

Social vulnerability and the pandemic in Cuba: impacts on family food security from the sociology of risk

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Abstract: The current health situation, generated by the COVID-19 outbreak, has led to substantial impacts on local food systems on a global scale. Its consequences are marked by inequalities, variations in food prices, and instabilities in production and consumption that affect family food security (FFS) and cause situations of social vulnerability. Within this panorama, the sociology of risk constitutes an essential theoretical and methodological space to analyse the prevailing reality. The aim of this study, therefore, is to assess the relationship between social vulnerability and pandemics from the Cuban context, based on its impacts on FFS within the analytical framework of risk sociology. This study uses qualitative and quantitative methodology and scientific observational studies and surveys. Their results verified the existence of situations of social food vulnerability in the territorial area studied. The problems identified include the following: conflicts regarding the integration of food access, stability, availability and use within the family, the increase in practices or behaviours related to care, and gender inequalities during

lockdown. These problems or situations impact food security at the family household level, and social relationships have been exacerbated by the pandemic crisis.

Keywords: Cuba; family food security; FFS; SARS-CoV-2 pandemic; social vulnerability; sustainable development goals; SDGs.

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1 Introduction

Today's world faces a huge challenge in achieving family food security (FFS): the COVID-19 pandemic and its multiple repercussions on health and production. On a Latin American scale, this crisis has aggravated the conditions of food insecurity, a problem that affected 40.4% of the population in 2020 compared to 33.8% in 2019 (Torero, 2021). This phenomenon, closely linked to the conditions of social food vulnerability, will impact the daily lives of many families, now aggravated by the outbreak of COVID-19 (Castanho et al., 2020, 2021; Celik Omeraga et al., 2021; Couto et al., 2021).

In this regard, the 2030 Agenda and its sustainable development goals (SDGs) establish that all countries and people must achieve more resilient ways of coping with social vulnerability to food insecurity and reduce its consequences in the domestic sphere. Under the premise of shared responsibilities, institutions, communities, groups, and families are committed to advancing a common agenda towards sustainable food systems. This agenda is based on the principle of 'leave no one behind' in order to guarantee the same opportunities for all people, regardless of their initial situation, ensuring that we all have the possibility to develop to our fullest potential (Bárcena and Prado, 2016).

Achieving this principle includes working on areas such as economic inequality, innovation, sustainable consumption, and food security. In this sense, research highlights the interrelation between SDG 2¹, 5², 10³, and 11⁴, considering that they currently constitute a global challenge since social food vulnerability is a problem that has affected many social groups during the health crisis.

To overcome the causes of this problem, the Food and Agriculture Organisation of the United Nations (FAO) suggests the need to establish a coherent framework between policies related to agricultural development and FFS (SAF) (FAO, 2020). This framework needs to promote the following:

- Institutional and political support for channelling and implementing investments, social safety nets, and access to insurance and land.
- The dissemination of information among agricultural communities on sustainable agriculture practices and early warning systems on the approach of adverse weather effects.
- Innovations that increase efficiency, inclusiveness, and resilience.
- The incorporation of nature-based solutions to increase resilience and sustainability.

Each proposal is important in the current context because they function as mitigation strategies for the impact of the pandemic in the agricultural sector. This would ensure the development of sustainable practices towards the reduction of situations of social food vulnerability. In this sense, the FFS constitutes an area susceptible to the consequences of COVID-19 that directly affect the economic activity of households, increasing their risk of social vulnerability. Therefore, our objective is to assess the relationship between social vulnerability and pandemics from the Cuban context, based on its impacts on FFS, within the analytical framework of the sociology of risk.

Contextually, our case study is the sovereign territory of Cuba. For this territory, the measures taken to reduce the incidence of the pandemic on household food security have been aimed at strengthening the family care system and protecting vulnerable groups

(VG). However, there are still weaknesses in social support networks, gender relations, and care practices that exacerbate social vulnerabilities to access safe food. Precisely in this context, the most vulnerable families suffer the consequences of this health crisis with greater intensity as, at times, their response capacity is insufficient.

Bearing in mind the Cuban context, the measures to guarantee food security in the face of the existing epidemiological scenario should be aimed, thus, on the one hand, at strengthening family social capital in terms of access to and use of food and, on the other hand, at achieving sustainable food sovereignty that meets the food needs and preferences of the entire population – especially the most vulnerable such as women, children, the elderly, people with disabilities, among others.

2 FFS in situations of social vulnerability: premises for a sociological debate

The historical development of food security has been marked by various situations associated with social vulnerability. This problem in the food field is influenced not only by the environmental context (droughts, earthquakes, floods, or diseases, to name just a few) but also by the economic transformations that generate conditions of insecurity in the livelihoods of families, groups and communities in terms of the consumption and use of food.

This conception of social vulnerability with regard to food shows the interrelationships that emerge between the natural factors of the environment and the economic factors of the social system in the configuration of the FFS as a complex system.

According to Pérez (1999) and Busso (2001), vulnerability is expressed in the level of risk faced by a family or individual when losing their assets and properties, where several factors that are related to food supply come into play. This perspective is not limited to natural or environmental factors as a source of food, but rather places its axis of analysis in the economic structures of said system. Under this evaluative prism, access to food depends on market relations, its dynamics, the goods and services that are exchanged, the fluctuation of food prices, the groups, institutions or economic actors that intervene in the modification of the market, in addition to other factors.

This conception is reinterpreted by Sen (1983) based on his theory of entitlements regarding food security. In fact, the author emphasises that it depends not only on production but also on access to food. The latter constitutes a fundamental right for all social groups, and if not exercised, we cannot speak of well-being. From this perspective, social food vulnerability focuses on the loss of the possibility of people and populations to act and make decisions in order to exercise fundamental freedoms – in this case, being well nourished (Sen, 1983).

Although this theoretical position provokes an interesting epistemic turn as a sociological phenomenon, the study of the underlying symbolic structures in natural and economic food supplies and the impacts of situations of social vulnerability in FFS is still insufficient. These situations generate forms of collective consciousness that enhance social and cultural practices concerning access to food.

The formal definition of food security from 1983 itself reaffirms this idea by introducing the concept of “(...) guaranteeing access for all people at all times, to a

sufficient quantity of food to maintain an active and healthy life". With this definition, a paradigm shift around food security is identified by incorporating the problem of access within the social and symbolic structures that can condition said accessibility.

This shows that food security at the macro and micro levels is not reduced to the number of goods and services available to meet or satisfy the food preferences of individuals, groups, and families in a given social context. Other factors (i.e., economic, environmental, cultural, epidemiological, among others) lead to social problems since not all families have sufficient assets and resources to overcome their situations of food vulnerability.

In this sense, this food security at the family level is conceived as the access of all people, at all times, to sufficient amounts of food in order to lead an active and healthy life. Therefore, essential elements are the availability of food and the possibility of purchasing it (Banco Mundial, 1986). This approach involves focusing on the family context from the food access variable, conditioned in practice by complex social, economic, and cultural vulnerability situations.

Within the family sphere, the sociological conception of social vulnerability is linked to the loss by household members of assets and resources destined to take advantage of the opportunities available in different socioeconomic settings to improve their well-being or prevent their deterioration (Katzman, 2000). Under this theoretical perspective, vulnerability results from conflicts between the macro-level related to the structure of opportunities and the micro-level related to the actors, their meanings, practices, or lifestyles (Filgueira, 2001).

The above-mentioned shows the importance of approaching the sociology of risk as a theoretical and methodological framework to understand the changes produced in the food environment in the face of diverse systemic effects. This sociological scope allows us to visualise the normative, structural, relational, and interpretive weaknesses that mediate the daily dynamics of many actors, who produce and reproduce vulnerabilities in their social and institutional ties.

3 Sociology of risk: theoretical perspectives on the relationship between FFS, social vulnerability, and pandemic

The COVID-19 pandemic is a biological, epidemiological, and social phenomenon that has revealed vulnerabilities and fragilities in health systems on a global scale. Its unexpected outbreak produced significant changes in the norms and practices of human groups concerning their ways of producing, accessing, buying, using, and consuming food.

Undoubtedly, the risk posed by this pandemic crisis is increasingly systemic and causes complex interactions between human, social, political, and economic systems (Mizutori and Hackmann, 2020). The 2019 Global Assessment Report on Risk notes that systemic risks emerge and become apparent when looked at in hindsight. These result from a series of social vulnerability situations that transcend the limits demarcated by human beings, be they institutional, geographical, disciplinary, or administrative (UNDRR, 2020). In general, risks do not manifest in isolation, but many of them are combined, for example, pandemics, droughts or floods, and food insecurity.

The systemic approach to risk highlights those vulnerabilities associated with states of helplessness and fragility at national, local, and family levels. Its theoretical and methodological connotation is located in the sociology of risk, strengthening Beck's (1996) theoretical contributions. For this author, the risks originate, for example, in the following situations:

- 1 Where systems of social norms fail regarding the promised security in the face of the dangers unleashed by decision-making.
- 2 When the established regulatory systems do not meet their requirements
- 3 Where there are different cultural perceptions (estimation and valuation) of consequences and dangers.

The above approach makes it possible to address the relationship between social vulnerability, food, and pandemic from the introduction of these elements – first, the failure or breakdown of social norms in light of emerging dangers (social vulnerability and pandemic) in shifting decision-making towards a greater FFS.

Based on this, the normative systems of food goods and services are fragmented from the structure of opportunities (state, market, and organisations) and the control of those practices that give rise to situations of food vulnerability. Finally, this normative rupture arising from inadequate collective decisions is conditioned by the family cultural capital (subjective perceptions or evaluations) built to overcome the social impacts of the pandemic on food access, stability, availability and use. Likewise, this social capital depends on the group or family trajectories that social actors experience, becoming socialised as ways of acting, feeling, and thinking in the complex family-environment relationship.

This perspective from Beck (1996) incorporates the loss of normative systems to regulate situations of social food vulnerability at the household level. Its causes are found, among other factors, in weaknesses associated with risk management that make it possible to reduce the impacts of COVID-19 in areas as sensitive as food safety. The failure of these norms in transforming social and institutional practices marks the problems of access that reduce the possibilities of all families to obtain healthy and nutritious food. Most (Latin America and the Caribbean) lack the resources that provide them with greater capacity to adapt to current food conditions and their post-pandemic stage.

In the family sphere, food security is affected, among other elements, by unemployment (closure of workplaces as a result of existing health circumstances), generating in many families situations of social vulnerability concerning safe access to food (Bárcena and Berdegué, 2020). They highlight the norms and habits regarding the use and distribution of food and the priority of caring for VG (older adults, children, pregnant women, people with disabilities, etc.) based on risk of contagion to COVID-19.

The previous demonstrates the need to apply new conceptual approaches to better understand risk management from a sociological perspective. This includes the analysis of systemic risks and incorporates approaches based on public policies that cover all sectors of society and geographic areas. In addition, it addresses governance as an essential variable in the study of social, economic, and food risks that converge in the relationship between social vulnerability, FFS, and pandemic.

4 FFS and social vulnerability: its impacts in times of COVID-19. Results for the specific situation of Cuba

The COVID-19 pandemic constitutes a severe problem in health and economic, social, and political terms. Its global impact is causing food insecurity from food shortages resulting from reductions and instabilities in international economic activity. However, this insecurity has its origins long before this global public health crisis, where inequalities in production, distribution, and marketing have generated situations of social food vulnerability.

The levels of asymmetry experienced by many territories in the world have led to the emergence of food gaps to cope with the pandemic. Hence, the poorest countries suffer more severely from this vulnerability in terms of food access, availability, use, and stability, significantly affecting family relationships (Mendelsohn and Dinar, 2009; Christiaensen and Demery, 2007; Nissanke and Thorbecke, 2007). At this level, agriculture constitutes a significant axis for developing family self-management practices. These allow food security and sovereignty to be strengthened through self-production of food to mitigate the adverse consequences of the pandemic and cushion the socioeconomic impacts generated by the aforementioned crisis. Consequently, new patterns of social adaptation or more resilient forms of production will be required in terms of food security. However, in the current context of economic decline as a result of COVID-19, the main challenge in achieving this security is to avoid the fragmentation of its dimensions to preserve the rights of all citizens and groups. For this, social actors must reorganise their ways of life to sustain family nutrition.

In general, the impacts of the pandemic on the dimensions of the FFS on a global scale are described in three essential elements:

- Irregularities in the performance of agricultural activities, the decrease of which conditions family income and produce an increase in food prices. This situation generates changes in eating patterns towards an unwholesome and less healthy diet causing malnutrition in families.
- The reduction of production levels at the local and national level, access to water resources, and the import capacity of the countries destabilise the functioning of production systems caused by due to environmental, economic, and social changes.
- The decrease in access transforms the livelihoods of many families in terms of income since most depend on agricultural activity. As a result, the family income is reduced due to productive instabilities caused by a decreased demand for paid labour for agricultural tasks, which affects their ability to purchase food.

In the case of Cuba, with the recent approval of the Food Sovereignty and Nutrition Education Plan (2020)⁵, the social policies adopted by the State are aimed at promoting, on the one hand, more inclusive local food systems that allow the diversification of food for the entire population, especially the most VG. And on the other hand, it encourages good nutritional practices from the different areas of socialisation (educational institution, community, and family).

This plan emerges within a complex health context that repercussions economic and social process at the macro and micro scales. Consequently, this is part of the concrete actions implemented by the Cuban Government to minimise the impacts of the

COVID-19 pandemic on the FFS. An investigation carried out in the Santiago de Cuba Municipality (Cuba) (2021) from the Department of Sociology of the Universidad de Oriente shows some of these effects at a practical level. Here it is possible to highlight limitations in the stability and availability of food due to reductions in economic activity; greater nutritional care is given, the increase in protection for VG, and the increase in unpaid work of women that implies not only food care but also shared management of access to food.

To validate the previous elements in this study, scientific observational studies and surveys were used as techniques, and were applied to a sample of 100 people (population of 510,037 inhabitants of the Santiago de Cuba municipality). The confidence level was 95.57% and a sampling error of 10%. This choice was made based on the characteristics of probability sampling. In particular, random sampling, where its fundamental condition is expressed in the idea that all individuals in the population have the same probability of being chosen to integrate the sample.

The objective of both techniques was to discover the most significant impacts of social vulnerability and the pandemic in the FFS. For this, four impacts were conceived related to family conflicts regarding food and social situations exacerbated in the context of the pandemic, cultural perception about FFS, as well as the reinforcement of social policies during this health crisis.

Considering the applied techniques, the following impacts were obtained in the FFS where links are established between different variables in contexts of social vulnerability and pandemic:

- The first impact is associated with the conflicts produced in the family space regarding access, availability, consumption, and food care (relationship conflicts and family practices of food security).
- The second impact addresses the social situations exacerbated by the pandemic that affect family behaviours to achieve safe access to food.
- The third impact refers to the cultural perception of men and women about FFS in times of COVID-19.
- The fourth impact is aimed at reinforcing social policies for state protection (mainly food) during the pandemic.

Regarding the first of these impacts, the results obtained show that of the 100 people surveyed, 50 consider care for VG as one of the behaviours adopted by the family under COVID-19 conditions. The preceding constitutes an oversized practice during situations of physical isolation since this group is the most susceptible to contagion because of vulnerabilities in health, care, protection, and nutrition. By linking this last element with the results of said behaviours, 23 (46%) of these 50 people expressed the emergence of conflicts at the domestic level between food tastes or preferences and the economic possibilities of families.

This impact shows that current epidemiological conditions have led to reductions in access to and stability of the food, a problem that affects the care of VG. All of this generates conflicts in family lifestyles since the current situation of physical isolation requires a greater consumption of food to satisfy the food preferences of different social groups in a context of economic and productive decline.

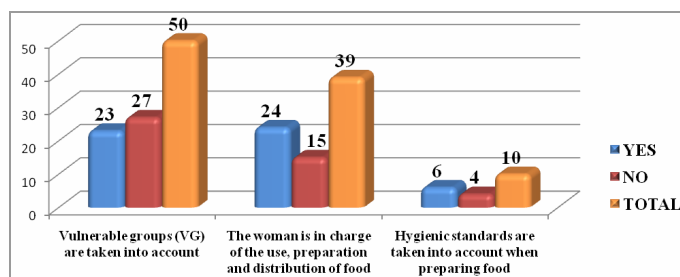
Likewise, 39 of those surveyed consider that during lockdown, women are responsible for food security at the household level. They engage in various unpaid actions regarding food care (use, preparation, and distribution of food). Within this group, 24 of them (61.5%) coincide with the above-mentioned conflicts. The circumstances describing women's role in the FFS demonstrate a greater participation of women in the construction of cultural food capital (tastes and preferences), affected by current health conditions. Similarly, the pandemic has had an impact on price volatility, making it challenging to fulfil said cultural food capital in households where women play a significant role (Table 1 and Figure 1).

Table 1 Conflicts (consumption-economic possibilities) and family eating practices

<i>Relationship between behaviours and conflicts</i>		<i>Conflicts between the difference in food tastes and preferences and the economic possibilities of complying with them</i>		
		<i>Yes</i>	<i>No</i>	<i>Total</i>
Behaviours adopted by the family	VG are taken into account	23	27	50
		46.0%	54.0%	100%
	The woman is in charge of the use, preparation and distribution of food	24	15	39
		61.5%	38.5%	100%
	Hygienic standards are taken into account when preparing food	6	4	10
		60.0%	40.0%	100%
	All meals are made daily	1	0	1
		100%	0.0%	100%
Total		54	46	100

Source: Authors' own research based on the questionnaires obtained in the Santiago de Cuba municipality (January, 2021)

Figure 1 Relationship between conflicts (food consumption-economic possibilities) and FFS practices (see online version for colours)



In this first impact, the conflicts between caring for VG to guarantee a healthy diet in pandemic contexts also stand out. Here 50 people highlight the production and reproduction of the behaviours mentioned in previous paragraphs. Of these, 29 (58%) consider that limitations also condition the conflicts that arise in the family space in achieving a higher quality of life in the face of the emergence of situations of social food vulnerability in the core activity.

Women continue to occupy positions of social inequity compared to men within the food area. As we have stated, the pandemic has widened the gender gaps in the FFS because of the conflicts that underlie family relationships regarding food care for different members of the household, especially groups in situations of social vulnerability.

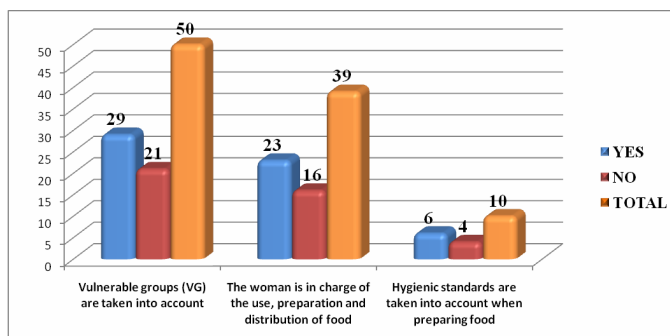
In this sense, 39 of those surveyed value that, during lockdown, women have an active contribution to the FFS expressed in the increase of care practices (distribution and use of food). Likewise, 23 (59%) of these people highlight the emerging conflicts in these care practices. It is difficult to guarantee these VG a healthy diet that makes it possible to achieve a family food culture in times of COVID-19 (Table 2 and Figure 2).

Table 2 Conflicts (VG-food care) and family feeding practices

<i>Relationship between behaviours and conflicts</i>		<i>Conflicts-between caring for VG and guaranteeing them a healthy diet</i>		
		<i>Yes</i>	<i>No</i>	<i>Total</i>
Behaviours adopted by the family	VG are taken into account	29 58.0%	21 42.0%	50 100.0%
	The woman is in charge of the use, preparation and distribution of food	23 59.0%	16 41.0%	39 100.0%
	Hygienic standards are taken into account when preparing food	6 60.0%	4 40.0%	10 100.0%
	All meals are made daily	0 0.0%	1 100%	1 100.0%
Total		58	42	100

Source: Authors’ own research based on the questionnaires obtained in the Santiago de Cuba municipality (January, 2021)

Figure 2 Relationship between conflicts (VG -food care) and FFS practices (see online version for colours)



Another interesting aspect of the relationship between pandemic and social vulnerability towards FFS is the change in the prices of goods and services derived from the economic paralysis to minimise the adverse effects of the epidemiological crisis. Undoubtedly, the reduction in social mobility and work activity influences this economic fluctuation. This

generates unforeseen consequences for production, distribution, and marketing, bringing price transformations in the production chain whose instability impacts the FFS.

This has an impact on food care for VG, who constitute a priority within the family amid the COVID-19 pandemic. This impact is shown in the conflicts (62%) to attend to said care, based on price fluctuations and the economic vulnerability (scarce assets or resources) of the families that limits the use of available goods and services. These variations, derived from fragmentations in the network of opportunity structure associated with the FFS, make it difficult to care for these groups according to their socio-demographic characteristics (age, health status, eating practices, among others).

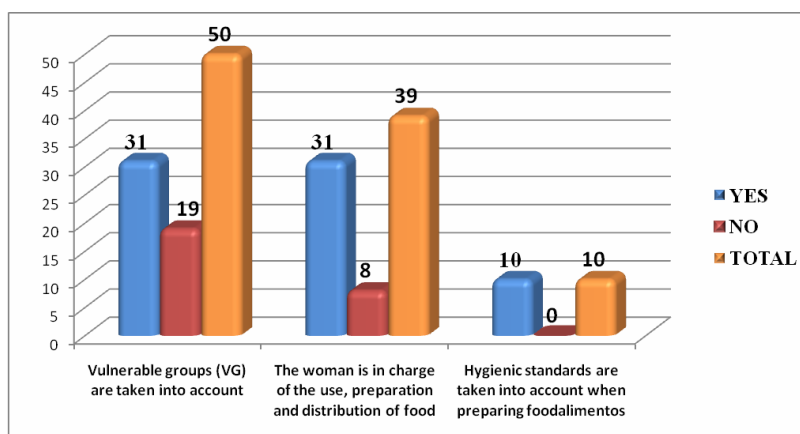
As shown in Table 3 and Figure 3, the behaviours that emerged at the household level reflect gender inequalities in the food area (79.5%). Here, women continue to carry out unpaid work in a context characterised by the market's instabilities, its prices, and the assets they possess to boost the FFS.

Table 3 Conflicts (prices-access to food) and family feeding practices

<i>Relationship between behaviours and conflicts</i>		<i>Conflicts-between the high price of food and the impossibility of purchasing it</i>		
	<i>Characteristics</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Behaviours adopted by the family	VG are taken into account	31	19	50
		62.0%	38.0%	100.0%
	The woman is in charge of the use, preparation and distribution of food	31	8	39
		79.5%	20.5%	100.0%
	Hygienic standards are taken into account when preparing food	10	0	10
		100.0%	0.0%	100.0%
	All meals are made daily	0	1	1
		0.0%	100.0%	100.0%
Total		72	28	100

Source: Authors' own research based on the questionnaires obtained in the Santiago de Cuba municipality (January, 2021)

Figure 3 Relationship between conflicts (prices-access to food) and family practices of food security (see online version for colours)

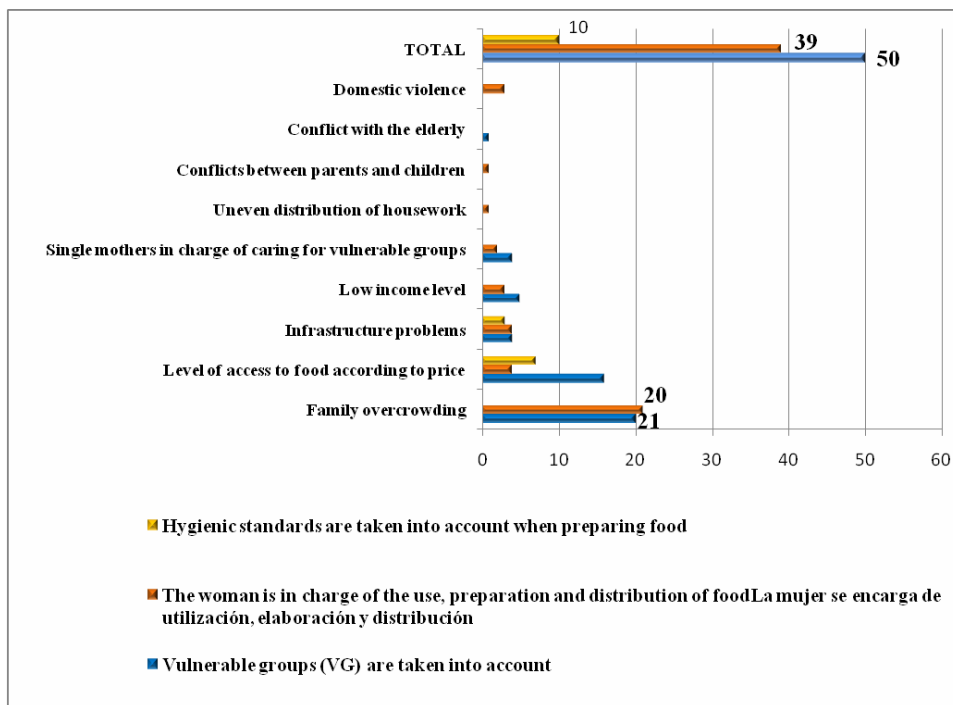


The second impact arising from the interrelationships between social vulnerability and pandemic addresses the various problems that colour the practices or behaviours of social actors regarding FFS. Some of these practices, such as caring for VG and unpaid work by women, are conditioned by situations of family overcrowding (40%) and the level of access to food (32%). Undoubtedly, within the current pandemic context, both problems are compounded not only by increased physical confinement at the household level but also by reductions in the network of local opportunities (goods and services).

In this sense, the links of these elements with the behaviour variable show that attention to these groups goes through the issue of habitability or coexistence, as various beliefs, values, relationships, and symbolic systems are interconnected in the same home. Although this social phenomenon is nothing new, overcrowding constitutes a substantial change in the way of life of many families where daily interactions are influenced by the social and economic effects of the pandemic.

This reality impacted the domestic work and access to food of many women in Cuba during COVID-19. The previous is explained through the surveys that express gender gaps and their links with the FFS. In this regard, 39 of those surveyed agree on the traditional role of women in said security at the household level. However, the most significant is that 21 (53.8%) of these people highlight family overcrowding as a problem that was exacerbated in the health crisis (Figure 4). This overcrowding turns into a situation of social vulnerability that includes the reinforcement of food practices to meet needs and preferences, each shaped by gender inequities in changing food systems.

Figure 4 Family practices of food security and problems that affect access to food (see online version for colours)



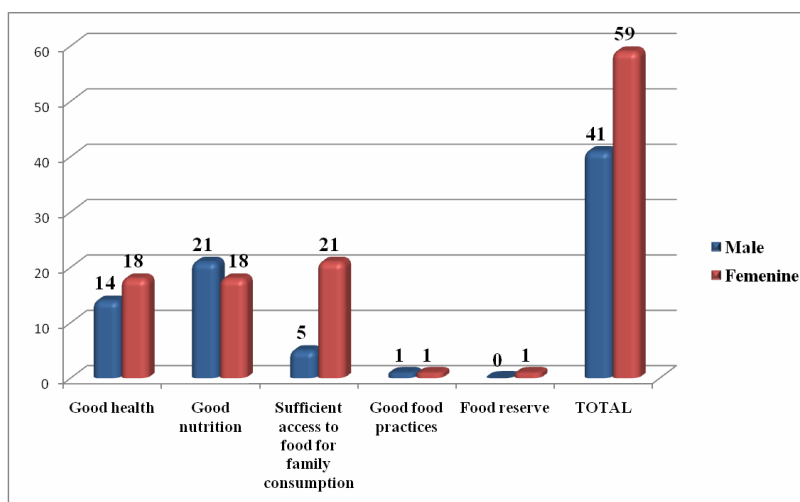
The third impact is linked to men's and women's perceptions of FFS. In this relationship, 59 women consider the indicators that define FFS as insufficient access to food (35.6%), good nutrition, and good health (30.5%), respectively. However, of the 41 men surveyed, 21 (51.2%) consider an excellent diet to be key to achieving an adequate nutritional status (Table 4 and Figure 5).

Table 4 Relationship between gender variables and elements of the FFS (see online version for colours)

Relation ↓	Elements of FFS					
	Good health	Good nutrition	Sufficient access to food for family consumption	Good food practices	Food reserve	Total
Male	14 34.1%	21 51.2%	5 12.2%	1 2.4%	0 0.0%	41 100%
Female	18 30.5%	18 30.5%	21 35.6%	1 1.7%	1 1.7%	59 100%
Total	32	39	26	2	1	100

Source: Author's own research based on the questionnaires obtained in the Santiago de Cuba municipality (January, 2021)

Figure 5 Relationship between the gender and elements of the FFS variables (see online version for colours)



This shows that the cultural representation of food security in both sexes is conditioned by an androcentric pattern legitimised by social custom. This pattern configures gender inequalities where the man is classified as the leading provider of food and income, as well as the one who suffers the greatest physical exhaustion due to work activities outside the home. This symbolic construction of food security shows the gender habitus that defines the position of men at the domestic level, whose reductionist thinking points to the need for adequate nutrition based on their roles or work activities outside the home.

Nevertheless, this androcentric stance on FFS makes women's work invisible since the work carried out by women is often not recognised as unpaid work, which also implies physical and psychological wear and tear. As we previously stated, this work increased for the vast majority of women in Cuba during lockdown. The most visible impacts point to care, self-care, and constant concern for food access. In general, the hegemonic cultural representation in gender relations mainstreams eating practices where inequalities are still reproduced daily, causing social vulnerabilities at the macro and micro levels.

Finally, the fourth impact focuses on the role of Cuban state policies to protect VG in terms of food during the SARS-CovV-2 pandemic.

Here, 60 of those surveyed highlighted that state policies are the fundamental means of access to food. Similarly, another point highlighted by 15 of those surveyed is self-employment. These results show the predominance of the measures adopted by state organisations to achieve greater access to food and guarantee an essential diet for the population in times of COVID-19.

Nevertheless, this does not disregard the role of other economic actors whose services provide alternatives to different social groups to satisfy their food needs. Both routes are conditioned by different social problems that are accentuated in conditions of physical isolation. Therefore, family overcrowding, the level of access to food, and infrastructure problems should be emphasised as the main problem areas that affect safe access to food in pandemic contexts (Table 5).

Table 5 Main pathways used by the family to access food and problem areas

<i>Relationship between pathways and behaviours</i>		<i>Problems affecting access to food</i>				
<i>Pathways used by the family</i>	<i>Types of pathways</i>	<i>Family overcrowding</i>	<i>Level of access to food</i>	<i>Infrastructure problems</i>	<i>Low income level</i>	<i>Total</i>
State		25	14	9	4	60
		41.7%	23.3%	15.0%	6.7%	100.0%
Self-employed		5	7	0	2	15
		33.3%	46.7%	0.0%	13.3%	100.0%
Help from other people		2	2	0	1	6
		33.3%	33.3%	0.0%	16.7%	100.0%
Pensioner (a) social assistance		5	1	1	1	8
		62.5%	12.5%	12.5%	12.5%	100.0%
Retirement		3	1	0	0	5
		60.0%	20.0%	0.0%	0.0%	100.0%

Source: Authors' own research based on the questionnaires obtained in the Santiago de Cuba municipality (January, 2021).

In general, despite the situations of social food vulnerability described, the actions taken by the Cuban state demonstrate its resilience to face the current health crisis. Some of these measures are strengthening the family care system through the delivery of food modules to VG and protecting those most susceptible to contagion (the elderly and

individuals with non-communicable diseases). Given the reduction in supply and lack of many products, other alternatives have been adopted at the local level (an example has been the delivery of these modules to the People's Councils and workplaces) to achieve an equitable distribution of food.

5 Conclusions

Based on the theoretical and empirical results obtained regarding the impacts of social vulnerability and the pandemic in the FFS and on a territorial scale (Santiago de Cuba, Cuba), the following conclusions are considered:

- One of the significant challenges in advancing towards sustainable development is to achieve an FFS capable of satisfying nutritional needs and food preferences during major health crises that place individuals, groups, families, and territories in situations of food vulnerability.
- Within this complex panorama, the sociology of risk has a fundamental role in analysing the interrelationships established between social vulnerability and pandemic from their impacts on the FFS. This sociological discipline, still under scientific construction, provides a theoretical framework that integrates the social and cultural dimensions of both phenomena from a complex conception of risk. Likewise, it introduces theoretical positions that make it possible to study the links between access to food and social vulnerability from the current situations of COVID-19.
- From the Cuban perspective, the outbreak of this health crisis has conditioned the programs that are carried out to comply with social policies on food security. This conditioning generates impacts on a local scale (in the case of Santiago de Cuba). Examples include food conflicts produced or reproduced in the family space, the emergence of heightened food practices in times of confinement, gender gaps that exacerbate the cultural perception of men and women about the FFS, and the reinforcement of public actions in matters of state protection (food) during the pandemic.
- However, Cuba has taken steps towards mitigating the negative impacts of this pandemic, which include adopting strategies to meet the needs of food access, use, and consumption of families in situations of social vulnerability. These measures achieved some actual results such as the reduction of contagion to COVID-19 at the territorial level, greater attention provided to VG through the implementation of social and community support systems, and the adoption of strategies in the family care system, strengthening it through actions more focused towards individuals and groups in situations of social food vulnerability.

Finally, this study could also serve to efficiently manage public policies on food safety. Firstly, it analyses the family environment as a significant area of social relations where meanings, practices, and norms associated with food consumption and use are constructed. Consequently, it introduces the gender perspective, vulnerability, and the effects of COVID-19 in the analysis of the FFS, all of which constitute essential elements within the design and evaluation of these policies. These aspects generate research lines of interdisciplinary interest for other national and international contexts – for example, food risk and its links with health and food care in contexts of social vulnerability.

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References

- Banco Mundial (1986) *La pobreza y el hambre. Temas y opiniones sobre la seguridad alimentaria en los países en desarrollo*, Washington, D.C.
- Bárcena, A. and Berdegué, J. (2020) *Cómo evitar que la crisis del Covid-19 se transforme en una crisis alimentaria*, Naciones Unidas: Comisión Económica para América Latina y el Caribe (CEPAL) y la Organización de la Naciones Unidas para la Alimentación y la Agricultura (FAO) [online] <https://www.cepal.org/es/publicaciones/45702-como-evitar-que-la-crisis-covid-19-se-transforme-crisis-alimentaria-acciones> (accessed on 12-11-2021).
- Bárcena, A. and Prado, A. (2016) *Agenda 2030 y los Objetivos de Desarrollo Sostenible. Una oportunidad para América Latina y el Caribe*, Naciones Unidas, Santiago [online] <https://www.cepal.org> (accessed 12 December 2021).
- Beck, U. (1996) 'Teoría de la sociedad del riesgo', in Beriain, J. (Ed.): *Las consecuencias perversas de la modernidad. modernidad, contingencia y riesgo*, pp.201–222, Anthropos, Barcelona, España.
- Busso, G. (2001) *Vulnerabilidad social: nociones e implicancias de políticas para Latinoamérica a inicios del siglo XXI*, Comisión Económica para América Latina y el Caribe (CEPAL), Santiago de Chile.
- Castanho, R.A. Couto, G., Pimentel, P. and Sousa, Á. (2021) 'Regional tourism strategies during the Sars-Cov-2 outbreak and their impacts on Azores tourism businesses', *Polish Journal of Management Studies*. Vol. 24, No. 2, pp.88–101, DOI: 10.17512/pjms.2021.24.2.06.
- Castanho, R.A., Couto, G., Pimentel, P., Sousa, Á., Carvalho, C. and Graça Batista, M. (2020) 'The impact of SARS-CoV-2 outbreak on the accommodation selection of Azorean tourists. A study based on the assessment of the Azores population's attitudes', *Sustainability*, Vol. 12, p.9990, DOI: 10.3390/su12239990.
- Celik Omeraga, N., Ozrecberoglu, N., Yilmaz Genc, S. and Castanho, R.A. (2021) 'Covid-19 pandemic period reflections on problems experienced in distance education at the primary school level: teacher opinions', *World Review of Science, Technology and Sustainable Development (WRSTSD) Special Issue on: CONCOVID 2020 The Global Economy, The Tourism Sector and Sustainable Development*, ISSN: 17412242, DOI: 10.1504/WRSTSD.2021.10037379.
- Christiaensen, L. and Demery, L. (2007) 'Down to earth: agriculture and poverty reduction in Africa', *Directions in Development Poverty*, No. 38781, Banco Mundial, Washington, D.C.
- Comisión Económica para América Latina y el Caribe (CEPAL) (2021) *La pandemia de enfermedad por coronavirus (Covid-19): una oportunidad de aplicar un enfoque sistémico al riesgo de desastre en el Caribe*, Naciones Unidas, Santiago [online] <https://www.cepal.org/es/publicaciones/46731-la-pandemia-enfermedad-coronavirus-covid-19-oportunidad-aplicar-un-enfoque> (accessed 20 December 2021).
- Couto, G., Castanho, R.A., Pimentel, P., Barreto Carvalho, C. and Sousa, Á. (2021) 'How SARS-CoV-2 crisis could influence the tourism intentions of Azores archipelago residents? A study based on the assessment of the public perceptions', *World Review of Science, Technology and Sustainable Development (WRSTSD) Special Issue on: CONCOVID 2020, The Global Economy, The Tourism Sector and Sustainable Development*, ISSN: 17412242, <http://dx.doi.org/10.1504/WRSTSD.2021.10038775>.
- Filgueira, C. (2001) *Estructura de oportunidades y vulnerabilidad social. Aproximaciones conceptuales recientes*, CIESU, Santiago de Chile.

- Katzman, R. (2000) *Notas sobre la medición de la vulnerabilidad social*, Universidad Católica de Uruguay, Serie Documentos de Trabajo del IPES, Montevideo.
- Mendelsohn, R. and Dinar, A. (2009) *Climate Change and Agriculture: An Economic Analysis of Global Impacts, Adaptation and Distributional Effects*, Edward Elgar Publishing, Cheltenham.
- Mizutori, M. and Hackmann, H. (2020) *De la crisis de Covid-19 a la oportunidad de repensar el riesgo, Ginebra, Oficina de las Naciones Unidas para la Reducción del Riesgo de Desastres (UNDRR)* [online] <https://www.undrr.org/es/news/de-la-crisis-de-covid-19-la-oportunidad-de-repensar-el-riesgo> (accessed 11 November 2021).
- Nissanke, M. and Thorbecke, E. (2007) *The Impact of Globalization on the World's Poor: Transmission Mechanisms*, Palgrave Macmillan, Basingstoke.
- Oficina de las Naciones Unidas para la Reducción del Riesgo de Desastres (UNDRR) (2020) *Integrating Disaster Risk Reduction and Climate Change Adaptation in the UN Sustainable Development Cooperation Framework*, Ginebra.
- Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO) (2020) *El estado de la seguridad alimentaria y la nutrición en el mundo*, <https://doi.org/10.4060/ca9699es>.
- Organización Internacional del Trabajo (OIT) (2021) *Observatorio de la OIT: la Covid-19 y el mundo del trabajo* [online] https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_767045.pdf&ved=2ahUKEwjDgvfkhz0AhUgRjABHW2sC_IQFnoECA0QAQ&usg=AOvVaw2m38622k6OsE_3CIAbpL9s (accessed 15 November 2021).
- Pérez, K. (1999) 'Vulnerabilidad y desastres. Causas estructurales y procesos de la crisis de África', *Cuadernos de Trabajo*, No. 24, pp.4–64.
- Sen, A. (1983) 'Los bienes y la gente', *Revista de Comercio Exterior*, Vol. 33 No. 12, pp.11–20 [online] <https://docer.com.ar/doc/x51c5xx> (accessed 20 October 2021).
- Torero, M. (2021) *Tercera Reunión Hemisférica de Ministros/as y Secretarios/as de Agricultura de las Américas*, Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO) [online] <https://www.fao.org/americas/noticias/ver/es/c/1394298/> (accessed 13 October 2021).

Notes

- 1 Zero hunger: end hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
- 2 Gender equality: achieve gender equality and empower all women and girls.
- 3 Reduction of inequalities: reduce inequality within and between countries.
- 4 Sustainable cities and communities: make cities and human settlements inclusive, safe, resilient, and sustainable.
- 5 Cuba's Food Sovereignty and Nutrition Education Plan were approved in July 2020. Said plan constitutes the national platform to achieve complete Food Security. It was carried out through participatory activities with gender and generational approach, considering the sustainable development goals.