Data collection and analysis tools for Food Security and Nutrition
towards enhancing effective, inclusive, evidence-informed decision making

HLPE-FSN Report #17

Presented by
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13 February 2023

Six chapters

1. **Setting the stage**
   – Definitions and conceptual frameworks.

2. **A review of existing FSN data collection and analysis initiatives**
   – Illustrating good practices and the richness of what is already there.

3. **Constraints, bottlenecks (and some solutions) for effective use of FSN data**
   – Focusing on what is still lacking, especially in countries where resources are more limited.

4. **New and emerging digital technologies for FSN data**
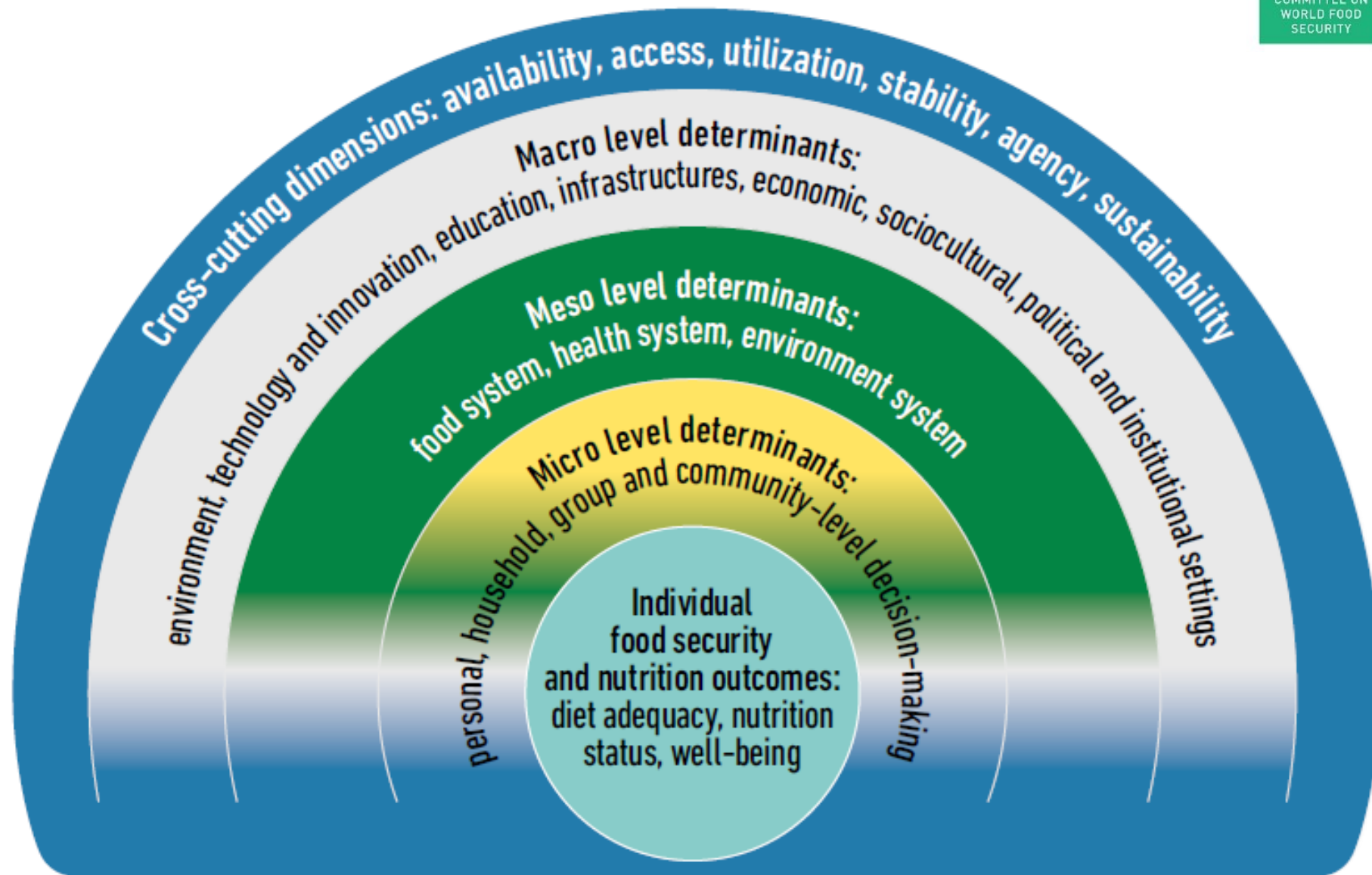   – Opportunities and risks associated with the diffusion of new data technologies.

5. **Institutions and governance for FSN data collection, analysis, and use**
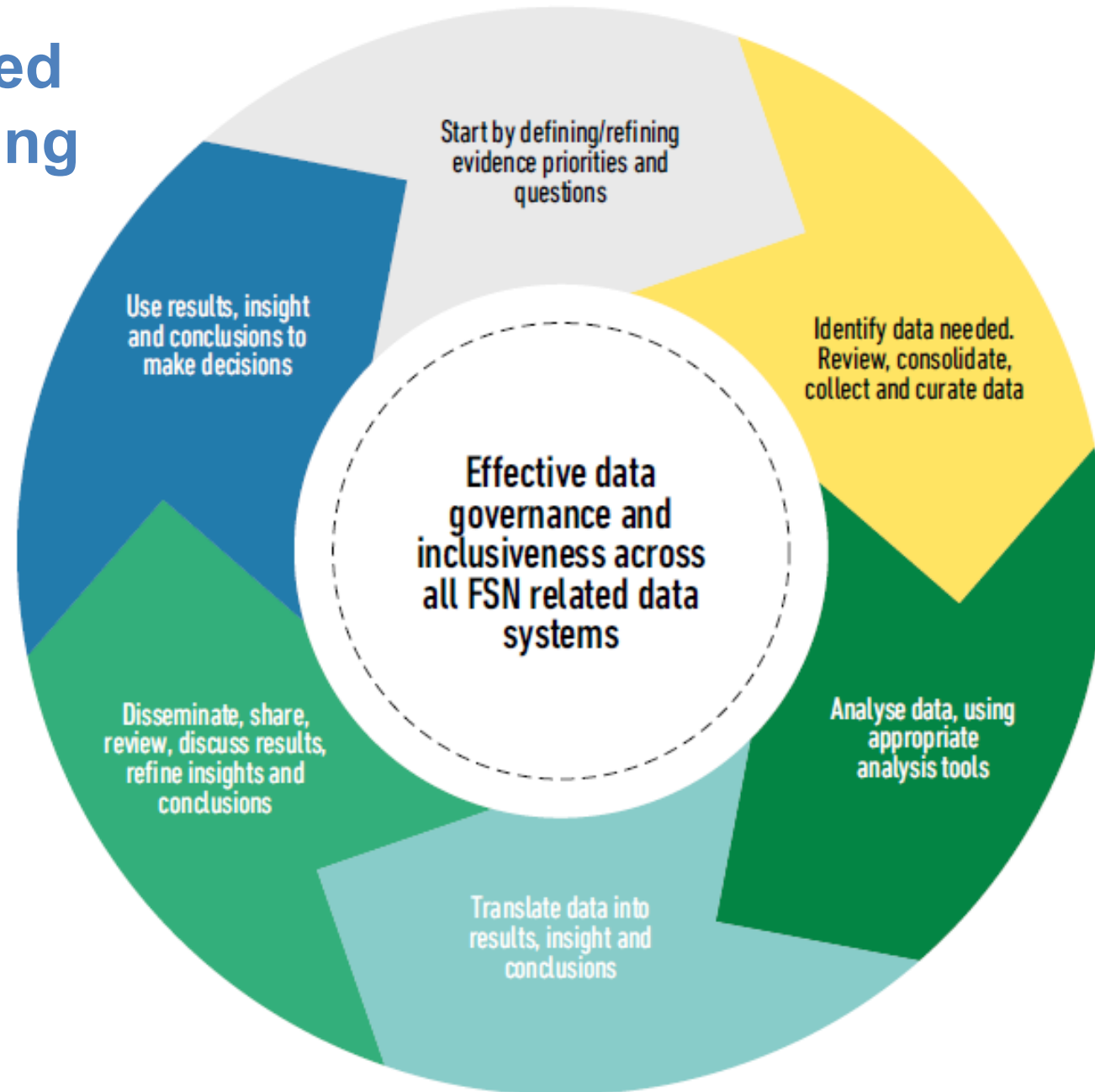   – Perhaps the key challenge.

6. **Final reflections and recommendations**
   – Presented to provoke further, in depth discussions.

A framework for a systemic view of FSN

Cross-cutting dimensions: availability, access, utilization, stability, agency, sustainability

Macro level determinants: environment, technology and innovation, education, infrastructures, economic, sociocultural, political and institutional settings

Meso level determinants: food system, health system, environment system

Micro level determinants: personal, household, group and community-level decision-making

Individual food security and nutrition outcomes: diet adequacy, nutrition status, well-being

A data-informed decision-making cycle

Challenge #1

As already highlighted by the World Development Report in 2021, we need "a new social contract *that enables the use and reuse of data*" (World Bank, 2021).

- The rapidly evolving, but probably still inadequate *global data governance systems*, may fail to address the many subtle economic and ethical aspects of the data revolution, associated with capture, ownership and sharing of both personal and non personal data on a global scale, often beyond the ability of any national government to control.
    - While heightened attention is being devoted to the issue of privacy and personal data protection, less attention is being devoted to the more fundamental issue of **data ownership:** still too often, data tend to be treated as any other private asset, as if they might be effectively managed by mechanisms designed for excludable goods and services, through contracts that stipulate the need and foresee the possibility to effective control access to the data.
- A new, much bolder, position ought to be taken, that recognizes the incredible potential of **digitized data that can be used and re-used** even simultaneously by many users and for different purposes.
    - **IP features** such as copyright, for example, **are obsolete**, and vastly insufficient to ensure an efficient use of existing modern data.

Challenge #2

How to ensure *effective coordination* among the many data generating and data user entities, both public and private, national and international, political and academic, remains problematic.

- One of the consequences of a vision of **data as an *asset*** owned by someone, is that investments in data generation and the management of existing data are guided by an expectation of **specific *returns* to the data owner.**

- As a results, many potentially **useful datasets tend to remain siloed**, not shared for fear that the potential private returns may be eroded.

- On the other hand, treating data as a real global public good may incur in the underinvestment problem typically associated with the *free rider* **problem**.

Challenge #3

Adequate, deep data and information *analytic capacity* is still largely unexploited (and often unavailable) at all levels of the data-informed decision-making cycle

- While highly fashionable these days, **big-data analytics** based on machine learning algorithms and artificial intelligence offer some solutions, but **cannot be considered a full substitute for** more traditional, sophisticated methods to distil information from limited data, based on **statistical inference**
- Sophisticated statistical inference methods still too often are not part of the toolkit of many applied food security and nutrition analysts, who use **quantitative models based on overly simplistic assumptions**.

- A common, yet misleading divide between "quantitative" and "qualitative" research methods in the social sciences must be overcome, recognizing the need to bring in scientific analyses and solutions for FSN the fundamental elements of an appreciation of *residual uncertainty* and of *creativity.*

Key message and call for actions

Despite the abundant and growing availability of data and information relevant to food security and nutrition, often decision makers are not aware of the existence, breadth, and relevance of such data, or do not use them appropriately, due to challenges at each step of the data cycle.

Calls for action

- **Create** (even) **greater demand for data** for decision-making among governments, policy makers and donors, by promoting a broader data and information analytic culture among decision makers at all levels.
- Optimize and, if needed, repurpose current data-related investments, while increasing collaboration between international organizations, governments, civil society, academia and the private sector, to **harmonize and maximize the sharing of existing FSN data**.

Key message and call for actions

Fundamental data gaps still exist to correctly guide action and inform policymaking, especially in terms of timely and sufficiently granular data on people's ability to locally produce and access food, on their actual food and nutrient consumption, and on their nutritional status. Increased and sustained financial investment is needed to overcome these gaps.

Calls for action

- **Increase** and **sustain** investment in the collection of essential data for FSN, both for emergency response and for long-term structural policy planning.

- **Provide technical and financial assistance** to resource poor countries.

- **Promote** efforts to **modernize national statistics systems** in order to establish comprehensive, coordinated FSN data systems and to sustain the collection of the disaggregated and detailed data needed over time.

Critical urgent data gaps areas

Level	Dimensions of food security and nutrition					
	Availability	**Stability**	**Sustainability**	**Access**	**Utilization**	**Agency**
Macro	Natural resource base Earth Observation International food commodity stocks and trade	Global/regional food commodity stocks and reserves	Weather and other risk trends and predictions	International food commodity prices	Food composition data Food safety data	
Meso	Domestic food availability	National food stocks and reserves		National food price indices	Water & Sanitation	Market concentration shares
Micro	Local food systems	Early Warning Information Systems		Local food prices Household incomes and consumption patterns Food insecurity experiences	Household living conditions Household water access	Food insecurity assessment surveys Women's Empowerment in Agriculture Rural Livelihood and Information Systems
Individual (Outcomes)	Dietary intake/diet quality; malnutrition prevalence and related health outcomes					

Critical urgent data gaps areas

CFS — COMMITTEE ON WORLD FOOD SECURITY
HLPE — High Level Panel of Experts

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Micro	**Local food systems**	**Early Warning Information Systems**	**(Environtmental, social and economic sustainability of farming)**	**Local food prices Household incomes and consumption patterns Food insecurity experiences**	Household living conditions **Household water access**	Food insecurity assessment surveys Women's Empowerment in Agriculture **Rural Livelihood and Information Systems**
Individual (Outcomes)	**Dietary intake/diet quality**; malnutrition prevalence and related health outcomes					

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Key message and call for actions

Several other constraints limit the effectiveness of data-informed policy action, especially in low-resource countries. Key among them is the low level of data literacy and analysis skills (for both qualitative and quantitative data) on the part of data and information users at all levels – from data collectors and analysts, to decision-makers, and to the people, as the ultimate beneficiaries of food security and nutrition policies.

Call for action

- **Invest in human capital** and in the **needed infrastructures** to ensure the sustainability of data collection, processing and analytic capacity especially in resource poor countries.

Key message and call for actions

The complexity of the system of public and private actors and institutions involved in food security and nutrition data, coupled with the rapidly changing characteristics of today's data ecosystems due to the digital revolution and the pervasiveness of the internet, brings to centre stage the need for global coordination to improve data governance.

Particularly urgent is the need to reach agreement on the nature of FSN data and information as a public good, and, on that basis, to establish a global legal framework that allows for the broadest possible circulation of relevant information, while preserving the rights of the people to whom the data ultimately belongs.

Call for action

- **Improve data governance** at all levels, promoting inclusiveness to recognize and enhance agency among data users and data generators

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Thank you!