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Why do famines still occur in the 21st Century? A review on the causes of extreme food insecurity

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Abstract

Why do famines persist in the 21st century, despite significant advances in agricultural productivity? Throughout human history, famines have been – and continue to be – among the harshest manifestations of destitution. They result from the exacerbation of human vulnerabilities caused by the synergistic interaction of multiple anthropogenic and natural determinants. Famines are humanitarian emergencies that sharply increase mortality and/or morbidity among destitute families. This article reviews the academic debate on the causes of famines. The literature is organized into six main “families” of theories: (i) classical economic explanations (Smith’s and Malthus’ theses); (ii) food availability decline approach; (iii) entitlement approach; (iv) political perspectives (political regime and political accountability approaches); (v) new variant famine hypothesis; and (vi) systemic explanations. The article identifies the main gaps and limitations in this literature and highlights relevant development policy implications for reducing extreme food insecurity. The conclusion drawn is that the persistence of famines is attributable

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to ongoing mismanagement of significant triggers of extreme human vulnerability, both at the national and international levels. Extreme poverty, violent conflicts, economic shocks, climate change, governmental negligence, famine crimes, and pandemics contribute to the complexity of famine and require a comprehensive development strategy.

KEYWORDS

famine, hunger, starvation, poverty, food insecurity

1 | INTRODUCTION

Throughout history, famines have represented one of the harshest manifestations of human vulnerabilities and destitution. Even in the 21st century, despite the remarkable increase in global wealth and technological advancements, famines persist. In the current context, marked by a deterioration of food insecurity, we find ourselves moving away from the “zero hunger goal” of the sustainable development goals (SDG).

“Hunger” and “famine” represent distinct phases in the complex process of escalating extreme human vulnerabilities. Hunger, on the one hand, signifies the insufficiency of micronutrients in the body, often becoming a chronic issue in certain societies. On the other hand, famine is a humanitarian emergency characterized by extreme mass starvation, leading to increased mortality and/or morbidity among destitute families. Therefore, while hunger and famine are distinct, they are intimately connected concepts, with chronic and severe hunger often serving as a precursor to the emergence of famine.

In a historical context, rough estimates from the World Peace Foundation (2017) indicate that, since 1870 and until 2017, famines resulted in over 100 million deaths worldwide. However, a notable shift occurred in the 1980s when the trend started to decline. As we entered the 21st century, famines transformed into endemic problems, primarily affecting certain regions of Africa and the Middle East, which are also marked by violence and conflict. However, recent trends show an alarming escalation in famines since 2017. According to the latest *Hunger Hotspots* report by the Food and Agriculture Organization (FAO) and the World Food Programme (WFP), food insecurity is on the rise, with 18 hunger hotspots that are impacting 21 countries and territories, where parts of the population are facing “[...] a significant deterioration of already high levels of acute food insecurity, putting lives and livelihoods at risk” (FAO and WFP, 2024: 1).

This recent unfavorable shift in the famine trend prompts two significant concerns: how does chronic hunger escalate into famine, and why do famines persist in the 21st century? These pressing questions underscore the necessity of reviewing, organizing, and updating the extensive academic literature on this critical matter. Thus, the primary objective of this article is to undertake a review of the scientific discourse surrounding the causes of famine.

Following this introduction, Section 2 elucidates and distinguishes the key concepts of hunger and famine. Subsequently, Section 3 provides a brief overview of historical famine trends over the past two centuries. Section 4 reviews the specialized literature on the causes of famine, categorizing them into six primary “families” of theories: (i) classical economic explanations (Smith’s and

Malthus' theses); (ii) the food availability decline (FAD) approach; (iii) the entitlement approach; (iv) political perspectives (political regime and political accountability approaches); (v) the New Variant Famine (NVF) hypothesis; and (vi) systemic explanations. The concluding section provides a summary of the key findings drawn from this extensive academic review. This includes identifying the principal gaps and limitations within the existing literature, as well as highlighting pertinent development policy implications arising from the synthesis of knowledge.

2 | HOW DO WE DEFINE “FAMINE”?

There is no unanimous definition of “famine”, which is often confused with other related terms, such as “hunger” and “starvation”. Let us start by defining these last two concepts.

According to the FAO (Bultrini et al., 2010: 76):

“The term ‘starvation’ refers to the most extreme form of hunger; death by starvation is the end result of a chronic, long-lasting and severe period of hunger. It is the ultimate evidence of a continued right to food violation. To the nutrition community, the term ‘hunger’ includes ‘hidden hunger’ or having inadequate amounts of micronutrients in the body, i.e. iodine deficiency, iron deficiency, zinc deficiency, vitamin A deficiency, etc., and access to a healthy and balanced diet that leads to optimum nutrition status”.

On the other hand, the definition of “famine” is still contested¹. Rubin (2016: 11) specified that a famine is a “synergistic crisis” caused by multiple factors that results in “[...] a discrete event identifiable by an increase in mortality caused by mass starvation and diseases”. This definition has three important implications: first, that a famine has multiple (and reinforcing) causes. Second, that it is a “discrete” event (with an atypical occurrence) rather than a “normal” situation. And thirdly, that the rapid increase of deaths during famines is not only due to starvation, but also to the diseases caused by severe malnutrition.

A pertinent issue in the definition of famine is its link with starvation. On the one hand, Sen (1981: 39) asserted that “famines imply starvation”. Furthermore, he pragmatically argued that “[...] while there is quite a literature on how to ‘define’ famines, one can very often diagnose it – like a flood or a fire – even without being armed with a precise definition” (Sen, 1981: 39–40).

Nonetheless, the British social anthropologist Alex de Waal strongly criticized that academic approaches to famine overstress the link with starvation and death, which is “an aberration of intellectual history” (de Waal, 2005: 24). According to his historical review, the words “famine” and “hunger” were interchangeably used in English until the beginning of the 19th century, when the demographic debate led by Malthus (1806) originated the close association between famine and starvation. The problem with this “misconception” is that:

“[...] restricting the use of the word ‘famine’ to events that involved mass starvation unto death would effectively reduce the number of famines in the modern world to very few, if any. Almost all of the events we call ‘famines’ would have to be redefined as ‘dearths’” (de Waal, 2005: 24).

This criticism was supported by de Waal’s own field research in Darfur during the 1984–1985 famine. Darfurian people distinguished three different conceptions of famine: “those that involve

hunger, those that also involve destitution and social breakdown and ‘famines that kill’” (de Waal, 2005: 6). Therefore, according to this subjective analytical approach to the concept of famine (“from the perspective of the rural people who suffered it”, de Waal, 2005: 1), there are three levels of famine (in increasing order of gravity): hunger (undernourishment), destitution (extreme poverty), and mass starvation (death). Moreover, de Waal also stressed that the main cause of death in the Darfur famine was not starvation but “health crises” related to the lack of access to safe water and sanitation, and localized outbreaks of diseases (particularly measles and diarrhea). Consequently, de Waal (2007: 91) claimed that “African definitions and diagnoses of famine are typically made for adverse events that cause hunger and destitution, but not ‘mass starvation unto death’”.

Overall, given these contested conceptualizations, I suggest the following synthetic definition:

Famine results from a process of aggravation of human vulnerabilities caused by the synergistic interaction of multiple anthropogenic and natural determinants. It appears as a humanitarian emergency characterized by a sharp increase in mortality and/or morbidity among destitute families.

3 | A BRIEF HISTORICAL REVIEW OF THE INCIDENCE OF FAMINES

According to the World Peace Foundation (2017), the incidence of famines has steadily declined since the end of the 19th century and until the decade of 2010². Although there are important caveats regarding the quality and comparability of information (estimates of excess mortality caused by famine ostensibly vary across countries), famines are becoming a less lethal problem. In comparative terms, the global population has steadily increased, whereas deaths by famine have dropped since the end of World War II. To explore this relative decline in the “risk of death from famine”, we can inspect the ratio of global mortality from famines and the total world population (Figure 1). This trend fluctuated between 1870 and 1950 but has continued to decrease until 2010.

Famines have also evolved in geographical terms (Figure 2). According to de Waal (2018, based on data from the World Peace Foundation), since 1870, there have been five periods of famines with different geographical incidences³:

- (i) The first period occurred during European colonialism (1870–1914), where “the prelude and cause of this catastrophe was colonialism itself” (de Waal, 2018: 188). Coinciding with the Gilded Age of the European metropolis, these famines mainly affected Asian and, to a lesser extent, African colonial territories. Nevertheless, in America and Australasia, famines also occurred and were used as weapons of war to facilitate the expansion of colonial frontiers by subjugating, displacing and killing native people.
- (ii) The second period took place during the interwar years (1914–1950). These famines severely affected Europe, East Asia, and Africa. Many of these famines were provoked and used as weapons of war to subjugate or exterminate specific social groups (such as the *Nazi Hunger Plan*, 1941–1945). Others were direct consequences of totalitarian regimes imposing transformative economic projects at the expense of families who lived and produced food in rural areas (such as the *Holodomor*, the “Great Ukrainian Famine”, provoked by Stalin’s modernization plan from 1932 to 1933).

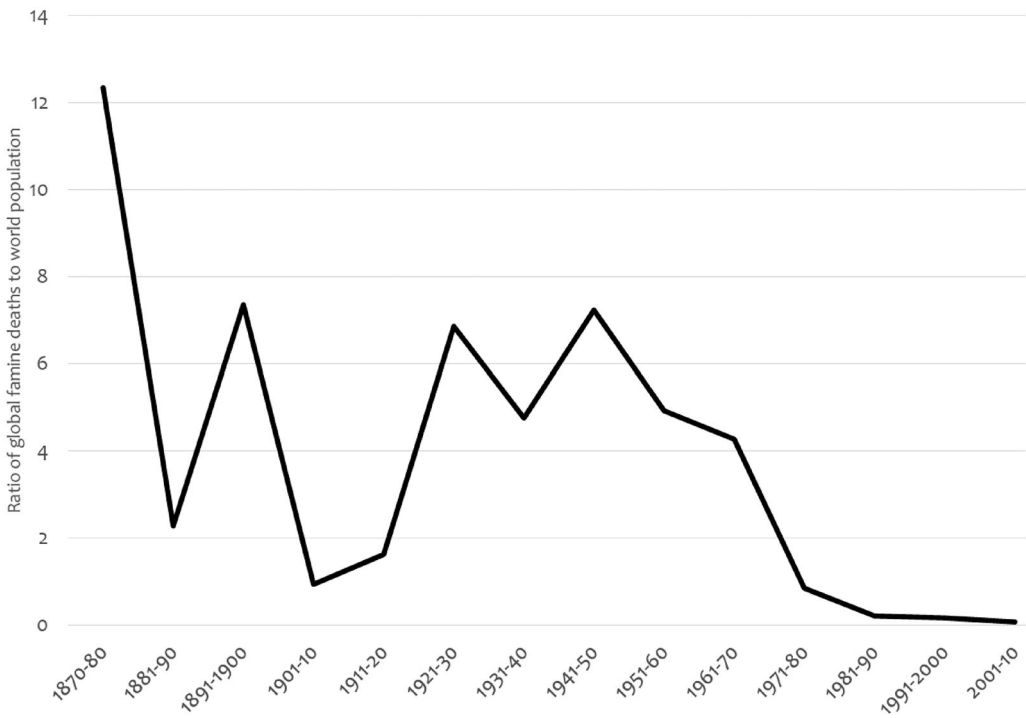


FIGURE 1 Global risk of death from famine by decade: 1870–2010. *Source:* World Peace Foundation (2017).

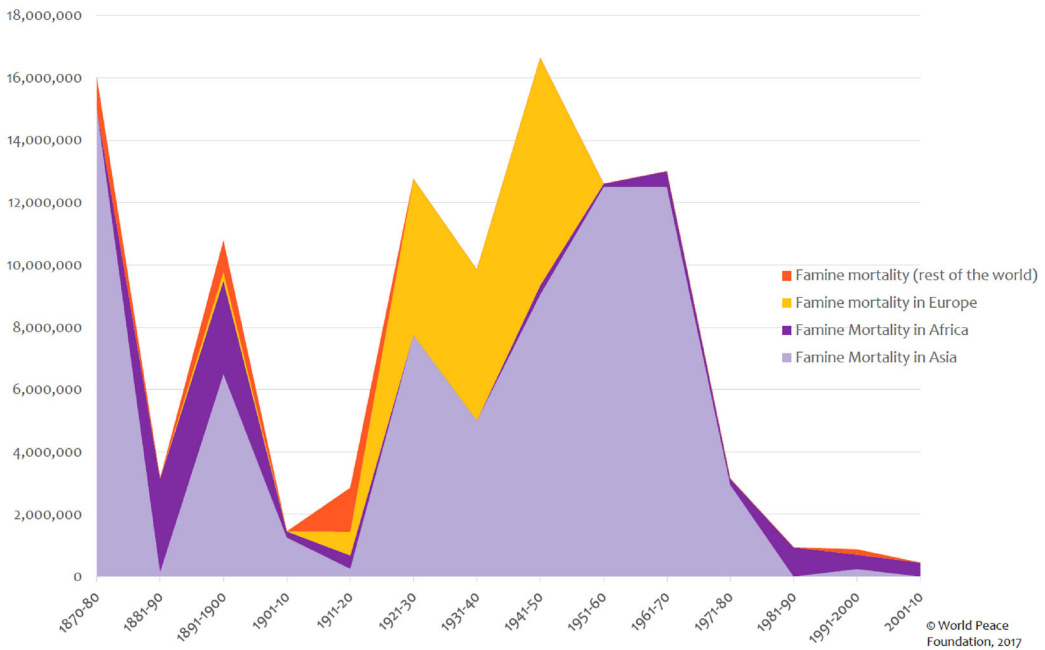


FIGURE 2 Global famine mortality by region and decade: 1870–2010. *Source:* World Peace Foundation (2017). [Colour figure can be viewed at wileyonlinelibrary.com]

- (iii) The third period took place between 1950 and 1986, when totalitarian regimes pursuing “titanic social engineering” (de Wall, 2018: 190) caused famines in Asia and Africa. The greatest famine in human history took place in China (due to Mao’s “Great Leap Forward”, between 1958 and 1962). Other famines occurred in Cambodia and North Korea.
- (iv) The fourth period (mid-1980s to mid-2010s) was characterized by a decline in the incidence and mortality of famines. The crises primarily took place in sub-Saharan African countries, mostly caused by conflicts, counter-insurgency strategies and State collapses (e.g., famines in Somalia in 1992 and 2011, Darfur between 2003 and 2005, and Ethiopia in 1999 and 2000).
- (v) Since 2017, according to de Waal (2018: 184), we are entering a new period “in which famines return in new guises”. The declining trend in the incidence and mortality of famines has been broken with recent famines in countries affected by conflicts and located in sub-Saharan Africa and the Middle East.

The consequence of this “truncated” downward trend is that “one of the great unacknowledged triumphs of our lifetime may be unravelling” (de Waal, 2018: 194). This worrying dynamic raises concerns about why famines still occur in the 21st century.

4 | THE ACADEMIC DEBATE ON THE CAUSES OF FAMINES

As already stated, the aim of this article is to review the ongoing scientific debate surrounding the multiple causes of famine. In this section, I classify the vast academic literature into six main “families” of famine theories⁴. Table 1 summarizes the key features of these different approaches.

4.1 | Classical economic explanations

The causes of famines have been analyzed since the inception of economics as a social science. There are two main classical contributions to this analysis: the Smithian and the Malthusian approaches. Their common feature is the market perspective to identify the main “supply cause” of a famine – either inadequate State interventions or excessive population growth.

4.1.1 | The Smithian thesis

In *The Wealth of Nations*, Adam Smith (1776: 526) categorically asserted that “[...] a famine has never arisen from any other cause but the violence of governments attempting, by improper means, to remedy the inconveniences of dearth”. More specifically, a well-functioning food market minimizes these “inconveniences” by facilitating inter-regional and inter-temporal arbitrages. The market evens out consumption during the year and disincentivizes hoarding grain for long periods as it eventually implies selling grain at a loss. Furthermore, during famines, the market minimizes deviations from equilibrium prices and, more importantly, allows the reallocation of food from surplus to deficit areas, thus minimizing the consequences of harvest failures.

Therefore, for Smith, the main cause of famines lies in market interventions, such as regulating food prices, controlling food trade, and forcing suppliers to sell their stock of grain, to name a few examples. The obvious policy recommendation for addressing these distortions that contribute to famine is to ensure the free functioning of the food market.

TABLE 1 Main features of the different approaches explaining famine.

Famine theories	Specific approaches	Factor(s) explaining famine	Policy recommendations	Prominent contributions
Classical economic explanations	Smithian approach	Obstacles to the free functioning of the food market	Guarantee free functioning of the food market	Smith (1776)
	Malthusian approach	Excessive population growth in relation to each country's capacity to produce food	Population control and letting the famine restore the population equilibrium	Malthus (1806)
Food availability decline (FAD) approach		Emergence of disruptive events (droughts, floods, etc.) that sharply reduce the amount of food available to the population	Improve agricultural productivity, technological progress and Green Revolution	Brown (1975), Cox (1981)
Entitlements approach		Failure of the entitlements to access food	Restore the entitlement of vulnerable families to food; tackling the causes of poverty and vulnerability	Sen (1981), Drèze and Sen (1989), Devereux (2001)
Political explanations	Political system approach	Absence of democracy and free press	Strengthen democracy and free press	Sen (1999, 2009), de Waal (1997), Rubin (2009, 2010), Plümper and Neumayer (2009), Burchi (2011), Rossignoli and Balestri (2018)
	Political accountability approach	Lack of accountability of the government	Strengthen political accountability and prosecute famine crimes	Ati (1988), Macrae and Zwi (1992), Keen (1994), de Waal (1997, 2018), Howe (2007), Tyner and Rice (2016), Gooch (2017), Conley and de Waal (2019), Kasahara and Li (2020), Runge and Graham (2020), Hågerdal (2023)

(Continues)

TABLE 1 (Continued)

Famine theories	Specific approaches	Factor(s) explaining famine	Policy recommendations	Prominent contributions
New variant famine (NVF) hypothesis		HIV/AIDS (in conjunction with other famine triggers)	Increase resilience levels of HIV/AIDS affected families and ensure universal access to anti-retroviral treatment	De Waal and Whiteside (2003), Devereux and Tiba (2007), de Waal (2007, 2017), Gibbs (2008), Naysmith et al. (2009), Mason et al. (2010), Ansell et al. (2016)
Systemic explanations		Multiple anthropogenic and natural causal factors	Multiple interventions to simultaneously reduce the vulnerability to famine. Strengthening resilience, enhancing political advocacy and political accountability.	De Waal (1990), Howe (2018)

Source: Author's elaboration.

This theory was not empirically proven by Smith himself, and many researchers consider that it is excessively optimistic as “full protection against famines appears well beyond the grasp of the market” (Rubin, 2016: 28). The main problem is that Smith neglected the importance of “market failures”, such as the existence of imperfect information and the lack of sufficient infrastructure, which result in the creation of food monopolies and oligopolies that distort free competition. These limitations motivated Amartya Sen to analyze the market failures that explain the emergence of famines, as I will discuss further below. According to Sen (1981: 161) the Smithian approach is:

“[...] concerned with efficiency in meeting a market demand, but it says nothing on meeting a need that has not been translated into effective demand because of lack of market-based entitlement and shortage of purchasing power”.

Furthermore, Sen argued that market mechanisms tend to take food away from starving areas (where households cannot afford to buy food) and transfer it to those areas that are not affected by starvation (where people do have the capacity to purchase food), thus aggravating the crisis – and contradicting Smith’s foresight.

An interesting empirical refutation of Smith’s explanation of famine was performed by Ó Gráda (2005). He studied four European famines that took place between the 17th and 19th centuries: two French famines (1693–1694 and 1708–1710), the Great Irish Famine (1846–1852), and the Great Finnish Famine (1868)⁵. Ó Gráda tested whether markets in France, Ireland, and Finland (during their respective famines) worked according to the “law of one price”. He ran an error correction model and found evidence to verify that food markets were well-integrated both during normal years and during famine episodes. The estimations also rejected the hypothesis that hoarding grain was more common during famines than during normal years. Ó Gráda’s main conclusion was:

“[These famines] represent cases in which the catastrophic nature of harvest failures overwhelmed functioning markets. Any blame incurred by the state would be for inadequate entitlement transfers from rich to poor, not for undue meddling with food markets” (Ó Gráda, 2005: 165).

4.1.2 | The Malthusian thesis

The British reverend and economist Thomas Robert Malthus argued that famines are the consequence of food shortages due to excessive population growth. In the consecutive editions (and reformulations) of his *Essay on the Principles of Population*, Malthus (1806) explained that the world population tends to grow “in geometric progression”, while the “means of subsistence” (referring mainly to food) grow “in arithmetic progression”, thus irremissibly generating periodic famines, wars and epidemics (considered by Malthus as “positive checks”) that dramatically reduce the population to adapt it to the level of food supply. Malthus also identified other “preventive checks” (such as chastity and celibacy), which lower the birth rate and thus prevent the emergence of population crises. The resulting policy recommendation of Malthus was letting the famine restore the population equilibrium.

However, this conception of famine as a market problem associated with the scarcity of the food supply was early contested. Among others, Karl Marx (1867) argued that scientific and technologi-

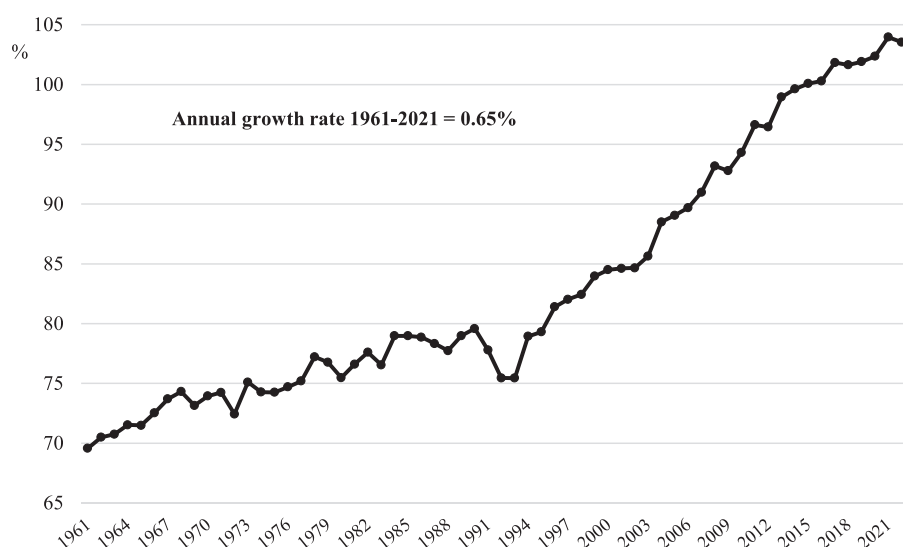


FIGURE 3 World *per capita* agricultural production, 1961–2021. Note: Gross *per capita* Production Index (2014–2016 = 100). Source: FAO (2024).

cal progress allowed the exponential growth of resources, especially food, thus breaking Malthus' irremissible rule. In fact, Figure 3 shows the overall increase of the world *per capita* agricultural production between 1961 and 2021, which has experienced an annual growth rate of 0.65% in these 60 years. Moreover, it seems that “contemporary” famines have not significantly constrained population growth, as Devereux (2000) proved with a historical analysis of various famines occurring during the 20th century, thus refuting Malthus' thesis.

Overall, the weakness of the Malthusian approach lies in its *ceteris paribus* assumption, especially in relation to technology, which has gradually improved over time, hence raising aggregate agricultural productivity.

4.2 | FAD approach

This explanation also focuses on the supply side of the food market. Sen (1981: 57) originally named it the FAD approach because it suggests that famines are determined by a temporal scarcity of food in particular areas. This scarcity is usually caused by natural disasters (such as floods, droughts, and volcanic eruptions) but also by “man-made disasters” (violent conflicts, unsound economic policies, inadequate infrastructures, etc.). Therefore, according to this approach, a reduction in the level of food *per capita* is both a necessary and a sufficient condition for the emergence of a famine.

In contrast with the pessimistic prediction of Malthus, the FAD approach offers an optimistic solution to famines, which consists of increasing the capacity to produce food (i.e., improving agricultural productivity), relying heavily on the technological progress of the so-called “green revolution”.⁶

An astonishing feature of the FAD approach is that it does not have a solid academic background; instead, as Rubin (2016: 31) suggested, it was “driven forward by the production promises of the Green Revolution”. Nevertheless, despite this lack of empirical support, it has been – and

remains today – a persuasive explanation of famines that has influenced the way that food aid was delivered by international donors during the 20th century. Its main contribution has been to stress the need to monitor food availability in each region (within countries), thus giving rise to the creation of “early warning systems” based on food supply indicators.

This approach is also connected with Natural Sciences in its attempt to predict natural hazards that may trigger food shortages in a context of increasing uncertainties due to global climate change. In this line, the early contribution of Brown (1975: 11) claimed that, given the constant increase in the demand for food and the supply limitations of the earth, “[...] one is struck with the sobering realization that it appears to be losing its capacity to feed itself”. And Cox (1981: 207) reviewed the climatic factors that trigger famines, claiming that “it is apparent [...] that famine has major ecological roots and impacts”.

However, the problem with this environmentalist version of the FAD approach is the confusion with the interpretation of the empirical analyses that suggest a causal relation between climate shocks and food shortages in developing countries. For example, the meta-analysis carried out by Challinor et al. (2007) of several studies of the sensitivity of agricultural productivity to climate change in Africa, using crop and climate models, revealed that climate shocks negatively affect crop productivity, potentially leading to food shortages. However, from these results, it is not possible to deterministically infer that climate shocks generate famines, as there is one missing link to be proven (the causal link between food shortages and famines).

In order to refute this deterministic view of climate change and famines, Slavin (2016: 438) conducted a historical analysis of several famines that have occurred since the 11th century and concluded that:

“To understand the relationship between the two variables [climate shocks and famines], it requires more than just establishing that most famines happened (and happen) during periods of climatic change or short-term weather shocks. It is far more important to know precisely why and how humans, human values, decisions and institutions transform climatically induced food shortages into full-fledged famines”.

Therefore, according to Slavin (2016), it is reasonable to understand that climatic shocks are connected to famines as they can create the conditions for food shortages, but the transition from a food shortage to a famine requires other important anthropogenic (institutional) and demographic factors. To support his argument, Slavin reviewed several famines in which climate shocks acted as initial triggers for food shortages, but where grain hoarding (a man-made decision intended to speculate with the prices of the temporarily scarce food resources) detonated, among other factors, the emergence of famines. This series of events (climate shock, hoarding and famine) took place during the Great European famine (1315–1317), the Great Irish famine (1845–1852), the Bengali famine (1942–1943), the Bangladeshi famine (1974–1975), the Sudanese famines (1984–1985, 1998, 2005–2006, and 2011–2012), and the 2002 Malawi famine⁷. As a conclusion, Slavin (2016: 442) claims that “[...] it is a series of complex anthropogenic and demographic factors, which, when taken together, represent that invisible beast that creates famines”.

Moreover, apart from its weak empirical support, the FAD approach also has relevant theoretical limitations in relation to its “implicit” assumptions. On the one hand, it assumes that famine-affected countries are totally closed economies, thus neglecting the existence of international food markets that can alleviate the episodes of food scarcity. Consequently, this approach is unable to explain why some countries severely affected by droughts do not suffer famines (e.g.,

Spain), while others do (such as the countries of the Horn of Africa). On the other hand, the FAD approach assumes that everyone within a country is equally affected by a famine and, thus, it is incapable of explaining why, during a food crisis, some social groups have better access to food than others do.

As Devereux (1993: 183) clearly stated, “drought causes crop failure, but vulnerability to drought causes famine”. That is to say, the FAD causality link between a disruptive event (a drought) and famine seems theoretically incongruent as it neglects the fundamental aspect of human vulnerabilities, which is the actual transmission belt with famine.

4.3 | Entitlements approach

The contemporary conception of famine is attributed to the Indian economist Amartya Sen, who received the Nobel Prize in Economics in 1998 for his contributions in this field. In his influential book *Poverty and Famines*, Sen (1981) conceived famines as “economic disasters” and not just as food crises. He analyzed four famines that took place in different developing regions: Bengal (India, 1943), Ethiopia (1972–1974), the Sahel region (1970s), and Bangladesh (1974). His main finding was that these famines occurred without “significant” reductions in food availability, from which he deduced and generalized that food crises are not essentially a supply problem but rather a demand problem associated with poverty and people’s lack of “entitlements” to access food markets:

“Starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there being not enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes” (Sen, 1981: 1).

Drèze and Sen (1989: 23) defined the “entitlement” of a person as “[...] the set of alternative commodity bundles that can be acquired through the use of the various legal channels of acquirement open to that person”. In particular, the entitlement of a person has two components: their “initial endowment” and their “entitlement mapping” (which consists of the set of alternative commodities that can be acquired with the initial endowments). Furthermore, in a market economy, there are five different ways of acquiring entitlements: production, trade, labor, transfer, and inheritance. Households combine these types of ownership to access food either directly (by producing food) or indirectly (by purchasing food). Although a well-functioning market is crucial to facilitate access to food, households that lack the appropriate entitlements can starve even when there is food available at the local markets. There is thus a double failure determining famine: the “entitlement failure” that affects the most vulnerable families and the “State failure” to protect those entitlements. In Sen’s (1981: 45) words:

“The entitlement approach to starvation and famines concentrates on the ability of people to command food through the legal means available in the society, including the use of production possibilities, trade opportunities, entitlements vis-à-vis the state, and other methods of acquiring food. A person starves either because he does not have the ability to command enough food, or because he does not use this ability to avoid starvation. The entitlement approach concentrates on the former, ignoring the latter possibility. Furthermore, it concentrates on those means of commanding food that are legitimised by the legal system in operation in that society. While it is

an approach of some generality, it makes no attempt to include all possible influences that can in principle cause starvation, for example illegal transfers (e.g., looting), and choice failures (e.g., owing to inflexible food habits)."

Therefore, according to Sen the main cause of famine is not the scarcity of food (the supply side of the problem) but the inability to translate the need for food into an "effective demand" of food because of the insufficiency of entitlements and purchasing power (Sen, 1981: 161). Moreover, access to food does not only depend on economic factors, but also on the political, social and legal characteristics of each society and the position of each family in that society.

Therefore, as Gasper (1993) explained, Sen's conceptual apparatus is a generalization of the "consumer theory". In this sense, the concept of entitlement is an extension of the micro-economic concept of "purchasing power", which refers to the "acquisition potential as a whole, not only via exchange" (Gasper, 1993: 683). Thus, the purchasing power of a person proceeds from his/her endowments, which are combined to either purchase food or produce food.

Sen's approach offers a more comprehensive explanation of famine than the previous approaches, as it distinguishes across different socio-economic groups and identifies the victims of famine. As Sen (1981: 162) stated, "the entitlement approach provides a general framework for analyzing famines rather than one particular hypothesis about their causation" (as is the case in the previous classical economic and FAD approaches).

Nevertheless, the entitlement approach has some limitations that are worth mentioning. De Waal (1990: 472–474) pointed out five "general criticisms" based on his in-depth analysis of several famines occurred in Africa:

Firstly, the entitlement approach considers famine victims as passive individuals. However, de Waal's research on Africa revealed that famine victims quite often actively resisted hunger and destitution in several skillful and resilient ways.

Secondly, the entitlement approach is mainly focused on the case of famine victims that are "assetless wage labourers", which was the dominant case in the Bengal famine studied by Sen. Nevertheless, de Waal argues that this is not the case in African famines, where victims have productive assets that they try to maintain.

Thirdly, de Waal criticizes the entitlement approach as being "overly economic". This perspective focuses on command over food through production and exchange, neglecting other social aspects that are crucial in the emergence of famine, such as social disruptions, migrations, and diseases provoked by food crises.

Fourthly, the entitlement approach overlooks the role of conflicts in causing famines. De Waal, drawing from his field studies, highlights violence as the primary driver of famine in Africa. As further elucidated by Rubin (2016), the entitlement approach needs to take into consideration the impacts of wars and legal system failures on famine vulnerability. According to Sen, entitlements are acquired through legal systems, but violent conflicts can severely damage both formal and informal institutions. Several mechanisms may contribute to famines during conflicts, including the looting and raiding of rural areas, inflationary pressure on food prices, labor shortages due to war casualties and army enlistments, food transfers to military groups, and the destruction of economic infrastructure. Moreover, some famines are driven by political interests and motivated by political struggles, deliberately causing "entitlement failure" orchestrated by political actors rather than market failures.

Fifthly, the entitlement approach overlooks the historical processes that, in each specific episode of famine, have led to the vulnerabilities ultimately culminating in famine. From de Waal's perspective, the entitlement approach is an "unhistorical" explanation of famine.

Apart from these five general criticisms, de Waal (1990) highlighted two “specific inconsistencies” in the entitlement approach that merit attention:

On the one hand, Sen excluded cases from his analysis where individuals “choose to starve” because they refrain from using their capacities to avoid famine. However, de Waal contends that, particularly in Africa, some people opt to starve rather than sell their vital assets (such as livestock and fields) to preserve their economic prospects.

On the other hand, Sen assumed a causal link between impoverishment, starvation, and death. De Waal contested this assumption, asserting that starvation is not the direct cause of famine mortality; instead, the outbreak of diseases and the increase in morbidity are the primary causes of death. For instance, during the Sahelian famine of the early 1970s, epidemic diseases like meningitis and measles triggered excess deaths that occurred after the period of starvation.

De Waal’s critique of Sen’s entitlement approach faced counter criticism from Osmani (1991), who argued that Sen was primarily concerned with explaining the “proximate causes” of famine, rather than delving into the famine “dynamics”. In response, De Waal (1991) countered Osmani’s points by emphasizing that, despite the usefulness of the entitlement approach in understanding many critical aspects of famine, it retains a “positivistic conception of famine as a natural kind” (de Waal, 1991: 605). This stems from the fact that the entitlement approach elucidates the causes of famine based on a limited set of empirical examples. De Waal (1991: 605) asserted the necessity of a more comprehensive theory of famine to overcome these limitations.

“[...] what is required is a heterogeneous approach, identifying empirical patterns to the causation of the various unpleasant aspects of famine. In many ways, ‘famine’ itself is such a misleading word that it should be dropped and replaced with a battery of different terms: dearth, severe dearth, ‘famine that kills’, mass starvation. All of these manifestations of famine may be regarded as part of a syndrome which affects poor and vulnerable populations, leading to epidemic destitution and often to widespread excess deaths”.

It is also worth noting the thorough analysis conducted by Devereux (2001), who improved the formulation of the entitlement approach. He reflected on four specific theoretical problems that Sen himself identified:

- (i) The issue of “choosing to starve”: As criticized by de Waal (1990) in a previous study, individuals facing famine may restrict their food intake to safeguard assets beyond the immediate crisis. Nevertheless, Devereux contends that this reasoning aligns with a “multi-period entitlement” approach. However, this approach falls short in elucidating the intra-household power dynamics influencing decisions regarding entitlements to food – for instance, determining which member of a family decides who goes hungry.
- (ii) The problematic link between famine, epidemics and death: Devereux contends that the “health crisis model” proposed by de Waal (1990) does not counter the causal analysis of famines rooted in entitlement decline. While acknowledging that heightened “exposure” to diseases may not be directly tied to hunger, if this exposure results from social disruption driven by food insecurity, then entitlement failure remains a plausible explanation for death.
- (iii) The problem of “fuzzy entitlements”: The entitlement approach is conceptually based on private property regimes, which is incompatible with the existence of communal resources (characterized by non-individual property rights). In general terms, according to Devereux (2001: 258–259), “the entitlement approach is effectively inapplicable in contexts where the

relationships between individuals and resources are mediated by (non-market) institutions”. Nevertheless, Drèze and Sen (1989) argued that entitlements do not consist only of rights of private ownership, as many governments provide their citizens with the right to use some commodities without owning them (i.e., public goods). For example, the free distribution of state-owned food should be conceived as a process of shifting entitlements through public policy. Therefore, the entitlement approach is also useful for explaining famines in socialist countries. For instance, Drèze and Sen (1989: 24) assert that “[...] in the Ukrainian famines, state policy was in fact positively geared to undermining the entitlements of a large section of the population”.

- (iv) The problem with “extra-entitlements transfers”: Devereux argues that the entitlement approach fails to elucidate violations of entitlements commonly observed during wars, such as requisitioning grain, raiding cattle, seizing food aid or directly using famine as a weapon of war. In broad terms, “[...] ‘complex emergencies’ expose most sharply the limitations of what is essentially an economistic analytical framework: its failure to engage with famine as both a social process and a political crisis” (Devereux, 2001: 259).

4.4 | Political explanations

The entitlement approach should be regarded as a partial explanation of famines that needs to be complemented with further analysis at the political level. As Keen (1994) explained in his book about the 1980s famine in Southwestern Sudan (the current South Sudan), the victims of famines are not only poor families who lack economic entitlements; they also lack political power, which, in turn, means that they do not have the capacity to exercise their “right to food” (as recognized in the 1948 *Universal Declaration of Human Rights*) or to put pressure on their governments.

In this respect, there are two political explanations of famine: the “political system approach,” which asserts that the absence (or low quality) of democracy leads to extreme food insecurity, and the “political accountability approach,” which posits that governments bear responsibility for famines.

4.4.1 | Political system approach

Sen (1999, 2009) also formulated the influential hypothesis that famines do not occur in democratic countries with a free press because, in a democracy, political leaders must be responsive to their citizens’ demands. This proposition underscores the critical role of democracy and political freedoms in preventing significant economic, political and natural disasters. De Waal (1997) further specified that an “anti-famine contract” between people and the government was more crucial than the mere presence of a democratic regime to prevent famines.

Despite the influence of this hypothesis, Sen did not empirically verify it and, consequently, several studies have analyzed the relationship between democracy and famines. There are two possible interpretations of this relationship: a “deterministic interpretation,” which views democracy as the definitive solution for famines (i.e., democratic systems always prevent famines), and a “probabilistic interpretation,” which considers that democracy lowers the intensity and magnitude of famines.

Some studies have carried out qualitative case-analyses which reject the deterministic interpretation by identifying counter-examples of famines that took place in democratic regimes, such

as the famines in Ireland (1845–1849), Bihar (India, 1966), Bangladesh (1974), Sudan (1986–1988), Malawi (2002), Niger (2005), and Madagascar (2021) (see, e.g., de Waal, 1997; Rubin, 2009, 2010).

Other studies have run quantitative regression analyses to test the probabilistic interpretation that democracy lowers the risk and the intensity of famines (such as Burchi, 2011; Plümper & Neumayer, 2009; Rubin, 2009, 2010; Rossignoli & Balestri, 2018). However, these regressions do not offer conclusive results, as some studies support Sen's hypothesis while others reject it (once other relevant explanatory variables are considered).

The reason for the inconclusiveness of this debate lies in two empirical difficulties: the limitations of the proxies used for capturing famines (as there are major discrepancies in terms of mortality across different indicators); and the difficulty of comparing across countries the “quality” of democracies and their different “sensitivities” against famines.

4.4.2 | Political accountability approach

Based on ethical deliberations, some researchers maintain that governments are responsible for famines. Therefore, “accountability” is the central concept of this approach. Rubin (2016: 74) offers a precise definition of accountability:

“[...] the responsibility or obligation of an individual or body in power to act in the best interests of society or face consequences [...] Accountability ensures actions and decisions taken by public officials are subject to oversight and that they respond to the needs of the community they are meant to be benefiting”.

The political accountability approach posits that famines are politically determined, stemming from political decisions. Therefore, the analysis of famines should concentrate on identifying the political actors who, directly or indirectly, contribute to their occurrence. This rationale led to the development of the theory of “complex political emergencies,” prompting numerous studies to employ inductive methodologies to capture the political variables driving famines and to demonstrate the existence of certain social groups that benefit from them.

The initial contributions acknowledged the significance of “bad policies” and violence in causing famines; aspects not adequately addressed by the entitlement approach. For instance, the seminal work of Ati (1988) examined the famine in Sudan between 1984 and 1985. The study concluded that, while drought and desertification were commonly identified as direct causes of famine, the primary triggers were government policies (both political and economic) along with other contributing factors, including “[...] the international setup, the refugee problem, and the behavior and practice of donor countries, international agencies and foreign NGOs working in relief and rehabilitation” (Ati, 1988: 284).

In a similar vein, Macrae and Zwi (1992) conducted an analysis of six African famines (Angola, Ethiopia, Liberia, Mozambique, Somalia and Sudan) that occurred in 1991 and 1992. Their conclusion pointed to the use of food as a “weapon of war by omission, commission and provision” (Macrae & Zwi, 1992: 299). Similarly, Keen (1994) revealed numerous political interests and beneficiaries associated with the famine in Southwestern Sudan during the 1980s, where the government obstructed the implementation of international policies against famine.

More recently, various studies have reinforced the significance of political factors as triggers for famines. For instance, Tyner and Rice (2016) asserted that the famine during the Cambodian genocide (1975–1979) was a “calculated policy” orchestrated by the government. Gooch (2017)

examined the Great Chinese Famine (1959–1961), coinciding with the launch of the great leap forward (the communist agricultural and industrial modernization plan), and concluded that it was a “politically-triggered famine” resulting from government negligence. Similarly, Kasahara and Li’s (2020) analysis of the same Chinese famine argued that it resulted from several erroneous political decisions, including the increased inflexibility of the grain procurement system and the rise in grain exports. Hägerdal’s (2023) examination of contemporary Syria concludes that it serves as a clear example of famine used as a weapon of war, noteworthy for occurring in urban areas, in contrast to famines in other conflict-ridden countries typically located in rural areas.

Moreover, Runge and Graham (2020) examined three contemporary instances of famines used as weapons of war. Firstly, the 19th century USA plan against native American tribes, involving the extermination of buffalos to induce starvation among the local people. Secondly, the *Nazi Hunger Plan* between 1941 and 1945, which caused starvation in agricultural areas of the Soviet Union, particularly Ukraine, as food was seized and sent to Germany and German troops. Lastly, the famine in Yemen during the 2010s, when Saudi Arabia and the United Arab Emirates, with support from the USA and Great Britain, blocked the main Yemeni port in the Red Sea, disrupting food imports and triggering a famine.

Furthermore, with an aggregated and long-term perspective, de Waal (2018) analyzed the “structural causes” and the “proximate triggers” of famines over an extended period of 140 years (between 1870 and 2010) and concluded that almost all famines have multiple causes, with the most relevant ones being related to political decisions and military tactics.

To comprehend famines as “outcomes” rather than “failures,” it is worth recalling Howe’s (2007) taxonomical analysis, which identifies various types of political processes leading to famine. Howe’s typology revolves around the concept of “priority regimes,” representing the set of concerns, both formal and informal, that are privileged in government decision-making. Howe (2007: 346) delineated the following six priority regimes that can either cause famine (the first five types) or prevent it (the last type):

- (i) *Neglect*: The government does not consider avoiding famine as a priority goal.
- (ii) *By-product*: Famine is an inadvertent by-product of another higher priority goal set by the government.
- (iii) *Trade-off*: The government explicitly prioritizes other goals instead of famine prevention.
- (iv) *Means*: Famine is a necessary means to a more relevant priority goal set by the government.
- (v) *Femicide*: The government actively seeks to provoke a famine.
- (vi) *Response*: The government prioritizes the fight against famine.

Conley and de Waal (2019) took a step further in the analysis of the political accountability of famine and proposed the term “starvation crimes” to capture those separate crimes, perpetrated over a long period, that eventually create mass starvation. Political leaders are accountable for these crimes in their pursuit of political, military, and economic goals where famine is used as a weapon of war and repression.

According to Conley and de Waal (2019), famine is both an “outcome” and a “process”. It is an outcome as it signifies the “deprivation of food unto death” (Conley & de Waal, 2019: 700). However, it is also a process of deprivation instigated by political actors impeding the access to means of sustaining life for specific social groups. Furthermore, Conley and de Waal (2019: 704–720) categorized nine political goals of mass starvation and provided several historical examples to illustrate them. These non-exclusive goals (in the sense that famines can result from the combination of several of these goals) are the following:

- (i) *Genocide*, where famine is directly used to exterminate members of a victim group. An example is the *Nazi Hunger Plan* (1941–1945).
- (ii) *Controlling a social group* to weaken its capacity to resist government policies. Resettlement camps during counterinsurgency, as seen in Ethiopia (1983–1985), are an example of these starvation crimes.
- (iii) *Gaining territorial control through sieges*, as witnessed in the siege of Leningrad (1941–1944) and extensively used in the Syrian war (e.g., the siege of Ghouta, 2013–2018).
- (iv) *Profiteering through famine*, when governments take advantage of conflicts for their enrichment. In Darfur (2003–2005), militias were “paid” through the expropriation of famine victims’ properties.
- (v) *Flushing out a population* from a remote area into an area controlled by the government. For instance, in Guatemala, between 1982 and 1983, the government targeted the rural and mountainous area of Maya, accused of supporting guerrillas. Attacks against villagers, destroying economic structures, agriculture and livestock reserves, forced locals to escape to the mountains, leading to mass starvation.
- (vi) *Punishing specific social groups* with policies of deprivation (such as sanctions, blockades, sieges and persecutions) to alter their political stances. This was evident in the siege of Sarajevo between 1992 and 1995.
- (vii) *Extreme exploitation of civilians* for their labor. For example, slave labor was extensively used by the Nazi regime between 1933 and 1945 against Jewish people, political opponents, and other ethnic and social minorities.
- (viii) *Provisioning soldiers* in a war at the expense of peasants, who have to provide food and other resources to the military. The Bengal famine of 1943 resulted from the British wartime economic policy, gathering resources from the Indian population to finance World War II by curtailing mass consumption.
- (ix) *Comprehensive societal transformation*, where governments implement policies that lead to harmful outcomes and persist in adhering to them over an extended period. An example is the attempt to modernize the agricultural sector in the USSR between 1930 and 1934, leading to the Ukrainian (*Holodomor*) and Kazakhstani famines.

All in all, the political accountability approach has the advantage of contributing to both revealing some of the main causes of famine and identifying which political actors bear the primary responsibility for its emergence. As Rubin (2016: 89–90) clearly pointed out:

“[...] the best point of departure for explaining how a famine can occur in a particular place (and not an adjacent place) and time (and not the year before) is, therefore, an approach where actors/organizations are included as the fundamental analytical entity”.

4.5 | The new variant famine hypothesis

Alex de Waal and Alan Whiteside (2003) originally highlighted a new trigger of famine that explained the increased food insecurity experienced in Southern Africa at the beginning of the 21st century: the HIV/AIDS epidemic. It was not a “single cause” proposal, but the identification of a relevant famine trigger not previously considered.

According to the New Variant Famine (NVF) hypothesis, HIV/AIDS – along with other famine triggers such as climatic shocks, poverty and mismanagement – has created a new variant of famine that increases the vulnerability of ill families to food insecurity and diminishes their livelihood coping strategies (i.e., diminishing resilience). De Waal and Whiteside identified four factors that explain the increased vulnerability to famine of HIV/AIDS-affected families:

- (i) The high levels of morbidity and mortality among ill adults explain the labor shortage of these families and the rise in the number of dependent members.
- (ii) The increased adult mortality of HIV/AIDS-affected families results in a loss of assets and skills that diminish their coping strategies against famine and destitution.
- (iii) HIV/AIDS increases the burden of care due to the need to assist both sick adults and orphan children.
- (iv) There are negative interactions between malnutrition and HIV/AIDS because ill people have higher nutritional requirements (thus they are more vulnerable to famine), and undernourished people are more susceptible to being infected by HIV.

An important feature of AIDS-related famines is the selective impact of the epidemic, as households affected by HIV/AIDS are more vulnerable to destitution and famine than healthy households (de Waal, 2017). Within local communities, there may even exist a minority that takes advantage of their neighbors' distress. For instance, as explained by de Waal (2017), if a family loses a relative due to AIDS and, consequently, loses their land, the new owners of this land may exploit it more productively than their previous owners, thus increasing overall food production in this specific region but at the expense of the destitution of the HIV/AIDS-afflicted family. The resulting effects are the exacerbation of inequalities due to the epidemic and the emergence of famine even when there is no overall decline in food availability in the region. As a result, "[...] in a chronically food insecure country, any increase in inequality ipso facto implies an increase in the number of very poor and food insecure households" (de Waal, 2017: 55).

Moreover, another challenging feature of the NVF is that extremely vulnerable families are statistically invisible, as it is not easy to geographically locate them (in contrast with flood, drought, and war victims) and to define them in political, economic, and/or ethnic terms.

De Waal (2007) concretized the NVF hypothesis by setting the following three sub-hypotheses:

- (i) People affected by HIV/AIDS constitute a new category of poor and vulnerable individuals, experiencing both direct and indirect impacts. The direct impact occurs when adults fall sick or die of AIDS. The indirect impact, which has a lasting effect, occurs when children are orphaned by AIDS, leading to reduced life opportunities. Additionally, older adults who lose their sons or daughters due to AIDS may face the additional responsibility of taking care of orphaned grandchildren, as they lose the family support previously provided by their children.
- (ii) The HIV/AIDS pandemic implies a failure in coping strategies when there is an additional shock, such as a climatic event or a violent conflict. In this case, vulnerability to famine is even greater, and the capacity for recovery is lower.
- (iii) A generalized epidemic of HIV/AIDS in a vulnerable country changes the "ecology of nutrition and infection", thereby affecting the incidence of child mortality.

De Waal (2007) used existing studies to test these three sub-hypotheses and concluded that there was indirect evidence to support the first two, but there was not sufficient information to test the third. However, the main limitation of this preliminary test was that none of the reviewed studies were specifically designed to test the NVF sub-hypotheses and, therefore, the empirical evidence was inconclusive. Consequently, de Waal (2007: 97) highlighted the need for three research advancements to rigorously test these hypotheses: first, adequate data that simultaneously measures households' incidence of HIV/AIDS and other negative shocks (such as droughts, floods, conflicts and commodity price crashes). Second, reliable mortality data. And third, studies on the long-term development prospects of children orphaned by AIDS.

There have been several attempts to empirically test the NVF hypothesis. For example, Devereux and Tiba (2007) conducted a quantitative case study of the 2001–2002 famine in Malawi, one of the African countries with the highest prevalence of HIV. Despite several methodological difficulties in measuring the simultaneous effects of famine and HIV/AIDS on vulnerable families, they confirmed the NVF hypothesis and concluded that HIV/AIDS was an exacerbating factor that, along with several climatic adverse shocks, caused a “multiple entitlement failure” resulting in famine.⁸

“Certainly, one crucial difference between the ‘non-famine’ in Malawi in the early 1990s [...] and the famine of 2001–2002—which followed a production shock of comparable magnitude—is the rapid rise in HIV-prevalence during the 1990s” (Devereux and Tiba, 2007: 164).

Nevertheless, Tiba (2011) later conducted a micro-level field research in a small village in the southern region of Malawi that qualified his previous results. The new study rejected both the FAD and the NVF hypotheses. On the contrary, the famine was the result of an unexpected and sudden shock, generated by the unforeseen price increase of maize that stemmed from the Government's decision to sell the Strategic Grain Reserve.

Gibbs (2008) also conducted a qualitative case study of the 2001–2002 Malawian famine and tested the three sub-hypotheses of the NVF. The evidence – although limited, as the author recognized – confirmed the first two hypotheses: households affected by HIV/AIDS showed new profiles of vulnerability to famine and were more vulnerable to destitution. However, the results were inconclusive with respect to the third hypothesis (increasing HIV prevalence during food crises). The novelty of this study lies in the revelation that female-headed families affected by HIV/AIDS exhibited greater vulnerability compared to male-headed families. Therefore, Gibbs emphasized the importance of gender inequities in the interaction between HIV/AIDS and famine.

Naysmith, along with de Waal and Whiteside, analyzed the case of Swaziland, a country that was severely affected by both HIV/AIDS and food insecurity at the beginning of the 21st century (Naysmith et al., 2009). They conducted a qualitative case study to test the four “based indicators” of the NVF hypothesis highlighted by de Waal and Whiteside (2003). They concluded that Swaziland was experiencing an NVF and proposed a simple policy recommendation that was considered “a necessary but not a sufficient intervention” (Naysmith et al., 2009: 258): ensuring universal access to anti-retroviral treatment for all those in need.

Mason et al. (2010) proposed a different, econometrical, approach, using district-level panel data from Zambia, a country where agrarian communities were simultaneously experiencing both recurrent droughts and an acute HIV/AIDS pandemic. They conducted panel data estimations for the period 1991–2005 to test two key predictions of the NVF hypothesis: (i) that HIV/AIDS

was causing a decline in agrarian livelihoods, and (ii) that HIV/AIDS was exacerbating the negative effects of droughts. They estimated several supply response models to assess the impact of HIV/AIDS-related morbidity and mortality, drought, and their interactions on various agricultural production indicators, including household crop output, crop output per hectare and area planted. The main discovery was that the increase in HIV/AIDS prevalence rates in Zambia significantly reduced the mean household agricultural production at the district level.

More recently, Ansell et al. (2016) conducted a qualitative case study in two villages in Malawi and Lesotho. They focused the analysis on the access to livelihood assets of AIDS-affected young people. The study supported the NVF hypothesis and stressed that HIV/AIDS was one among other relevant contributors to food insecurity, a conclusion that coincides with de Waal and Whiteside's original proposal and that was also stressed by Devereux and Tiba (2007).

4.6 | Systemic explanations of famines

The previous approaches can be understood as partial explanations of the various factors that may cause famine. The lack of integration among these theories justifies the development of "systemic approaches" that conceive famine as a complex and multivariate process of exacerbating human vulnerabilities, with both anthropogenic and natural determinants.

A first step in this movement was taken by de Waal (1990), who proposed a pioneering "overall theory of famine" based on his field studies in Africa. Seeking to address some of the limitations of Sen's entitlement theory, de Waal integrated three crucial issues related to the vulnerability process leading to famine: social disruption, coping strategies and violence. He put forward two systemic models of famine, one designed for peacetimes and the other for violent contexts.

The "integrated model of famine for peacetime conditions" identifies an external agent that initiates the vulnerability process, which can be either a natural disaster or an economic crisis (Figure 4). This external shock has two primary effects on vulnerable families: the loss of entitlements to access food (in Sen's terminology) and a "socio-economic threat" that affects the property of assets and claims, thus impacting the economic prospects of the families. Both negative effects contribute to "social disruption", manifested through purposive responses to famine, such as migrating to other regions, seeking out wild food, and traveling to other markets to sell assets. While coping strategies can mitigate social disruption (e.g., selling productive assets like livestock), these measures compromise the family's future economic means, leading to impoverishment. Ultimately, social disruption may give rise to a health crisis (e.g., crowding vulnerable people into poor houses with inadequate sanitation facilities), resulting in increased mortality. In non-violent contexts, humanitarian assistance can alleviate economic threats and, consequently, impoverishment.

The "integrated model of famine with violence" assumes that the vulnerability process is further aggravated during violent conflicts, as coping strategies become less effective and may even disappear (Figure 5). Consequently, entitlement failure and the threat to assets are strongly linked to destitution. Social disruption is also more acute in the presence of violence as it can lead to complete "social collapse", which, in turn, creates a more severe health crisis that raises mortality. This context is further aggravated when violence impedes the delivery of humanitarian aid to famine victims. The absence of humanitarian aid, the aggravation of destitution, and the lack of coping strategies may turn the situation into "frank starvation" (de Waal, 1990: 486).

All things considered, the first model proposed by de Waal integrates both the entitlement and the FAD approaches (understanding external shocks as non-necessary and non-sufficient

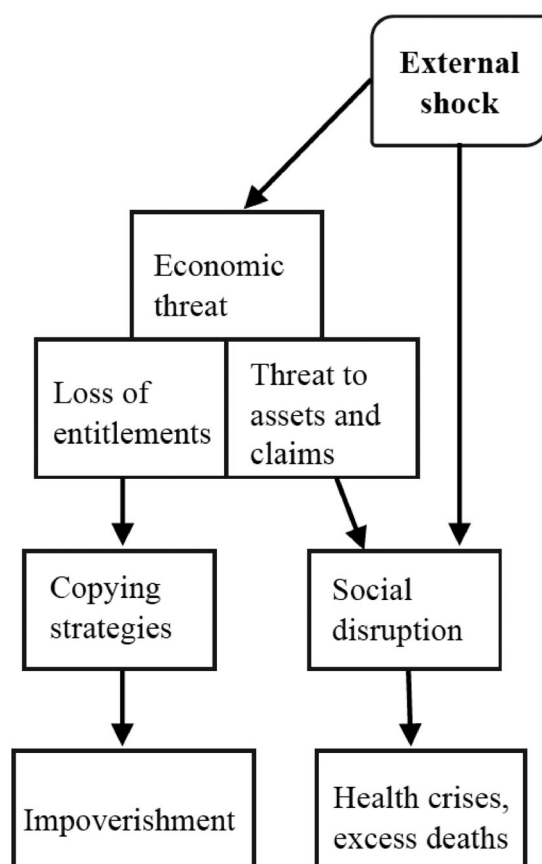


FIGURE 4 De Waal's integrated model of famine for peacetime conditions. Source: de Waal (1990: 486).

conditions for famine), whereas the second model integrates the entitlement and the political accountability explanations of famine, once the variable of violence is considered. Moreover, de Waal's two models can be further integrated into one systemic model that considers several potential triggers (external disruptive events, entitlement failure, and violent conflicts) of the vulnerability process that eventually leads to famine.

Howe (2018) proposed another systemic model that tried to capture the synergistic nature of famines by identifying the following five "basic elements" that characterize the process of formation, evolution, and decline of a famine:

- (i) *Pressure*: a famine emerges when a community experiences a deterioration in the level of food security. The trigger (pressure) is a disruptive factor that increases vulnerability. This factor can be politically induced (e.g., wars), naturally induced (floods and droughts), economically induced (food inflation), and/or socially induced (discrimination of marginal groups). The resulting level of pressure is a function of the severity of the disruptive factors and the vulnerability of the affected families.
- (ii) *Hold*: if the pressure continues over time, people's vulnerability further deteriorates. This could result from political holds (such as a regime refusing to receive international assis-

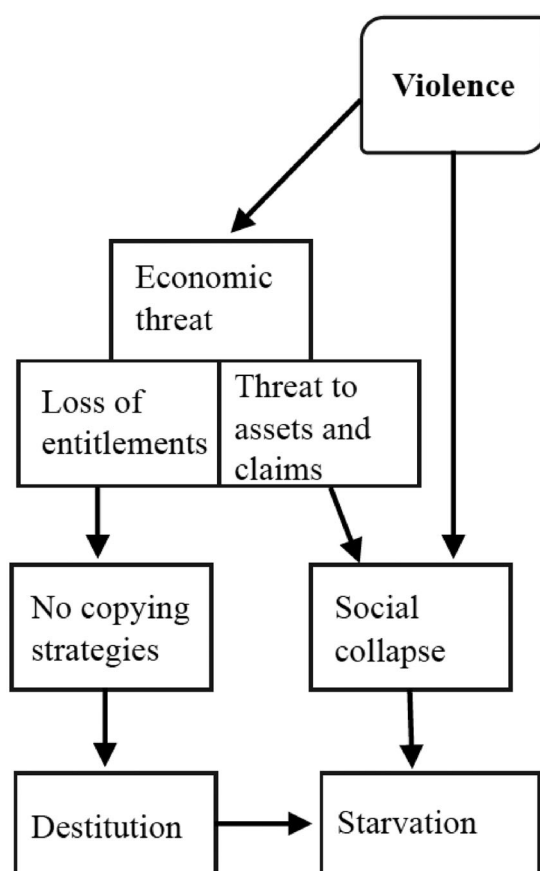


FIGURE 5 De Waal's integrated model of famine with violence. Source: de Waal (1990: 487).

tance) or economic holds (such as traders hoarding food to increase the price of their sales).

- (iii) *Self-reinforcing dynamics*: if the hold is sustained over time, it will give rise to self-reinforcing dynamics that further exacerbate the community's vulnerability.
- (iv) *Famine system*: famine eventually occurs when the aggravation of the vulnerability process results in an increase in mortality and morbidity. The term "system" stresses the synergistic nature of the process.
- (v) *Rebalancing*: famine declines as the underlying pressures, such as the end of a war or a drought, decrease, or disappear.

Howe (2018) applied this systemic approach to qualitatively analyze three famine episodes (Greece 1941–1942, Malawi 1949–1950, and Somalia 2011–2012) and one "truncated" famine (Bosnia and Herzegovina, 1992–1995). His inductive analysis described the formation phases of these distinct famines and explained why Bosnia and Herzegovina did not experience the predicted famine.

This systemic approach also has relevant policy implications. According to Howe (2018: 154), there are two ways to prevent famine:

“The first is to focus on addressing the specific elements of the model. For example, reducing a population’s vulnerability by strengthening resilience is one important way to limit the pressure. At the same time, a range of possible actions—from political advocacy to policy shifts— can help ensure that disruptive factors and holds are not permitted to remain in place for extended periods [...] The second is to use the model as a whole to enhance accountability for the creation of famine systems. By bringing greater clarity to the formation and evolution of these crises, the model may support these broader efforts and thereby help shift priorities to famine prevention in the long-term”.

5 | CONCLUSIONS

Hunger and famine represent distinct phases in a complex and multivariate process characterized by extreme human vulnerabilities and deprivations. Hunger is defined as chronic undernourishment, prevalent in certain societies, while famine constitutes a humanitarian emergency marked by a notable increase in mortality and/or morbidity. Although separate concepts, hunger and famine are intricately linked, with chronic hunger often serving as a precursor to famine.

Alarmingly, both issues – hunger and famines – are currently escalating. Global food security is deteriorating, deviating from the SDG’ “zero hunger” target. This is a concerning development, especially considering the positive trajectory observed during the first decade of the new millennium, marked by an absence of famines.

Given this worsening global context, it is crucial to contemplate two pertinent questions: Why do famines persist in the 21st century? And how can chronic hunger escalate into famine? To address these inquiries, this article reviews the academic literature on the causes of famine. The primary finding underscores that no single theory provides a comprehensive and universal explanation for the causes of famine applicable to every food security crisis, regardless of its location or timeframe. Conversely, some of these theories offer complementary insights that, when integrated, contribute to understanding the intricate process of human vulnerabilities culminating in famine.

This comprehensive review categorizes the extensive literature on famine determinants into eight distinct theories or explanations, each emphasizing different triggers and policy recommendations to alleviate or minimize extreme food insecurity:

1. *Smithian approach*: Attributes famines to obstacles hindering the free functioning of the food market, placing the origin on the supply side. The policy recommendation is to ensure an unimpeded market, eliminating barriers to food trade.
2. *Malthusian approach*: Asserts that famines result from excessive population growth relative to a country’s food production capacity. The main policy recommendations involve population control and allowing famines to restore population equilibrium.
3. *FAD approach*: Suggests that famines occur due to disruptive events such as droughts and floods, reducing available food. Policy recommendations focus on enhancing agricultural productivity and technological progress through initiatives such as the green revolution.
4. *Entitlement approach*: Explains famines as a consequence of the failure of entitlements to access food, emphasizing the demand side. Policy recommendations involve restoring entitlements for vulnerable families by addressing poverty and vulnerability causes, with short-term

measures such as cash-for-work and cash-aid programs (instead of food-for-work and food aid programs).

5. *Political system approach*: Links the absence (or low quality) of democracy and free press to the emergence of famines, advocating for the promotion of democracy and political freedoms to prevent crises.
6. *Political accountability approach*: Views famines as “man-made disasters” resulting from governmental lack of accountability. Policy recommendations include strengthening political accountability at both national and international levels, and prosecuting “famine crimes”.
7. *NVF hypothesis*: Posits that HIV/AIDS, along with other triggers, creates a new form of famine where families affected by illness face increasing vulnerability. Policy recommendations involve increasing resilience among affected families and ensuring universal access to anti-retroviral treatment.
8. *Systemic approach*: Overcomes single-factor explanations by conceptualizing famine as a synergistic process driven by multiple anthropogenic and natural factors. Policy recommendations include interventions to reduce vulnerability, strengthening the resilience and economic prospects of vulnerable families, advocating political changes, and enhancing government accountability. Health-related measures include improving access to safe water, sanitation, hygiene, essential medicines and vaccines.

After more than two centuries of debate on the causes of famine, there are still some limitations and gaps in this literature. Four relevant limitations are:

- (i) As originally criticized by de Waal (2005), famine approaches do not consider the historical processes that, for each specific episode of famine, created the vulnerability conditions leading to famine. Hence, the explanations of famine are, to a certain extent, “unhistorical” and need to be complemented with a historical perspective.
- (ii) The scarcity of disaggregated data clearly limits the prospects of carrying out quantitative causal analyses. In particular, detailed regional (within-country) statistics are needed to analyze the impact of famine among different regions and social groups. The good news is that we now have disaggregated data on food insecurity (such as the Integrated Food Security Phase Classification, IPC), climatic shocks (such as the Climate Hazards Center InfraRed Precipitation with Stations dataset, CHIRPS), as well as ample data being created to track the SDG agenda. This more detailed information opens a field of research for identifying the main triggers of contemporary famines.
- (iii) There is a gap in the generation of qualitative analyses from a subjective (insiders) perspective. We need to hear and acknowledge the voice of the destitute to comprehend the multi-causality of famines. This will help us identify new sources of vulnerability and understand the way they affect food insecurity; a crucial step in preventing the emergence of contemporary famines.
- (iv) Famine causal analysis needs to take into account the effects of the recent COVID-19 global pandemic, which has heavily affected the poorest families. This opens a new research line on whether the pandemic has increased vulnerability to food insecurity among poor families that did not have the opportunity to access immunization programs.

So, in the end, why do famines persist in the 21st century? After this exhaustive literature review, the answer seems evident: several triggers of extreme human vulnerability persist, mismanaged by both national governments and the international community, thereby provoking famine among

the most vulnerable families. These triggers include extreme poverty, violent conflicts, economic shocks, natural hazards, neglectful governance, famine crimes and pandemics. Famine is not a “single problem” but a consequence of a complex and synergistic set of vulnerability factors that require attention through an integrated development strategy.

This article offers an original cross-disciplinary review of the different ongoing theories that try to elucidate the emergence of famines, identifying their potentialities and limitations, their points of convergence, and their policy recommendations. I believe that this piece of research will help both development researchers and practitioners to better understand the complexity of famines and their persistence in the 21st century – despite their preventability. These aspects are crucial for advancing the formidable and necessary challenge of the “zero hunger” SDG and building a world free of famines.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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ENDNOTES

¹For further detail, both Devereux (1993) and Rubin (2016) provide exhaustive reviews of various contending definitions of famine.

²The World Peace Foundation's (2017) database includes 61 “great famines” (i.e., 100,000 or more excess deaths, according to the lowest “credible estimate”) that took place between 1870 and 2011. Hasell and Roser (2017) offer an alternative – but very similar – long-term data set.

³The World Peace Foundation (2017) offers a summary table of the major famines occurred in this period, showing the estimated number of deaths as well as the corresponding sources of these estimations.

⁴Comprehensive and rigorous reviews of this literature can be found in the excellent books by Stephen Devereux (1993, *Theories of Famine*) and Olivier Rubin (2016, *Contemporary Famine Analysis*).

⁵Curiously enough, Adam Smith was aware of the two French famines that occurred at the end of Louis XIV's reign. However, as Ó Gráda (2005: 165–166) contends: “Whether a better understanding of the history of European famines would have caused him to modify his position must remain a moot point”.

⁶Additionally, there are “competing visions” to the green revolution that aim to enhance the aggregate productivity of the agricultural sector by promoting more ecological practices, including the cultivation of indigenous crops and small-scale productions. As an illustration, Moorsom et al. (2020) conducted six case studies of African countries —Burkina Faso, Democratic Republic of Congo, Egypt, Mozambique, Rwanda, and Tanzania— that present alternatives to conventional green revolution strategies.

- ⁷Flaherty (2020) also studied the Great Irish famine and rejected the simple environmental explanation of the crisis. Instead, using local clustering analysis and geographically weighted regression, he originally verified the moderating role of resource governance systems in generating the uneven distribution of the famine's impact.
- ⁸Robson et al. (2007) also investigated the Malawian case and provided confirmation of evidence supporting the NVF hypothesis.

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