

Capturing food insecurity data and implications for business and policy

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Short title: Food insecurity: measurement and implications

Abstract

Food insecurity (also known as food poverty) is the inability to afford or access a healthy diet. It has become recognised as a public health emergency and is a priority in the context of the environmental, geopolitical and socio-economic implications on businesses, households and civic society. This review paper aims to discuss the merits of collecting food insecurity data and its importance in informing cross-sectoral government and others' understanding, policymaking and action on hunger. The review paper's key findings are that concerted action on measuring and mapping food insecurity with the aim of eliminating or reducing its prevalence represents a triple win for government, business and citizens. However, measurement does not provide solutions to food insecurity but contributes importantly to understanding its extent and severity to inform and evaluate proffered solutions. Government,



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business and food insecurity researchers and commentators cannot merely continue to simply describe food poverty - but must effect meaningful change amidst our communities to improve life quality in a timely way for those experiencing acute and chronic hunger. This is best done by addressing the structural causes of food insecurity through economically, socially and culturally fair and appropriate policy levers, requiring cross-sectoral collaboration. Ultimately, food insecurity requires a long-term, sustainable solution that addresses the policy issues under focus: low income, under/unemployment, rising food prices and Welfare Reform, informed by routine, Government-supported monitoring and reporting of the extent of food poverty among our citizens.

Keywords: Food insecurity, policy, sustainable development

Introduction

Food insecurity refers to having “insufficient economic access to an adequate quantity and quality of food to maintain a nutritionally satisfactory and socially acceptable diet”⁽¹⁾. A similar term, food poverty, is “the inability to consume an adequate quality or sufficient quantity of food for health, in socially acceptable ways, or the uncertainty that one will be able to do so”⁽²⁾. While the terms have slightly different emphases, they contain highly related constructs that are often used interchangeably. For the purposes of this review, the term that is applied throughout is food insecurity. It has become a public health emergency⁽³⁾ and is a priority in the context of the environmental, geopolitical and socio-economic implications on businesses, households and civic society because a poorly nourished population is also less economically productive limiting the business world’s chances for maximising economic activity⁽⁴⁾. Therefore, it is the aim of this review to critically evaluate the merits of monitoring food insecurity since data about its prevalence are critical for informing cross-sectoral government policy and action to ensure Government cross-departmental understanding and action on hunger and implement strategies for improvement and monitor progress.

The UK has signed up to the Sustainable Development Goals⁽⁵⁾ including Sustainable Development Goal 1, No Poverty, that calls for an end to poverty in all its forms everywhere, and Sustainable Development Goal 2, Zero Hunger, that commits to end hunger, achieve food security and improved nutrition by 2030⁽³⁾. Governments’ commitment to measure and report

on food insecurity at national, regional and global levels provides the means to understand the prevalence and severity of food insecurity.

As we approach the end of the United Nations Decade of Action on Nutrition (2016-2025) it is clear that the goal to “eliminate malnutrition in all its forms, everywhere, leaving no one behind”⁽⁶⁾ has not been met. This is evident since “despite years of advancement up to 2015, progress against hunger worldwide remains largely at a standstill” and currently “nearly three-quarters of a billion [735 million] people are unable to exercise their right to adequate food” globally⁽⁷⁾. It is important to note that food insecurity is not particular to developing nations; countries recognised as affluent also face increasing levels of food insecurity.

The complexity of food insecurity and the multiple tools and approaches that exist to measure it complicates arriving at consensual prevalence figures⁽⁸⁾. Unsurprisingly there have been numerous calls for the official, standardized, and routine collection and analysis of data to determine the extent of food poverty in the United Kingdom and Northern Ireland^(9, 10) - something which has been implemented since 2019 with first standardized data available from 2021⁽¹¹⁾. This was an important achievement and, moving forward, food insecurity measurement should be protected as a module on robust, government-endorsed, regular surveys to maintain the impetus to achieve No Poverty and Zero Hunger. Additionally, these trusted food insecurity data should be made publicly available for secondary analysis. A community of practice of researchers may then use extant data to unpack pressing societal issues known to them and other interested parties seeking to resolve food insecurity⁽¹²⁾. Such secondary data sources include Government databases and reports, for example, the Family Resources Survey⁽¹³⁾, Food and You 2⁽¹⁴⁾; nonprofit and NGO research such as the Global Hunger Index⁽⁷⁾ and Food Foundation⁽¹⁵⁾; and academic studies and publications such as PROOF⁽¹⁶⁾.

Pollard and Booth⁽¹⁷⁾ concluded that the prevalence of household food insecurity ranges between 8% and 20% of the population in some developed countries. For example, the most recent data available in the United Kingdom reported how one in four (25%) respondents across England, Wales, and Northern Ireland were classified as food insecure (13% low, 13% very low food security)⁽¹⁴⁾ while the UK Government’s nationally representative household survey (Family Resources Survey) reported data (2022-23) confirming that 14% of

households have marginal (5%), low (5%) or very low (4%) food security while 3% of households have used a food bank in the last 12 months⁽¹³⁾. While the statistics do not agree *exactly* on the prevalence of food insecurity, it is clear that hunger persists in the sixth richest world economy in 2024.

Measuring Food Insecurity

An authoritative overview of why food insecurity requires measurement and how it is predominantly measured has been published elsewhere⁽¹⁸⁾. There are various measurement tools used to assess food poverty and insecurity, such as the Household Food Insecurity Access Scale⁽¹⁹⁾, EU Survey on Income and Living Conditions food deprivation measures⁽²⁰⁾, the FAO Food Insecurity Experience Scale Survey Module⁽²¹⁾, and the USDA Household Food Security Survey Module (HFSSM)⁽²²⁾. Additionally, food insecurity has been measured variously using statistics reporting undernutrition, food expenditure as a proportion of the household budget, food price volatility statistics, food frequency questionnaires and anthropometrical measures. A singular food insecurity measure is useful to articulate the severity of its existence and avoid confusion that can come with having a plurality of indicators available. The HFSSM has been found to dominate food insecurity measurement in the developed nations⁽¹⁸⁾.

Likewise, food insecurity can be mapped to provide a graphical representation of the concentration of food insecurity in a geographical area. A range of variables relating to accessibility to food, mobility, deprivation and socio-economic status can be integrated into a Geographical Information System (GIS) to visually and impactfully illustrate food insecurity risk status for a given area by stacking layers of information together based on location, for example, postcode, house number, IP address or latitude/longitude to represent complex problems with the final picture providing a greater insight than one layer alone. Researchers⁽²³⁾ mapped food insecurity for one local council area in Northern Ireland and used red, amber and green colour codes to identify area-based vulnerabilities and classify areas as being at high, moderate or low risk of food insecurity respectively. This is a useful means of analysing, interpreting and presenting food insecurity data because it informs area-based targeting which is an approach that can be updated based on new data or different priorities as befits different policy impetuses at any given time. The resultant maps and data serve as an evidence base to inform action-oriented next steps regarding policymaking,

reducing associated health inequalities through targeted interventions, and enhancing consumer access to basic services provision as part of their poverty alleviation policies, programmes and interventions by targeting resources to homes in greatest need at District Electoral Area level to maximise impact and ensure those most in need are supported. The approach is most effective when used as a tool in partnership with experts / stakeholders (e.g., local councils, charities, community practitioners and advocates etc.).

Implications for Policy

Despite food insecurity's emergency status and achieving growing attention in the food policy arena, efforts to eradicate food poverty thus far have tended to be downstream rather than policy-level responses. Policy-level responses can be informed by measurement or mapping data. These data can then support the targeting of economic aid food assistance programmes by directing public spending effectively and efficiently when allocating resources and funding.

There are some international examples of where social protection policy interventions have impacted successfully on the prevalence of food insecurity among low-income households to help them meet their basic needs and improve their well-being⁽²⁴⁾. For example, the temporary £20 uplift to Universal Credit in the United Kingdom led to reduced overall poverty rates⁽²⁵⁾. Likewise, the Supplemental Nutrition Assistance Program (SNAP) in the United States has been evaluated as improving food security⁽²⁶⁾. The evaluation of Brazil's conditional cash transfer programme, known as Bolsa Família, improved prevalence of food security and mild food insecurity alongside other socioeconomic indicators including improved household income⁽²⁷⁾, highlighting the cumulative effects of poverty reduction strategies. Meanwhile in India, cash transfers during Covid were relatively successful in mitigating potentially deep impacts of food insecurity⁽²⁸⁾. Currently there is much discussion about the feasibility of introducing universal free school meals as a public health intervention aimed at reducing food insecurity amongst children⁽²⁹⁾.

Meanwhile, qualitative data about the lived experience and the efficacy or otherwise of intervention strategies can help to change public attitudes towards the phenomenon and indeed support its framing in popular and political debate⁽³⁰⁾. This is especially important because media reporting is a significant information source for the public on social- and

health-related issues such as food insecurity⁽³¹⁾ which in turn helps us understand how both the public's and policy-makers' knowledge about the issue is constituted⁽³⁰⁾. Therefore, food insecurity framing should be deployed meaningfully to bolster health promoters', researchers' and other stakeholders' communication toolkits to optimise advocacy calling for more meaningful responses to address, sustainably, the structural causes of food insecurity.

Furthermore, such qualitative and quantitative data can support the creation of nutrition, health and anti-poverty policies informed by both formally recognised and anecdotal need. It is also important to consider the views of experts by experience (people who have lived or are living in food security) because in arriving at potential solutions to improve the incidence and experience of food poverty, any amenities and programmes arising as recommendations must be not only evidence-informed and targeted, but also be meaningful interventions that are ultimately welcomed by intended beneficiaries⁽³²⁾.

Implications for business: Business opportunities and responsibilities

As stated above, different actors have a role to play in effecting meaningful change in improving food security status at the population level, including cross-cultural collaboration with businesses⁽¹²⁾. Businesses have been impacted by the constant flux and perilous state of world affairs also known as the permacrises that include Covid-19, the war in Ukraine, climate change, and the UK's withdrawal from the European Union (Brexit) resulting in renegotiating trade agreements⁽³³⁾. To counteract this, businesses can consider food insecurity an opportunity to refine and promote their corporate social responsibilities and overcome some of the societal failures for which they may be often blamed⁽³⁴⁾. In doing this, businesses should ensure they avoid 'greenwashing' so that what a firm communicates aligns ultimately with its actions⁽³⁵⁾. This is important because food businesses contribute surplus food and often promote it as part of their corporate social responsibility agenda. Such corporate philanthropy / food charity may present as a possible conflict of interest that can arise from such relationships^(36, 37) and must not be allowed to ultimately compromise more general public health policy through undue influence or other conflicts of interest⁽³⁸⁾.

Additionally, businesses can strive to create shared value which is a strategy where companies generate economic value in a way that also produces value for society by addressing its needs and challenges⁽³⁴⁾. For example, understanding where certain locations

are underserved in terms of access to basic services can be viewed as new potential markets where lower-income (and rural) consumers require access to affordable nutrition without a poverty premium / rural premium. In so doing, businesses creating healthier, more affordable food products could radically improve people's lives in a way that meets their charitable commitments while simultaneously acting in their own self-interest due to the enormous business benefits to be gained by entering developing markets. This is because, while individual incomes may be low, the aggregate buying power of lower-income communities is substantial⁽³⁹⁾. In this regard, serving our food insecure population is not just a philanthropic venture but a viable and profitable business strategy. By unlocking significant economic opportunities to drive sustainable business growth and development, businesses can also contribute to poverty alleviation and social development. This, coupled with targeted financial aid from developed economies alongside developing nations' improvements in their own governance can improve the quality of life of populations⁽³⁹⁾.

Such actions should be informed and supported by robust data collection and meaningful cross-sectoral, collaborative working that promotes transparency and accountability in data use. Interest is growing in business' potential to make proactive contributions to food security, particularly as part of some form of cross-sector collaboration⁽¹²⁾. Indeed, researchers opine that companies must take the lead in bringing business and society back together⁽³⁴⁾. Companies need to move away from a principally profit-driven mindset to one that integrates social value into core business strategy. Companies willing to innovate and adapt their business models to meet the needs of lower-income communities can unlock significant economic opportunities while also alleviating poverty and contributing to communities' social development. By reframing lower-income people as active consumers rather than passive recipients of aid, businesses can drive sustainable growth and development, creating a win-win scenario for both companies and the global poor.

Companies *should* invest in the communities and environments in which they operate. This involves improving infrastructure, education, and overall quality of life, which in turn creates a more conducive environment for business. The current prioritisation of sustainable development initiatives presents the opportunity for businesses to contribute to ensuring food accessibility by leveraging local entrepreneurs and community networks for food distribution through alternative food networks and community food hubs. This serves to bring people to

the food and food to the people as espoused by good food movements and food citizenship models such as Sustainable Food Places and the Food Ethics Council. Other examples of business engagement in seeking to improve food accessibility include supermarkets offering discounted healthy foods, food companies partnering with food banks as corporate donors, and technological companies developing food tracking apps such as *Olio*⁽⁴⁰⁾ and *Too Good to Go*⁽⁴¹⁾.

Alongside businesses' role in developing and implementing innovative responses in partnership with others, government leadership remains crucial for addressing food crises, of which food insecurity is one⁽⁴²⁾. Of course, regulation is necessary for well-functioning markets, and this is where policy and business implications merge. It is important that regulations be designed and implemented in such a way as to benefit society rather than work against it. Regulations should set goals and stimulate innovation through highlighting a societal objective and creating a level playing field to encourage companies to invest in shared value rather than maximize short-term profit⁽³⁴⁾.

Certainly, the food insecurity data suggest that there is a pressing need for cross-sectoral collaboration via partnerships with governments, NGOs (that have an increasingly important role both in policymaking, implementation and the general political process around food and nutrition), businesses and other stakeholders including civil society to address complex societal issues effectively. As stated by the UN Food and Agriculture Organization, 'The challenge of food security can only be resolved through a global partnership involving national, international, public, private and voluntary sectors'⁽⁴³⁾. This is because, in today's complex food system, governments need all the help they can get to develop effective food policies that deliver the common objective of ensuring there is adequate, affordable nutrition to feed everyone ... and feed everyone in a way that is sustainable, healthy, respects everyone's culture, traditions and human rights while delivering a return on investment for shareholders. Together we can create a food system that works for everyone. We can achieve the triple bottom line of delivering for people, planet and profit through effective and joined-up policymaking and action informed by robust evidence.

Conclusion and recommendations

Food insecurity requires a long-term, sustainable solution that addresses the policy issues under focus: low income, under/unemployment, rising food prices and Welfare Reform, informed by routine, Government-supported monitoring and reporting of the extent of food insecurity among our citizens. Importantly however, its measurement should not be considered to be a solution to food insecurity. While measurement is an important and necessary contributor to the research agenda around food insecurity and to plan and inform cross-sectoral government policy and appropriate policy and other interventions, in and of itself it does not provide solutions but contributes importantly to understanding its extent and severity. There, therefore, needs to be a balance between measurement of the problems, devising solutions and evaluating the solutions⁽³⁾. Critically, we need research and policy solutions that complement each other so that we do not merely continue to describe food poverty occurrences but effect meaningful change amidst our communities to make life better in a timely way for those experiencing acute and chronic hunger. Addressing the structural causes of food insecurity through cross-sectoral collaboration and economically, socially and culturally fair and appropriate policy levers provides the greatest chance to address the gap between income and food costs and lift our most vulnerable citizens out of food insecurity.

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