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"Measurement drives diagnosis and response": Gaps in transferring food security assessment to the urban scale

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ABSTRACT

The understanding of food security has seen major shifts since the original conceptualisations of the challenge. These changes in understanding have been accompanied by different food security measurement approaches. Despite the fact that the world has become increasingly urbanised and the developing world in particular, is experiencing its own urban transition, changes in food security measurement remain predominantly informed by a rural understanding of food security. In instances where urban measurement does take place, rural-oriented measurement approaches are adopted, occluding critical urban challenges and systemic drivers. This paper begins by highlighting the urban transition and attendant food security challenges in the Global South. It then reflects on existing food security measurement methods, detailing the positive components but also highlighting the shortfalls applicable to the urban context. At the urban scale, a food system assessment is argued to be one appropriate tool to respond to urban food insecurity while at the same time providing both the "breadth and depth" to inform effective food security programming and policy interventions. Theoretically, questions of scale, context and a critique of the rural bias in food systems work are essential informants guiding the approaches applied.

1. Introduction

From simple beginnings at the 1943 Hot Spring Conference of Food and Agriculture, food security has become "a cornucopia of ideas" (Maxwell, 1996, p. 155). The concept of a "secure, adequate and suitable supply of food for everyone" (Weingartner, 2004, p. 4) enunciated at the conference has since been reconceptualised and expanded to meet contemporary food security concerns, perceptions and realities. Reviewing literature on household food security, Maxwell and Frankenberger (1992) listed 194 and 172 different studies on food security conceptualization and food security indicators respectively. Five years later Clay (1997) provided an additional 72 references dealing with food security conceptualizations. But why should one be overly concerned about what is measured and where? Cafiero et al. (2014, p. 230) argues that:

> Measurement is indisputably an important element of the process through which we advance knowledge. It is indispensable when we need to highlight changes such as the progress toward set targets. To contribute to knowledge and to allow correct assessments, however, measurement should be valid and reliable, posing two fundamental but distinct problems regarding what is being measured and how it is done.

The various changes in food security conceptualization have also given rise to changes in the ways in which governments and aid organizations have approached food security challenges. The initial understanding of food security as the "availability at all times of adequate world food supplies of basic foodstuffs … to sustain a steady food expansion … and to offset fluctuations in production and prices" (UN, 1975), underscored the then prevailing view that food insecurity was a function of shortages in global food supplies. Food insecurity could thus be remedied by massive food aid shipments to food deficit areas as well as increasing agricultural production (Barrett, 2010, p. 825). Food security practitioners thus paid little attention to food access issues. The persistent food crises in Africa in the mid-1980s, however exposed the myth that increased production was the panacea for food insecurity as food insecurity continued to occur even in geographic areas where food was physically available (Borton and Shoham, 1991). Through the work of Sen (1981) and his 'entitlement thesis', emphasis shifted from natural causes of food insecurity to focus on social, economic and political causes of vulnerability (Maxwell, 1996). Such reconceptualization shifted attention to individual-specific hunger; a view that served to reinforce food security strategies based on poverty reduction, food price, and social protection policies (Barrett, 2010, p. 825). These shifts

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inform the most widely recognised food security definition, that "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996). While the 1996 FAO definition remains contested, it refocused food security approaches. Food security is now seen to involve the intersection of four food system dimensions: availability, access, utilization and stability. This definition is more inclusive as it looks at whether the necessary systems, structures and policies are in place to ensure that food is available and accessible during times of extreme food scarcity (Haysom, 2017).

Parallel to developments in food security conceptualization have been advances in food security measurement. According to Upton, et al. (2015, p. 2) the primary purpose of seeking a precise and agreed upon definition [of food security] is to provide a template for understanding the problem, designing solutions, targeting policies, and assessing progress. Hence changes in food security conceptualization have also resulted in the realignment of measurements to capture the understanding embedded therein. Pre-1980, food security measurement was generally geared towards measuring availability of food stocks at national, international and global levels, paying particular attention to only those shocks that would affect production and food prices (Maxwell and Smith, 1992). The post-1980 period, heavily influenced by Amartya Sen's writings, shifted measurement emphasis to the individual's ability and ways to access food. More recent measurement developments have seen the inclusion of food preparation, utilization and feeding practices (FAO, 2008). These changes have been necessitated by the need to accurately measure food (in)security and successfully tackle its challenges. As Barrett (2010, p. 827) asserts, "measurement drives diagnosis and response". Accurate and appropriate measurement of food security is thus critical to addressing global food security challenges.

Food security measurement is both a technical and political issue. Decisions about what is measured and how it is measured is an outcome of a set of complex deliberations based on time, resources and capacities, but also on ideological and political positions. Poorly designed measurement tools obfuscate, and can have negative food security outcomes. Measurement tools designed for certain contexts can overlook vital issues in a different context. Battersby (2016, p. 1) in the context of the Sustainable Development Goals (SDGs) suggests that;

> the MDGs and SDGs fail to respond to the changing manifestation of food and nutrition insecurity with respect to the increasing urban face of food insecurity and the rapid nutrition transition that is underway in most of the developing world, and may in fact be exacerbating the newly manifesting forms of food insecurity.

The nature of measurement and how measurements are political and can be manipulated to support particular positions is evident in the case of the Millennium Development Goals (MDGs). The political bias raises questions about the "good news narrative" of the MDGs. As Hickel (2016, p. 3) states, "the narrative about poverty and hunger comprises a potent political tool". Hickel challenges more than just the measurements used, but also how data are then interpreted and communicated. The practice of aggregation, for example, often masks the reality of the net numbers experiencing food insecurity, in effect trivializing their struggles.

The daunting challenge faced in measuring food security is as a result of the multidimensionality of food insecurity. Misselhorn (2005), in her meta-analysis study of the household economy in Southern Africa, for example, identified seventeen direct drivers of food insecurity that accounted for eighty percent of the impact from thirty-three theoretical drivers. Thus, on one hand there are food security aspects that can be assessed in a quantitative manner, and on the other there are aspects that are qualitative, relating to the quality of the food consumed, and the ways in which access to such food is negotiated and experienced. With such diversity, different studies often use different measures to assess different dimensions of food security. This makes it difficult to compare results from different studies even within the same spatial and temporal frames.

Different measurement approaches yield different estimates of food insecurity at global and national levels. In June 2009, for example, the FAO estimated the number of undernourished people to have climbed to 1020 million globally (FAO, 2009). In the same month the USDA estimate of global undernutrition was only 833 million people (Shapouri et al., 2009). Arguably, politics and measurement differences were at play in these instances.

A number of authors have already advocated for a rethink on current food security measurements (e.g. Heady and Ecker, 2013; Carletto et al., 2013). The underlying arguments for the call have been that existing measurements are too varied, with different food security actors advocating for different measurements depending on their broader agenda (Carletto et al., 2013). Other authors have suggested that the variety in measurement is perhaps beneficial and question the usefulness of a single measure to determine food security status. In writing specifically on urban food security, Battersby (2012a) suggests that a suite of indicators may be able to capture the complexity and diversity of food security in different contexts. Such suggestions pose a real challenge for national governments, first where indicators and measures need to align to global reporting processes for initiatives such as the SDGs (Fukuda-Parr and Orr, 2014) and secondly, where budgets limit such "depth" in measurement.

The food security measurement debate, largely concentrating on the ability of different measures to cater for different aspects of food security as well as the comparability of such measures, has tended to mask other important measurement concerns. Such concerns centre on the contextual differences between rural and urban areas and the suitability of current measures to adequately capture the diversity that characterises the urban food security environment. This paper argues that the historical neglect of food security in the urban areas by national policy processes, urban managers, the global development fraternity, and academics, has serious repercussions for the way in which food insecurity in the city has been, and is, measured. The purpose of this paper is therefore to interrogate various measurements that have been used to assess food security, assess their appropriateness for use in urban areas and where possible, suggest modifications and additions required to measurement tools so that they are sensitive to the context in which they may be used.

2. The need for an urban food security measurement approach

Rapid urbanisation and the challenge of building inclusive cities is the critical development issue of the 21st Century, particularly in cities of the South. The absolute growth and increasing concentration of people in cities will transform governance and policy imperatives (Turok, 2012). In addition to dealing with the traditional urban challenges: housing, water, unemployment, crime, and pollution, city authorities have to brace themselves to tackle challenges relating to food security, particularly in light of the nutrition transition and rapid urbanisation in the Global South. However, food and the food security agenda have not been considered central to the urban agenda. This is despite the fact that food insecurity is an increasingly important urban problem in this millennium (Chmielewska and Souza, 2011). In the Global South, urban food insecurity has been largely sidelined in research and policy-making over the last decade (Crush and Frayne, 2011). The framing of urban food and nutrition responses remain agricultural and productionist in nature (Spoor and Robbins, 2012). This 'agro-production' focus means that the scale at which action and interventions are planned, legislated and funded remains the national scale.

The history of food security theorisation, and consequently, its measurement, has been dominated by a disproportionate focus on rural areas (Crush and Frayne, 2010). The rural focus has often been justified