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A Methodological Proposal

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Selecting a Core Set of Indicators for Monitoring Global Food Security

- A Methodological Proposal -

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Abstract

Appropriate measures to track progress towards global food security are critical for designing and evaluating policies and programs as well to enhance the accountability of the policy process. However, finding an agreement on a common framework for the monitoring of countries' and global food security is nonetheless challenging for various reasons. Ultimately, this exercise relates to the selection of the most appropriate informational basis for the monitoring of global food security and of which criteria should inform this choice.

This paper proposes a methodology to select indicators in multidimensional assessments, such as the ones required for the measurement of food security. By linking the overarching objectives of the evaluation to the nature of the indicators, this methodology is able to discriminate among the hundreds of indicators proposed in the literature. The proposed methodology provides the conceptual framework underpinning the selection of the suite of core food security indicators first presented in the 2012 *State of Food Insecurity in the World* (FAO 2012), and, while this specific application focuses on the monitoring of global food security, it is more generally suitable for the measurement of other multidimensional phenomena.

Key words: Global food security, Multidimensional Measurement, Suites of indicators.

JEL codes: I32; Z19

1. Background and Motivation

> *"There is no best indicator, best measure of an indicator, or best analysis of an indicator in a generic sense. The definition of "best" depends ultimately on what is most appropriate for the decision that must be made."*
> (Habicht and Pelletier 1990, p.1519)

In the past five years, the international policy and academic communities have reached consensus[1] on the imperative of developing appropriate measures for the monitoring of food security across countries and over time and for the promotion of policy accountability. Such agreement follows the widespread recognition of a global evidence gap in terms of both a common monitoring framework to monitor food security and lack of internationally comparable data to target areas of need, track progress and enhance accountability (Sumner & Lawo 2010; De Haen et al 2011; Masset 2011, Headey 2011; Swinnen & Guicciarini; Banerjee & Duflo 2011).

The development of a common framework for the assessment of countries' progress towards food security is nonetheless challenging. Food security is a multifaceted phenomenon that is suited to multidimensional assessment (De Haen 2003; Heidheus & Von Braun 2004; CFS 2011). In the last two decades, the complexity of the concept, compounded by the impossibility of observing food security outcomes directly (Barrett 2010), led to a veritable proliferation of indicators (Hoddinnott 1999, CFS 2011). Accordingly, a common framework for the monitoring of food security – on the model of the Millennium Development Goals indicators (UN, 2003) – requires the international food security community to select and reach agreement on a core set of indicators that alone can provide an exhaustive, yet synthetic, picture of countries' and global food security. Ultimately, this overall objective relates to the selection of the most appropriate *informational basis* (Sen 1999) for the assessment of food security and to which criteria should underline the choice of a limited set of measures among the hundreds proposed in the literature. Clearly, the selection of the informational basis for the evaluation is inextricably linked to the formulation of value judgments, which need to be transparently conveyed to each of the relevant stakeholders of the assessment in order for it to be accepted by its final users (JRC-OECD 2008).

By acknowledging these critical issues, this paper presents a methodological proposal to select indicators in multidimensional assessments. The proposed methodology provides the theoretical underpinning behind the selected indicators that were included in the suite of core food security indicators presented in the 2013 *State of Food Insecurity in the World* (FAO 2013). Also, while this specific application is focused on the monitoring of global food security, it can nonetheless be applied to the measurement of other multidimensional phenomena. Building on the literature on social indicators (UN 2003, Jannuzzi 2001, 2005; JRC-OECD 2008, Maxwell &

[1] Most notable of these being the 2011 Committee of Food Security Roundtable on Monitoring Food Security & the 2012 International Symposium on Food and Nutrition Security Information.

Frankerbengen 1992; FAO-FSAU 2009), the proposed methodology links different objectives of an evaluative exercise (i.e. monitor levels and progress *viz*. modeling associations and change) to the category to which each different indicator belongs (i.e. outcome *viz*. input indicators). By exploiting this conceptual distinction, the present methodology aims at avoiding the typical problem of 'laundry lists' of indicators, which tend to assemble tens of indicators without clearly distinguishing their role in the process of achievement of the concept under investigation. As they fail to recognise this critical methodological distinction, "shopping lists" of indicators tend to mix the "inputs" with the "outcomes" of the phenomenon, or the "means" with the "ends" of development (Sen 1999), which leads to difficulties in analysis and communication to the policy-makers and the public.

The paper is structured in five main parts: while section 2 briefly reviews some critical features characterising the concept of food security and provides the operational definition of food security that will be used as basis for the assessment. Later, Section 3 presents the methodology proposed in this paper, while Section 4 applies it to the problem of selecting a core set of food security indicators. Finally, Section 5 concludes.

2. Concepts drive measurement: unfolding the concept of food security

"What is badly defined is likely to be badly measured"
(JRC-OECD 2008, p. 22)

Much of the dissatisfaction related to the monitoring of food security measurement is due to the widespread confusion around the ultimate meaning of the concept. Misunderstandings pertain to both the *terminology* commonly used to describe a state of food insecurity and to the same *analytical concept* of food security[2] (CFS 2011). With regards to the former, terms such as "hunger", "undernourishment", "undernutrition", "food deprivation", or "food crisis", are used interchangeably as if they are synonyms for the same underlying concept. Yet, they are not, as each of them describes a specific and different aspect of the broader phenomenon of food security (and the lack of it)[3] (CFS 2011). While the variety of terms underscores the complexity involved in food security analysis and measurement, semantic confusion is also related to a more general lack of clarity regarding the very concept of food security. It is therefore vital to clarify the concept of food security before undertaking any evaluative exercise: concepts guide indicators selection, and consequently the

[2] Misunderstandings on the concept of food security and on the terminology used in analysis and measures has probably strongly contributed to the proliferation of "shopping lists" of indicators, which, in turn, has fostered further confusion on the nature of the concept.

[3] For instance, hunger is the feeling of discomfort caused by the lack of food, and somebody that is suffering from involuntary hunger is classified as food insecure. However, the reverse situation is not necessarily true: even though an individual may have access to food in sufficient quantities, she could still be food insecure due to the poor nutritional content of her diet, also known as hidden hunger.

outcomes and policy implications of the assessment. By acknowledging such a pressing need for conceptual clarity, the present Section aims to provide an overview of the concept of food security, by highlighting three key elements that characterise the concept: its multidimensionality, dynamics, the different levels of analysis at which policy can intervene and the interdependencies across them

a. Multidimensionality

The 1996 World Food Summit (WFS) definition of food security - "A situation in which all people at all times have social access to sufficient, safe, nutritious food to maintain a healthy and active life" (WFS 1996) - explicitly acknowledged the multidimensionality of food security by highlighting four underlying pillars: availability, access, utilization, and stability. In particular, availability[4] refers to the "physical supply of food from all possible sources" (e.g. all forms of domestic production, commercial imports, food aid, etc.). Access represents the "economic, physical, and social ability to acquire adequate amounts of food[5]" (WFP 2009, p. 17) through a combination of different sources (e.g. own stocks, home production and collection, purchases, barter, gifts, borrowing, remittances, food aid, etc.). Food security outcomes, however, do not only depend on the access to food, but also on the ability of the individuals in converting acquired food into adequate nutrition for a "healthy and active life". The utilisation points to the "households' use of the food to which they have access, and to the individual efficiency in biologically converting nutrients in order to meet their specific nutritional and health needs" (WFP 2009, *ibidem*). The ability to convert the acquired food into good nutrition depends on mainly three elements (Drèze & Sen 1989): (i) individual heterogeneities related to age, gender, health status, activity levels etc.; (ii) nutrient adequacy of the diet (in terms of balance between essential macro and micronutrients), in order to minimize the risk of nutrient deficit and of hidden hunger (FAO 2008); and, finally, (iii) non-food elements, such as prevailing health and sanitary conditions (i.e. access to good quality basic health and sanitation services, eradication of infectious diseases, *etc*), education and nutritional knowledge, care and feeding practices (i.e. related to infants and children, the elderly, sick people etc) and availability of adequate food storage