (Instituto Nacional de Nutrición, 2000); nonetheless, the population's access to available foods was unequal. By the end of the 1990s, around 50% of the population lived in poverty, and almost 30% was extremely poor (Consejo Nacional de la Alimentación, 1998, 2001). Bolivarian Republic of Venezuela (1999) considered food security as a fundamental right of the population (Article 305). Despite this fundamental advance, the obligation to fulfill this mandate is far below any expectancy.

The planning of food security policies requires timely, reliable, and trustworthy information. INN collected data on the population's nutritional status and published them in quarterly and annual bulletins easily accessible to the general public. This access was limited since 2008 (see **Figure 2**), although the collection of relevant information has continued. Therefore, there is a manifest void of information regarding the nutritional and alimentary status of the population, which is so necessary in the critical moments that the country is experiencing.

South America hosts the majority of the undernourished in the region (FAO et al., 2019); the increase observed in recent years is due mainly to the deterioration of food security in Venezuela, where the prevalence of undernourishment increased almost four-fold, from 2012–2014 to 2016–2018.

The strategies to survive in the face of lack of food are the following: 27% of households have had to resort to begging, 35% have eaten foods that they would rather not have eaten, 42% had to rummage for food on the streets in order to eat, and 57% have incurred some form of food deprivation (Caritas de Venezuela, 2020).

Regarding food safety, there was great concern from different government administrations until the 1990s. In 1940, the INH created the Food Control Laboratory; a year later, the first regulation on food and beverages was dictated, and the food registry was created (Belisario, 2008). Traditionally, the ministries of the health sector operated the food and nutrition programs and policies. Currently, the INN is allocated to the Ministry of Food. Food security policies put emphasis almost exclusively on food supply, disregarding nutritional and safety issues.

At present, food availability is not sufficient and does not meet the nutritional requirements of the Venezuelan population; food quality and safety are not usually addressed. For instance, every so often, there are newspaper reports of cyanide poisoning and deaths resulting from bitter cassava consumption; no enforcement is in place to avoid retail sales of this root variety used to produce a traditional starchy cake after cyanide glycosides are eliminated. A few years ago, the country was shaken by



the discovery of full loads of rotten foods resulting from uncontrolled imports. Complaints are also frequent in relation to poorly refrigerated meat and poultry food distributed through government programs. All of these must be considered in broader terms, like ingredients of a disaster cocktail; the provision of important public services (tap water, electricity, and household gas) limits household hygiene and regular cooking practices and jeopardizes food safety and consumer health. The use of firewood for cooking is growing even in the provincial capitals. In many respects, life in Venezuela resembles that of a war zone with surmounting limitations. Oletta-Lopez et al. (2016) reported an increase in outbreaks and cases associated with foodborne diseases (FBDs), concluding that the official silence on epidemiological information does not contribute to reducing the threat of infectious diseases, exacerbated by the precarious situation of public services and environmental conditions. The main problems include the shortage of potable water, inappropriate solid waste collection and wastewater treatment, the proliferation of vectors, the contamination of reservoirs and water sources, the spread of informal food and beverage consumption, the shortage of staples, and the impoverishment of the population, which has led to the consumption of discarded food.

This affects the biological use and hygiene of cooked foods, increasing the risk of tropical maladies such as diarrhea and dysentery in malnourished children (World Food Program, 2019; Observatorio Venezolano de Servicios Públicos, 2020).

In 2001, the Venezuelan Codex Committee was created and began its operations within the Ministry of Commerce's regulatory and quality control office. With this, Venezuela took a significant step to harmonize national regulations with Codex standards. It was a short-lived commission, since its activities ceased in 2006. This left Venezuela without adequate connection with international norms and regulations in the commercialization of food, particularly in times when national food imports have dramatically increased, most often without proper quality and safety control. **Figure 3** presents the timeline course of the creation and dismantling of agencies and programs within the food and nutrition sectors. For more than six decades, food security and safety institutions were created, showing a positive synergy between the country's scientific and political establishments.

In contrast, after 1999, erratic policies, rooted in the growing political conflict, have led to the dismantling of, otherwise, successful agencies. For instance, the National Food Council ceased its activities in 2003 and was finally replaced in 2015 by the National Center for Food Balance (CENBAL). This administrative body is in charge of supervising national food production and imports. The 1996 Strategic Food Program (PROAL) was abandoned. Through this component, six strategic foods (corn flour, rice, oil, sardines, grains, and powdered milk) were subsidized and distributed at local levels (Consejo Nacional de la Alimentación, 2001). PROAL was substituted by a series of unsuccessful food programs, Mercal, PDVAL, and lately by the so-called Local Supply and Production Committee (CLAP), whose characteristics and functions are described below.

LOCAL SUPPLY AND PRODUCTION COMMITTEE: IRREGULARITIES FROM VARIOUS INSTITUTIONAL EDGES

In an attempt to ameliorate food access and consumption problems, in 2016, the government made significant efforts and allocated enormous resources to implement a new food distribution program. CLAP was part of a presidential state of emergency decree. This is an indirect food subsidy program that distributes food bags to various population segments that should



register in the program in order to be eligible. CLAP allocates basic foods (precooked cornmeal, rice, pasta, oil, sugar, powdered milk, etc.) through communal boards and other organizations controlled by the government. Because of its character, this program has been considered an instrument of social control of the population motivated by political reasons. For instance, admission or rejection is discretional and closely monitored by the government and/or the ruling party.

According to data from 2017 (Aponte-Blank, 2019), CLAP attended to around 12.6 million Venezuelans; it is clearly an insufficient coverage considering that 87% of the 28 million inhabitants are suffering poverty. In addition, despite the fact that the program was designed for a monthly distribution, actual delivery is erratic; for instance, 53% of beneficiaries reported unpredictable distribution frequencies, without a sustained periodicity. Furthermore, as compared to the initial food basket supplied, many products have disappeared from the bags, particularly the animal protein sources, to include mostly cereals.

In October 2016, Venezuelan food industries were forced to sell up to 50% of their production for CLAP distribution, affecting the regular commercial channels and excluding the vast majority of the population from the system. Since the volume of foods required could not be guaranteed only through domestic production, a niche was opened for food imports to favor a monopoly of private Venezuelan importing companies, which benefited from a highly advantageous differential exchange rate (Tapia et al., 2017). This avalanche of food imports was shielded by the economic emergency decree which allowed transitory regulations and laxity in procedures to bypass nutritional and/or safety requirements and favored different forms of corruption, as has been denounced.

Precooked cornmeal is one of the most indispensable products of the Venezuelan food pattern, always present in the CLAP inventory. Some cornmeal, imported, for instance, from Brazil or Mexico, is not tested to check if they meet Venezuelan regulations for protein content and vitamin and mineral fortification. Nutrient fortification was required and promoted by the official sector (Comisión Venezolana de Normas Industriales, 1996; Chávez-Pérez, 2005), and its monitoring and control was the responsibility of the INH and INN. Nonetheless, in recent years, this requisite seems to have been bypassed. Another example relates to genetically modified organisms (GMOs) whose planting, use, and marketing are prohibited in Venezuela (República Bolivariana de Venezuela, 2002, 2008). However, the cornmeal imported from Brazil is labeled as made with transgenic maize, which contradicts Venezuelan food regulations.

Another critical example is powdered milk. Consumers benefiting from CLAP started to perceive conspicuous sensory problems after consuming the powdered milk distributed; many consumers denounced, through social networks, that some kinds of milk imported from Mexico were salted, did not make foam, and tended to precipitate and to cause diarrhea in children and adults.

Hernández et al. (2019) evaluated the nutritional composition of 14 Mexican dairy product brands distributed by CLAP in Venezuela. A descriptive and cross-sectional study was conducted; samples were obtained from households in the Caracas metropolitan area. The information presented in the product labeling was compared with both the Venezuelan standard (Comisión Venezolana de Normas Industriales, 1982a,b, 2001) and the results of the chemical and nutritional composition analysis conducted. Regarding labeling, it was found that, for 43% of the brands, there was an agreement between declared values and the chemical analysis results; only two brands were labeled as dairy products. The chemical analysis showed inaccuracies in the information presented in the labels. The principal components analysis, followed by a hierarchical conglomerate, allowed differentiation of four clusters: two real and two ideals. Most of the products analyzed were significantly higher in carbohydrates and sodium (p < 0.05) and low in protein and calcium (p < 0.05). All evaluated samples did not comply with not only the 1,481 Venezuelan standard (Comisión Venezolana de Normas Industriales, 2001) but also the criteria of the Official 155-SCFI-2012 Mexican standard. Therefore, for most brands, the declared product name and composition did not correspond to the nutritional content resulting from chemical analysis.

Interestingly enough, there were relevant differences in protein content; in one of the brands, protein tenor was 3.82 g/100 g instead of 25.53 g/100 g as declared in the label; this low protein level may explain the lack of foam formation upon dilution. Most of the brands traded had carbohydrate contents accounting for up to 80% of total solids. Considering that the principal milk's sugar is lactose, the excess of this disaccharide can cause osmotic diarrhea. There were also significant differences in micronutrients; sodium content was above 1,100 mg/100 g in three milk brands. Therefore, this high sodium level may produce the salty taste reported by consumers. In only one brand, the actual calcium content corresponded to that indicated in the label. The minimum calcium value found was 40.36 mg/100 g. This value is similar to the calcium content in rice flour (Hernández et al., 2019). Many parents offer milk to their children as a nutritional source of calcium and protein. Regular consumption of these products could affect children's growth. Additionally, sodium excess may affect young children's renal function and increase the risk of cardiovascular diseases in adults. These irregularities were reported to the Venezuelan Ministry of Food and the INH without any official answer. Nevertheless, because the milk's adulteration had occurred in Mexico, the Mexican prosecutor opened an investigation in 2019 for food fraud and a corruption case.

Finally, there are examples of food mislabeling, such as yellow cornmeal labeled as white cornmeal. This basic mistake is widespread in CLAP products. Although this does not compromise food safety, it violates food laws and regulations; this shows the relaxed quality control of CLAP foodstuffs while strict surveillance is imposed on processed foods made by Venezuelan private industries.

IMPACT ON VENEZUELAN CONSUMERS IN A SITUATION OF VULNERABILITY AND LACK OF PROTECTION IN TERMS OF FOOD SAFETY AND SECURITY

The absence of reliable information from official sources makes it very difficult to assess the population's current state regarding food safety and food security. Under this scenario, the three highest-ranked universities of Venezuela have coordinated their actions and developed the National Survey of Living Conditions (ENCOVI, by its Spanish acronym) in an effort to provide an independent set of national indicators, especially on food security. The 2014 survey included only questions limited to assess income information; around 80% of the respondents declared that salaries and other money incomes were not enough

to buy food (Landaeta-Jiménez et al., 2015). Three years later, using a six-item food security scale (Landaeta-Jiménez et al., 2017), it was found that 70.8% of those answering the survey did not have enough food at home to meet their needs. Strikingly, in 6 out of 10 households, at least one adult went hungry to bed because they did not have food or money to access it. The absolute value of food insecurity was 80%, but its severity was not determined. In 2018, the ENCOVI group changed the measurement methodology to the Latin American and Caribbean Food Security Scale (ELCSA) (Universidad Católica Andrés Bello, 2020). Results show an increasing trend of foodinsecure households: 88% in 2018, 94% in 2019, and 97% in the current COVID-19 period. It should be noted that families with moderate food insecurity were the ones that statistically contributed the most to this increase (2018: 31%, 2019: 36%, and 2020 COVID-19: 41%) (Universidad Católica Andrés Bello, 2020).

The Venezuelan government invited the WFP to conduct a food security assessment in the country (World Food Program, 2019). A total of 8,300 questionnaires were applied. Results showed that a third of Venezuelans (32.3%) did not get enough to eat, while only 8% were food secure. Therefore, it was deduced that 92% of the Venezuelan population suffers food insecurity in any of its degrees (mild, moderate, or high).

The food insecurity state is related to a poor nutritional status. According to FAO et al. (2019), for the 2014–2016 interval, Venezuela had a 6.4% prevalence of undernourishment. This value increased to 21.2% between 2016 and 2018. These data represent a three-fold increase in undernourishment during the indicated period. A previous report from ENCOVI reported an average weight loss in responders, close to 11 kg between 2016 and 2017 (Landaeta-Jiménez et al., 2018). The average caloric intake registered was 1,749 and 2,059 kcal for women and men, respectively (Ramirez et al., 2017).

Another consequence of the food insecurity state is the unstoppable migration. According to the United Nations High Commissioner for Refugees (UNHCR), worldwide, there are, currently, around 4.5 million Venezuelan refugees and migrants; one of the major driving forces of this migration is hunger, along with the pitiable living conditions (https://www.unhcr.org/ venezuela-emergency.html).

ACCOUNT OF RECENT HUMANITARIAN INITIATIVES

Based on the absence of official data on the socioeconomic and health status of the Venezuelan population and the humanitarian situation, a joint effort of Johns Hopkins School of Public Health and Human Rights Watch, using 2018 information shared through key informant networks and a literature review, evaluated the food and nutrition situation in Venezuela. They also assessed if the crisis met thresholds for a food emergency declaration (Doocy et al., 2019). They concluded that an extensive intervention program in Venezuela was urgently needed, suggesting a tripartite group composed by representatives of the Venezuelan government, UN agencies, and civil society organizations to coordinate the provision of humanitarian assistance.

In 2019, the humanitarian space in Venezuela expanded through the proper installation of the international humanitarian coordination architecture of the UN, composed by OCHA, a humanitarian country team, and a group to coordinate eight clusters that have been formally activated, namely, food security and livelihoods; health; nutrition; water, sanitation, and hygiene; protection (including the areas of responsibility of child protection and gender-based violence); shelter, energy, and non-food items (NFIs); education; and logistics. Together, these mechanisms are leading the coordination of principled humanitarian action across Venezuela (https://reliefweb.int/report/venezuela-bolivarian-republic/venezuela-humanitarian-response-situation-report-no-02-july).

The UN's humanitarian architecture and its partners scaled up actions with a Humanitarian Response Plan providing caring and protection assistance to 2.4 million people in 2019. In 2020, the humanitarian situation in Venezuela continues to have an impact on the physical and mental well-being, living conditions, and protection of the seven million people estimated to have humanitarian needs in 2019. The Humanitarian Response Plan for 2020 has been expanded to include a component to ameliorate the health and socioeconomic impact of the global COVID-19 pandemic (https://www.unocha.org/ venezuela/about-venezuela).

CONCLUSION

An intense effort to develop solid institutions aimed to address chronic health and nutrition problems can be documented in Venezuela since the onset of the Second World War. As a result of this, for many years, Venezuela was recognized as a country with solid infrastructure, not only in nutrition and food safety policies but also in terms of education, health services, roads, electricity, and potable water. During the last 20 years, Venezuelans have witnessed the progressive destruction of a wide range of institutions: public organizations, public and private industries, cattle and crop farms, universities and research facilities, and the national electric, domestic gas, and tap water networks. The socioeconomic situation can be described with a few words: low wages, unemployment, poverty, hunger, malnutrition, and hopelessness. For millions, particularly the young ones, the alternative has been the exodus to other countries; elders have been left behind and depend largely upon money transfers from their relatives living abroad. The COVID-19 pandemic has made things worse for Venezuelan migrants,

making them defenseless and with little resources to support their families at home. Within this article's scope, the dismantling of institutions aimed to protect the constitutional right to receive an adequate food supply (in quantity, quality, and safety) has placed the Venezuelan consumers in a situation of vulnerability with little or no food security at all. Irregularities described here speak of a deficient role of the institutions in charge of ensuring the quality, safety, and compliance with standards and regulations of imported products for the Venezuelan population. Although ethically justified under this severe crisis, the CLAP program shows several distortions, inequalities, and lack of coverage and efficacy that make it practically useless. Humanitarian assistance is desperately needed; however, it should promote people's welfare without political submission. The task ahead of us is incommensurable. Rebuilding the lost institutionality would require decades. Thousands of Venezuelan migrants with solid professional backgrounds should return to help the reconstruction process. Global standards on the composition of essential products, globally harmonized labeling, and regulations should be recovered. Food safety and security are critical concerns. To achieve it, we need to build an ample alliance of active forces (government officials, politicians, the scientific community, and military establishment) able to recognize the significance of this deteriorating situation in order to protect the Venezuelan population. The authors are aware of this article's limitations: however, there are many constraints and difficulties to access information, not only because of political or institutional reasons but also for the closure of libraries and reference centers due to economic constraints and the COVID-19 pandemic.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

ACKNOWLEDGMENTS

The authors dedicate this paper to the memory of José María Bengoa (1913–2010), teacher and guide of professionals in nutrition, a constructor of institutions, and an advocate of food security and safety, not only in Venezuela but also worldwide, from his activity as a WHO officer. Part of this work was presented at the Congress on Food Safety and Security, 24–28 March 2019, in Leiden, The Netherlands. Authors thank the Global Harmonization Initiative (GHI) and its president, Dr. h.c. Huub Lelieveld, for their economic and moral support.

REFERENCES

- Aponte-Blank, C. (2019). Los Comités Locales de Abastecimiento y Producción (CLAP) y la Gran Corrupción del siglo XXI. [Technical Report]. Caracas: Central University of Venezuela. doi: 10.13140/RG.2.2.14927.02722
- Belisario, G. (2008). Instituto Nacional de Higiene Rafael Rangel. Reseña histórica en su 70° Aniversario (1938-2008). *Rev Inst Nac Hig Rafael Rangel* 39, 6–10.

Bengoa, J. M. (2002). Sanare: relato de un médico rural. *An. Venez. Nutr.* 15, 37–41.

Bolivarian Republic of Venezuela (1999). Constitution of the Bolivarian Republic of Venezuela, 1999. Available online at: http://www.minci.gob.ve/wp-content/ uploads/2011/04/CONSTITUCION.pdf (accessed August 25, 2020).

Caritas de Venezuela (2020). Monitoreo Centinela de la Desnutrición Infantil y la Seguridad Alimentaria Familiar de los meses de Abril – julio 2020. Available online at: http://caritasvenezuela.org/wp-content/uploads/2020/09/Boletin-SAMAN_Caritas-Venezuela_Abril-Julio2020-r1_compressed.pdf (accessed August 27, 2020).

- Carmona, A. (2000). Consejo nacional de la alimentación. An Venez Nutr. 13:1.
- Carmona, A. (2014). José María Bengoa, el nuestro. Elegía en ocasión de su centenario. *An Venez Nutr.* 27:1.
- Chávez-Pérez, J. F. (2005). Guidelines on nutritional policy to combat iron deficiency. Food fortification. *An Venez Nutr.* 18, 49–54.
- Comisión Venezolana de Normas Industriales (1982a). Norma COVENIN 369:1982. Leche y sus derivados. Determinación de cloruros (1ra. Revisión). Caracas: Fondonorma.
- Comisión Venezolana de Normas Industriales (1982b). Norma COVENIN 1158:1982. Alimentos. Determinación de calcio. Método de referencia (1ra. Revisión). Caracas: Fondonorma.
- Comisión Venezolana de Normas Industriales (1996). Norma Venezolana COVENIN 2135:1996. Harina de maíz precocida. 4ta. Revisión. Caracas: Fondonorma.
- Comisión Venezolana de Normas Industriales (2001). Norma COVENIN 1481:2001. Leche en polvo. Caracas: Fondonorma.
- Consejo Nacional de la Alimentación (1998). Report on the Implementation of the Plan of Action of the World Food Summit. Caracas: National Food Council.
- Consejo Nacional de la Alimentación (2001). Informe del Secretario Técnico: Venezuela: Seguridad alimentaria, pobreza y desnutrición. Caracas: Ministerio de la Producción y el Comercio.
- Doocy, S., Ververs, M-T., Spiegel, P., and Beyrer, C. (2019). The food security and nutrition crisis in Venezuela. Soc. Sci. Med. 226, 63–68. doi: 10.1016/j.socscimed.2019.02.007
- FAO, IFAD, UNICEF, WFP, and WHO (2019). The State of Food Security and Nutrition in the World 2019. Safeguarding Against Economic Slowdowns and Downturns. Rome: FAO.
- FAOSTAT (2016). Food Balance Sheets 2016. Available online at: http://www.fao. org/faostat/en/#data/FBS/ (accessed July 30, 2020).
- Gutiérrez, A. (2002). "El comercio exterior agroalimentario en la década de los noventa," in Agronegocios en Venezuela, ed C. E. Machado-Allison (Caracas: Ediciones IESA), 205–236.
- Gutiérrez, A. (2016). *Venezuela y su crisis agroalimentaria*. Documento de trabajo 1-2016. Available online at: https://www.saber/ula.ve/bitstream/123456789/ 41608/3/2016_gutierrez_1_br.pdf (accessed June 14, 2020).
- Hernández, P., Marcano, P., and Deniz, R. (2019). Evaluación del contenido nutricional de productos lácteos en programa de alimentación venezolano. *Arch. Lat. Nutr.* 69, 113–124.
- Instituto Nacional de Nutrición (2000). Valores de referencia de energía y nutrientes para la población venezolana. Caracas: INN, 5–25.
- Instituto Nacional de Nutrición (2008). *Hojas de Balance de alimentos 1980-2008*. Caracas: INN.
- Landaeta-Jiménez, M., Herrera-Cuenca, M., Ramírez, G., and Vásquez, M. (2017). "Las precarias condiciones de alimentación de los venezolanos," in *Espejo de la crisis humanitaria venezolana. Encuesta Nacional de Condiciones de Vida 2017, ENCOVI 2017*, ed A. Freitas (Caracas: Universidad Católica Andrés Bello), 151–176.
- Landaeta-Jiménez, M., Herrera-Cuenca, M., Ramírez, G., and Vásquez, M. (2018). Las precarias condiciones de alimentación de los venezolanos. Encuesta Nacional de Condiciones de Vida 2017. An Venez Nutr. 31, 13–26.
- Landaeta-Jiménez, M., Herrera-Cuenca, M., Vásquez, M., and Ramírez, G. (2015). "La alimentación y nutrición de los venezolanos. Encuesta Nacional de Condiciones de Vida 2014," in Una mirada a la situación social de la población venezolana: Encuesta Nacional de Condiciones de Vida 2014 (ENCOVI 2014), eds A. Freitez, M. González, and G. Zúñiga (Caracas: UCAB-USB-UCV), 53–58.
- López de Blanco, M., and Carmona, A. (2005). Food and nutrition transition: a challenge in the XXI century. Anales Venezolanos de Nutrición 18, 90–104.
- Machado-Allison, C. (2007). Consumo de alimentos en Venezuela. Caracas: Ediciones IESA.

- Observatorio Venezolano de Servicios Públicos (2020). *Boletín Informativo*. Resultados del estudio de percepción ciudadana sobre servicios públicos. 10 Ciudades. Abril-mayo 2020. Available online at: http://www. observatoriovsp.org/wp-content/uploads/Boletin-12_8-Web.pdf (accessed August 12, 2020).
- Oletta-Lopez, J. F., Orihuela, A. R., Walter, C., Carvajal, A., Godoy, O., Castro, J., et al. (2016). "Enfermedades transmitidas por alimentos en Venezuela y el riesgo de desaplicar las Normas y Regulaciones nacionales para la fabricación, manipulación, almacenamiento y transporte de alimentos para el consumo humano," in *Red Defendamos la Epidemiologia Nacional. Alerta Epidemiológica.* ed J. F. Oletta-Lopez (Caracas: Sociedad Venezolana de Salud Pública), 1–2.
- Permanent Advisory Commission on Food and Nutrition in the Andean Area (1975). "Venezuela's specific priority strategies for the development of its food and nutrition policy," in *Proceedings of the First Meeting of the Permanent Advisory Commission on Food and Nutrition in the Andean Area* (Santiago: Permanent Advisory Commission).
- Pinto-Cohen, G. (1984). "Agricultura: revisión de una leyenda negra," in El Caso Venezuela: Una Ilusión de Armonía, eds M. Naím and R. Piñango (Caracas: Ediciones IESA), 500-537.
- Ramirez, G., Herrera-Cuenca, M., Vásquez, M., Landaeta-Jiménez, M., Hernández Rivas, P., Meza, C. R., et al. (2017). The Impairment of Food Patterns in Venezuela: Preliminary Results from the Latin American Study of Nutrition and Health (ELANS) –Venezuelan Chapter. J Acad Nutr Diet. 117:A97. doi: 10.1016/j.jand.2017.06.102
- República Bolivariana de Venezuela (2002). Ley de Semillas y Material para la Reproducción Animal e Insumos Biológicos. Available online at: https://www. asambleanacionalvenezuela.org/leyes/sancionadas/ley_de_semillas,_material_ para_la_reproducci%C3%B3n_animal_e_insumos_biol%C3%B3gicos# (accessed July 23, 2020).
- República Bolivariana de Venezuela (2008). Ley Orgánica de Seguridad y Soberanía Alimentaria. Available online at: http://www.fao.org/pgrfa-gpa-archive/ven/ ley_soberania.pdf (accessed July 23, 2020).
- Tapia, M. S., Puche, M., Pieters, A., Marrero, J. F., Clavijo, S., Gutiérrez, A., et al. (2017). "Food and Nutritional Security in Venezuela. The Agrifood Abduction of a Country: Vision and Commitment" in *Challenges and Opportunities for Food and Nutrition Security in the Americas: The View of the Academies of Sciences*, eds M. Clegg, E. Bianchi, J. McNeil, L. Herrera, and K. Vammen (Mexico: The Inter American Network of Academies of Sciences. The Federal Ministry of Education and Research. German National Academy of Sciences-Leopoldina), 566–607.
- Universidad Católica Andrés Bello (2020). Encuesta Nacional de Condiciones de Vida 2018-2020. Available online at: https://www.proyectoencovi.com (accessed August 18, 2020).
- World Food Program (2019). Venezuela Food Security Assessment Main Findings. Data Collected between July and September 2019. Available online at: https://reliefweb.int/report/venezuela-bolivarian-republic/wfpvenezuela-food-security-assessment-main-findings-data (accessed August 12, 2020).

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2021 Hernández, Carmona, Tapia and Rivas. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.