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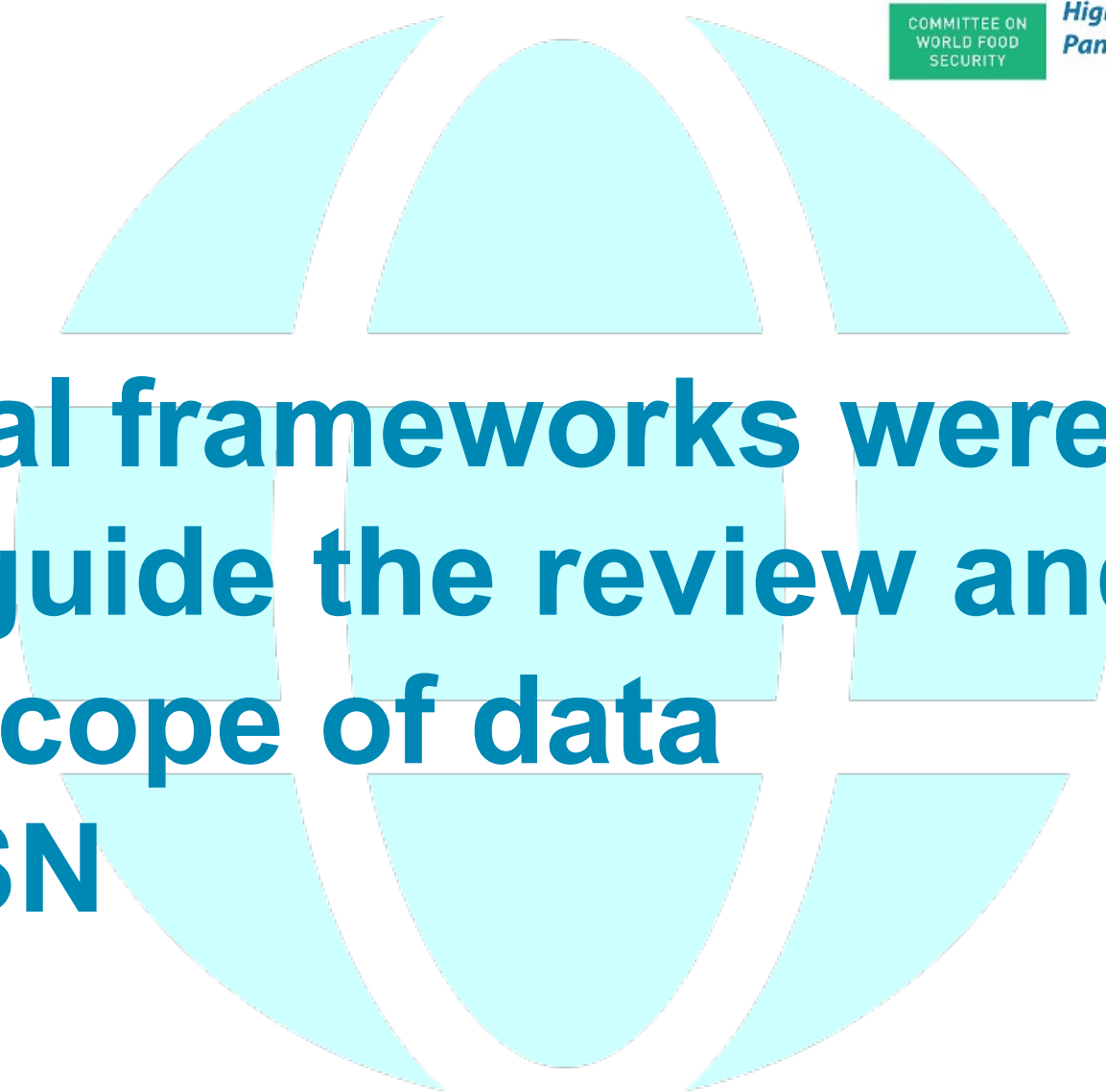
towards enhancing effective, inclusive, evidence-informed decision making

HLPE-FSN Report #17

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Outline of the presentation

- **The framework(s)**

- **Key messages**
  - **Overarching recommendations**
    - **Specific examples of recommendations directed to potential interest groups (national governments/ status offices; UN system; donors; among others)**
      - **additional examples are included under each core recommendation in the full report**

Two conceptual frameworks were developed to guide the review and highlight the scope of data relevant for FSN
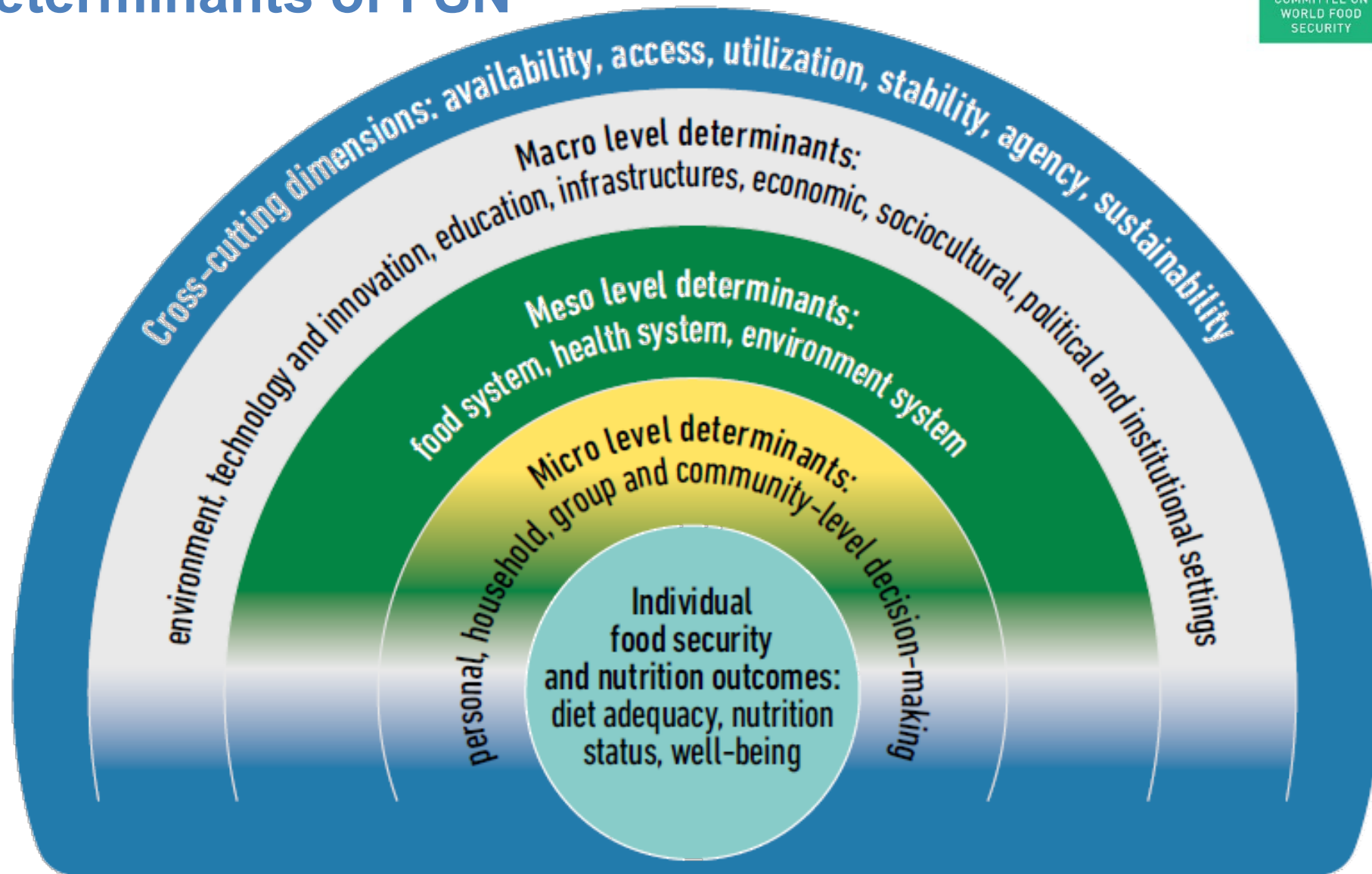
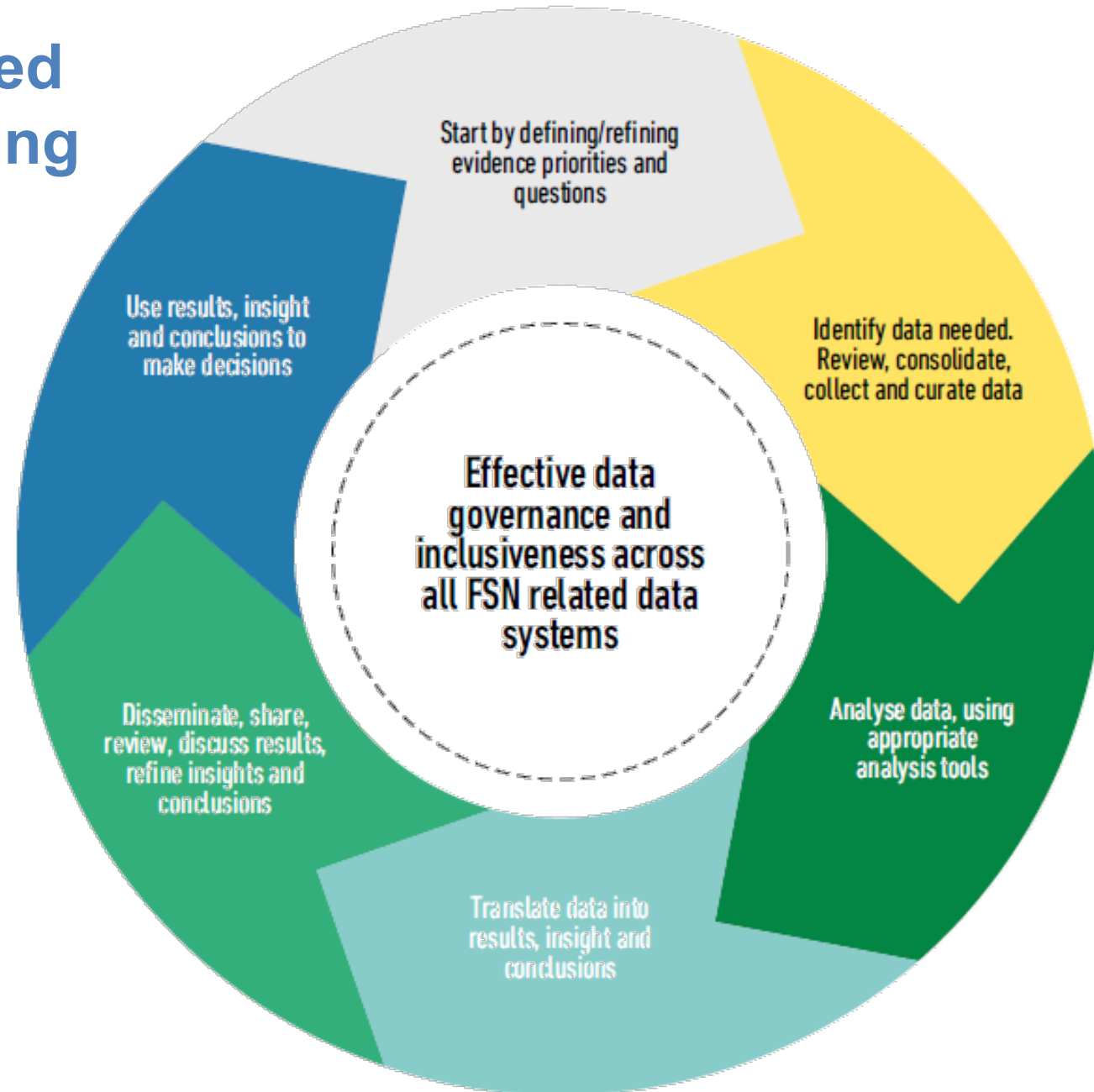# Frameworks

Adapted from existing frameworks:

- **A framework for a systemic view of FSN**
- **A data-informed decision-making cycle**

Combing both, a **data prioritization matrix** is proposed, whose completion could be used to set priorities for data and information for specific FSN- related decisions

A framework for a comprehensive assessment of the determinants 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 for FSN

Start by defining/refining evidence priorities and questions

Identify data needed. Review, consolidate, collect and curate data

Analyse data, using appropriate analysis tools

Translate data into results, insight and conclusions

Disseminate, share, review, discuss results, refine insights and conclusions

Use results, insight and conclusions to make decisions

Effective data governance and inclusiveness across all FSN related data systems

The data prioritization matrix could then be used to identify and address data needs for decision-making for specific FSN related issues

Level	Data cycle phase				
	Review, consolidate, collect, curate data	Analyse data using appropriate analysis tools	Translate data into results, insights, and conclusions	Disseminate, share, review, discuss results; refine insights and conclusions	Use results, insights and conclusions to make decisions
Macro					
Meso					
Micro					
Individual outcomes					

The key messages

Key message #1

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

Key message #2

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.

Key message #3

Several other constraints limit the effectiveness of data-informed policy action, especially in low-resource countries. Key among them is the <u>low level of data literacy and analysis skills</u> (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.

Key message #4

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 <u>global coordination to improve data governance</u>.

Particularly urgent is the need to reach agreement on the nature of <u>FSN data and information as a public good</u>, 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.

The overarching recommendations

The 7 overarching recommendations

1. **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.
2. 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.
3. Increase and sustain investment in the **collection of essential data for FSN**.
4. 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. Such efforts are accompanied by **technical and financial assistance to countries with limited capabilities**.

Overarching recommendations (con't)

5. Develop the necessary foundations of data and information analytic capacity for all stakeholders involved, by **investing** both **in human capital** and in the **needed infrastructures**, to ensure the sustainability of **data processing and analytic capacity**

6. Take bold actions in establishing a proper food security and nutrition data governance system at the global, regional and national levels, promoting inclusiveness to recognize and enhance agency among data users and data generators

7. Promote and defend the application of CARE and FAIR data generation and dissemination principles
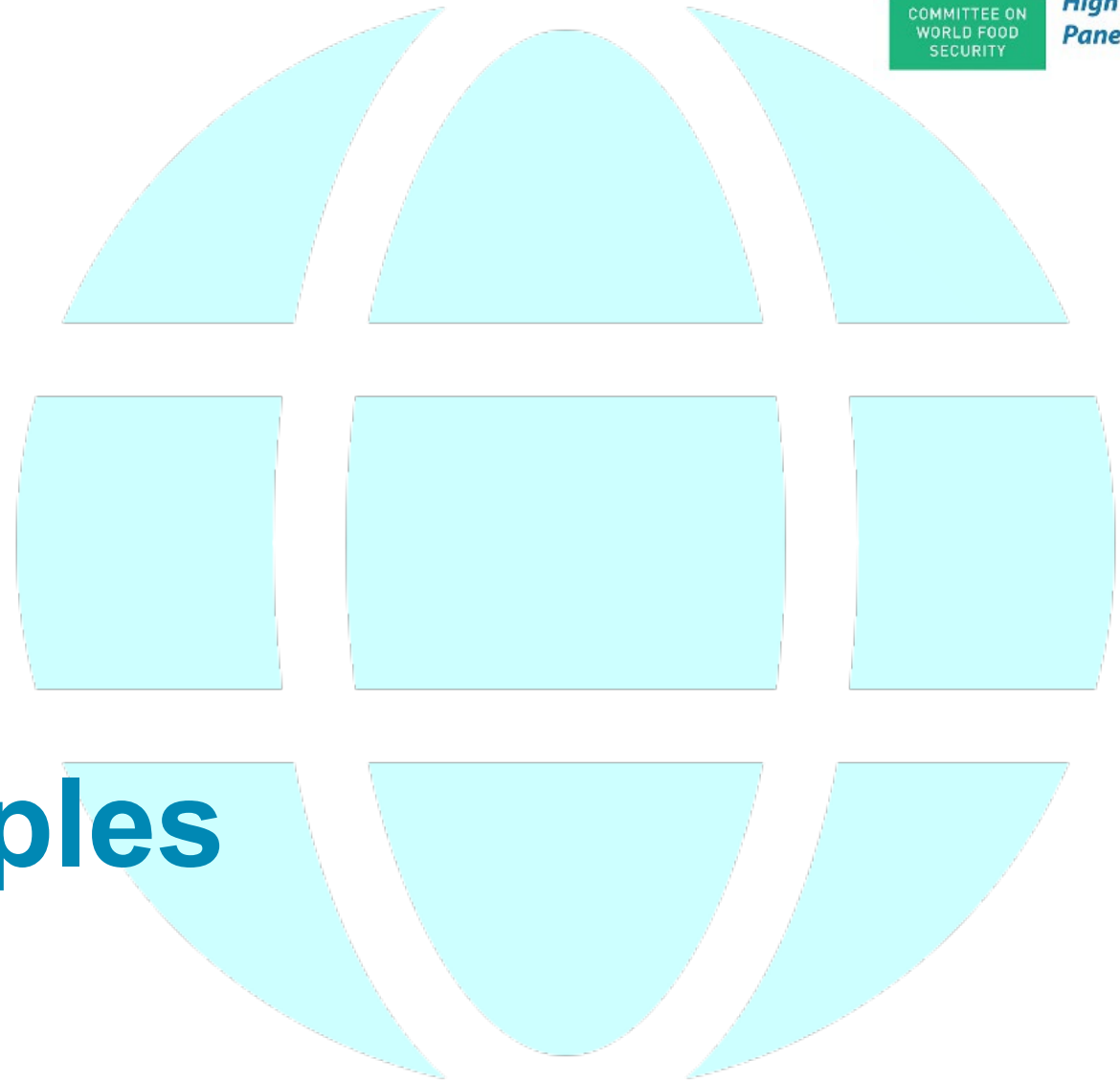
Specific examples

Specific examples

1. Organizations in the UN System could lay out **good practices for priority setting** guided by **frameworks for data decision-making**; and develop practical guidelines on **data-informed ex-ante and ex-post policy evaluation** in the FSN domain for national-level policymakers and administration.

2. Organizations in the UN System and national and international academic institutions should develop and promote the use of **e-learning and continuing education courses in data prioritization and utilization for policymakers**.

3. Donors, supported by international organizations and academia, should develop and use costing and cost-benefit analysis to assist policymakers to **estimate the cost tradeoffs of decision-making using data from varying sources**.

4. Governments, private sector agents, international organizations and research institutions, **complete a data-informed decision-making process matrix for FSN** each time they are requested to address a specific challenge.

5. For all FSN-related legislation and policy proposals, the responsible government authority include a **detailed data annex**, presenting **available data sources** and the **analytic tools** to be used for their treatment.

Specific examples (con't)

6. Organizations in the UN System may develop minimum standards that set clear criteria for **optimizing the use of existing data** in the area covered in their respective mandate, streamlining the processes to be followed when using data for decision-making in FSN; and prioritize all types of remote and digital data and the development of appropriate data-management plans;

7. Governments, using such standards, **review existing national data-collection systems relevant for FSN**, with the aim of identifying opportunities to streamline and modernize them, and enhance their efficiency and relevance;

8. Academic institutions throughout the world coordinate to consolidate existing FSN data and respond to the need for **continued innovation in the areas of data science and survey-based research** to address FSN questions;

9. International organizations that produce key FSN data form **a joint commission to harmonize and coordinate the release of datasets**, avoiding the publication of competing datasets on important FSN domains (such as food commodity balances, food prices and market prospects, food security assessments, etc.)

Specific examples (con't)

10. The UN System and donors may consider establishing a **Global Food Security and Nutrition Data Trust Fund**, to which governments of eligible countries and other stakeholders interested in generating and benefiting from data (including, for example, communities and organizations of Indigenous People) can apply to obtain necessary financial support to establish FSN data plans; conduct FSN assessment surveys for specific communities; create and own data dissemination platforms.

11. Governments should encourage **empirical analysis of existing FSN microdata** in administration, statistics institutes, agencies and universities; promote the hiring of statisticians, data scientists and experts in the analysis of qualitative FSN data; and **create an annual forum for data-informed discussion on national FSN policies**.

12. Governments, especially those of low- and middle-income countries where FSN data gaps are particularly large, **elaborate national plans to define priorities for FSN data collection and analysis** and to improve and optimize existing national data systems for FSN. Countries that require support should be supported both technically and financially by international organizations and donors, and should follow international standards, while **preserving country ownership**.

Specific examples (con't)

13. Donors; private entities in the information, communication and industrial technology sectors; civil society groups; and academic research institutions **invest in further refinement, validation and application of resource-saving data collection approaches**, such as remote sensing, natural resource scanning by drones and digital data collection tools;

    – Tools and technology that streamline and simplify data collection (such as REDCap) be used and promoted at all levels;

14. International organizations and academic research institutions **improve existing analytic models** and develop new ones to be employed in various areas of relevance for FSN decision-making

    – Especially relevant are **validated model-based approaches** to forecast future values of FSN determinants and outcomes,

    – Such models should be **transparent** and flexibly implemented so that they can generate predictions under clear, alternative scenarios, avoiding the use of black-box modelling.

Specific examples (con't)

15. Targeted **scholarship programmes** be created by national governments – and adequately funded by donors – to allow young people from low-income countries, especially girls, to study science, technology, engineering and mathematics (STEM) disciplines;

16. Governments take action to **expand primary and secondary education curricula to include statistics and data science** early in public education programmes;

17. National statistics offices **offer training opportunities to all staff**, of all ages, to enhance their competences in using open-source software for data analysis, and reward demonstrated achievement;

Specific examples (con't)

18. UN System organizations and international research institutions contribute to eliminating language barriers, by expanding the set of languages in which relevant e-learning platforms are offered;

19. International organizations, in collaboration with academic institutions, establish **criteria for the quality of e-learning materials for statistics and data science** and create a framework providing objective quality assessment and ranking of existing, open-access, on-line learning opportunities, to identify the best, up-to-date courses and draw attention where quality improvement is needed;

20. International organizations **avoid crowding out the local, relatively scarce, capacity**, by making all efforts to work closely with young professionals from national public institutions whenever the need exists to analyse FSN data at national and subnational levels.

Specific examples (con't)

21. Governments, international organizations, civil society, private companies and research institutions, both public and private, **comply with existing open-access principles for data and analysis tools, ensuring access to and reproducibility of relevant research results**, and continually adapt to enhance data access, as open-access principles and guidance evolve.

22. **All government data that refer to agriculture and FSN be treated as "open by default"** as recently endorsed by the UN statistical commission.

23. Governments and multilateral organizations in the UN System work to **improve legal frameworks that protect sensitive data** and privacy, developing accountability systems for their implementation.

Specific examples (con't)

24. FAO and other UN System organizations that have a mandate for agriculture, food and nutrition, develop a code of conduct for data generation and use, based on FAIR and CARE principles, that addresses the diversity of FSN data governance-related issues – including power imbalances, inclusiveness, the operationalization of open access and transparency principles – for all types of actions in data generation, consolidation and utilization; and that **FAO become a FAIR and CARE certifier for agriculture, food and nutrition datasets.**

25. The CFS explore the possibility of establishing one or more **data trusts for food security and nutrition**, where a subgroup of CFS members can act as trustees, receiving the legal right to make decisions – such as who has access to specific data and for what purposes – on behalf of the data owners; and that such a data trust may constitute the legal basis to support the sharing of data collected with funds obtained through the global FSN data trust fund.

26. The CFS might convene **a workshop, to assess the state of private data sharing in agriculture, food security and nutrition** and consider exploring the possibility of piloting the aforementioned data trust for food security and nutrition.
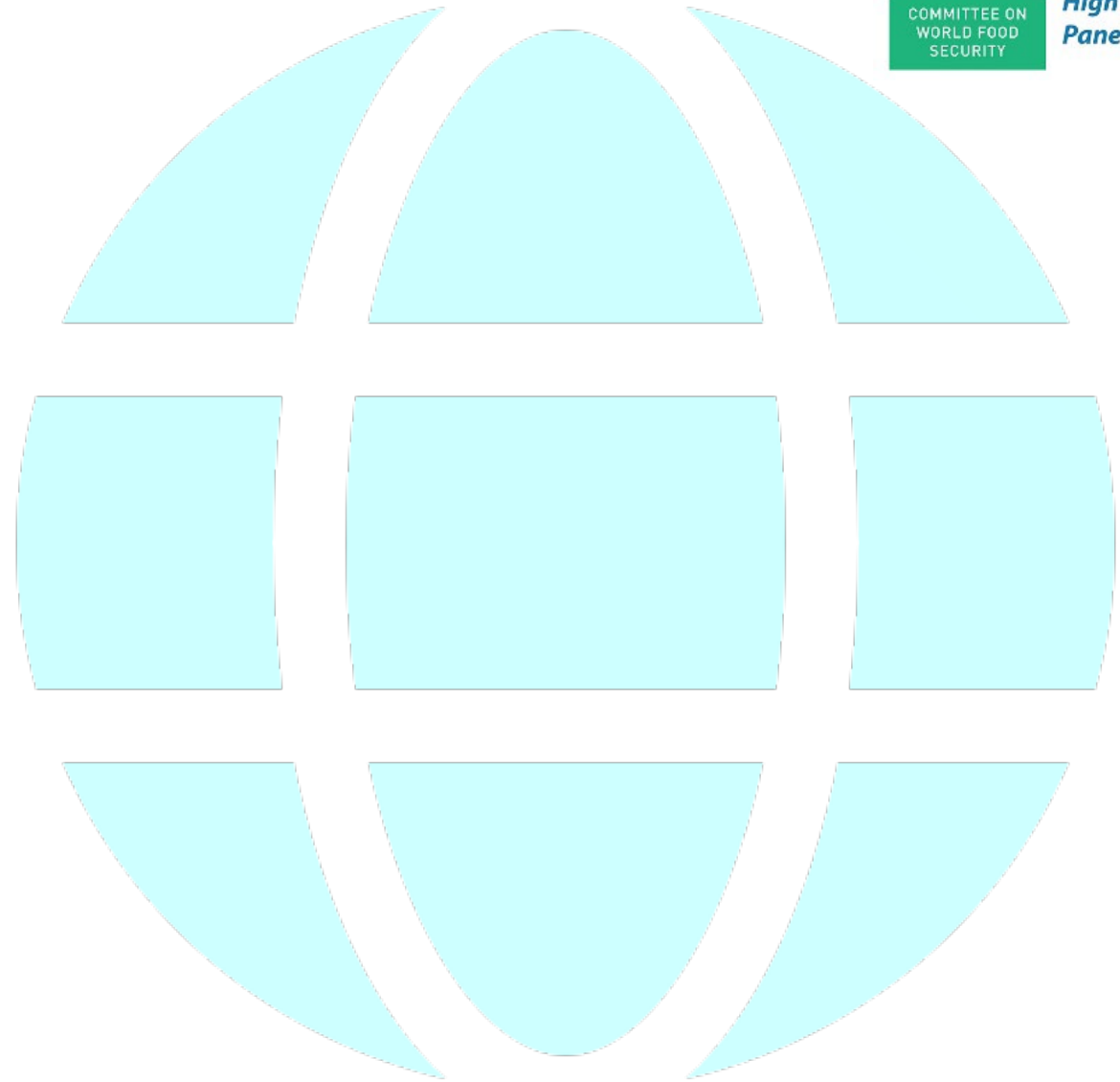
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Thank you!