Food and Agriculture Organization of the United Nations

USAID FROM THE AMERICAN PEOPLE

DIEM-Monitoring System

HOUSEHOLD SURVEY ANALYSIS:

Food security indicators

NEEDS ASSESSMENT TEAM, OER, FAO

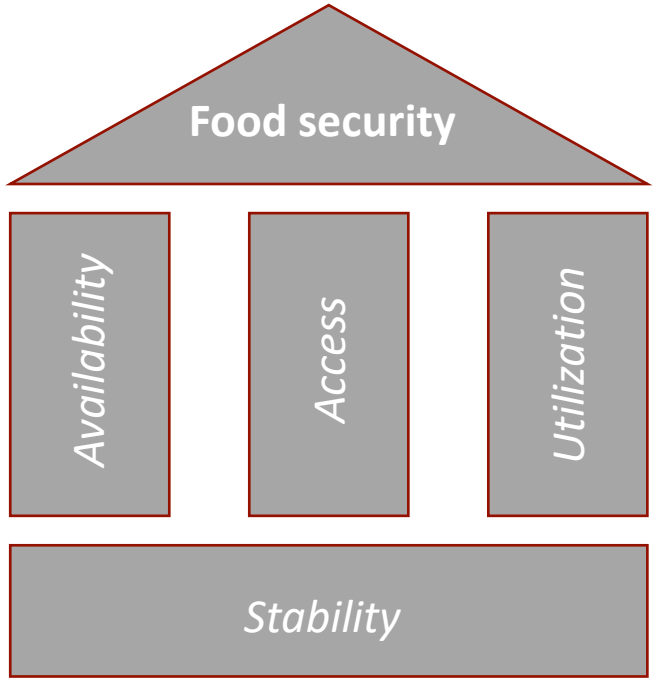
Food Security Indicators

*"Food security exists when **all people**, at **all times**, have physical, social and economic **access** to **sufficient safe and nutritious food** that meets their dietary needs and food preferences for an **active and healthy life**"*

(World Food Summit, 1996)

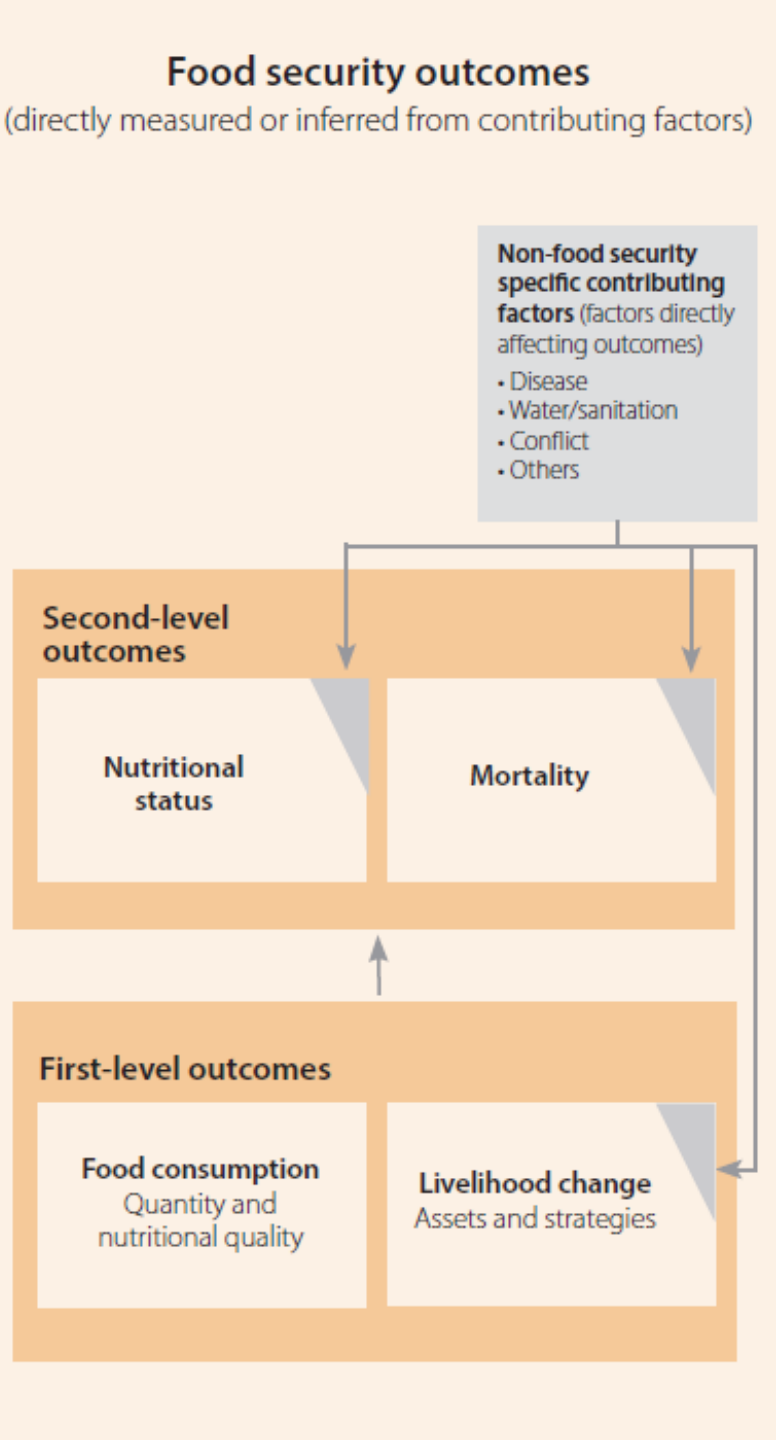
Four main dimensions:

- ✓ **Availability** → related to food production, international and national commerce, distribution within country.
- ✓ **Access** → ability of people or households to obtain food in a socially acceptable manner
- ✓ **Utilization** → proper *biological* consumption of food (influenced by health status, water and sanitation conditions, microbiological/chemical food safety)
- ✓ **Stability** → availability of food over time; more forward-looking dimension



Food Security Indicators

- The dimensions interact with one another.
- No single indicator is able to assess all the dimensions of food insecurity.
- Analysis of the interaction of dimensions and how they limit food security is important to confirm and contextualize outcome indicators.
- Several indicators to measure the different outcomes of food security.



Food Security Indicators

- Measures based on experiences of food insecurity
  - ✓ **Food Insecurity Experience Scale (FIES)**
  - ✓ **Household Hunger Score (HHS)**
- Measures based on dietary diversity and food frequency
  - ✓ **Household Dietary Diversity Score (HDDS)**
  - ✓ **Food Consumption Score (FCS)**
- Measures based on use of coping strategies
  - ✓ Food-based coping strategies: **Reduced Coping Strategy Index (rCSI)**
  - ✓ Livelihood-based coping strategies: **Livelihood Coping Strategy Index (LCSI)**

Food Insecurity Experience Scale (FIES)

- Provides estimates of the proportion of the reference population facing food insecurity at different levels of severity.
- Based on **8 core questions** asking about **experiences** associated with **limited ability to obtain food** (due to resource constraints) over a given recall period.

  ✓ In general, the reference period can be 12 months, 30 days, or both, depending on the survey's objectives and nature.

  ✓ In our monitoring system, we are using the FIES referenced to the **previous 30 days/ 4 weeks** → Allowing to monitor the impact over time, and measure acute/**recent food insecurity**

  ✓Here, we are also applying the FIES referenced to the **household** (household food insecurity)

The FIES 4-weeks household-referenced questions

Q1. During the *last 30 days*, was there a time when you or others in your household were **worried about not having enough food to eat** because of lack of money or other resources?

Q2. Still thinking about the *last 30 days*, was there a time when you or others in your household were **unable to eat healthy and nutritious food** because of a lack of money or other resources?

Q3. During the *last 30 days*, was there a time when you or others in your household **ate only a few kinds of foods** because of lack of money or other resources?

Q4. During the *last 30 days*, was there a time when you or others in your household **had to skip a meal** because of lack of money or other resources to get food?

Q5. Still thinking about the *last 30 days*, was there a time when you or others in your household **ate less than you thought you should** because of a lack of money or other resources?

Q6. In the *past 30 days*, was there ever **no food to eat of any kind in your house** because of lack of resources to get food?

Q7. In the *past 30 days*, did you or any household member ever **go to sleep at night hungry** because there was not enough food?

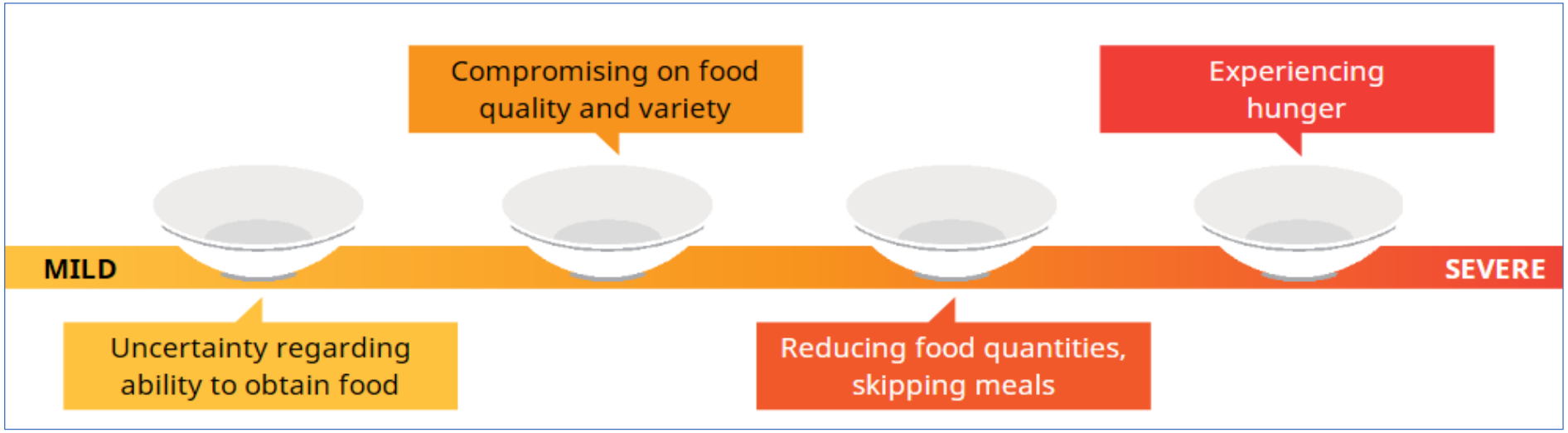
Q8. In the *past 30 days*, did you or any household member ever **go a whole day and night without eating anything at all** because there was not enough food?

- ✓ HHS wording
- ✓ And including follow-up frequency questions if answer is 'yes'

(same response options used in the HHS)

Food Insecurity Experience Scale (FIES)

- Key concepts related to the FIES methodology
  - ✓ **Each question cover a range of experiences** associated with **increasing levels** of food insecurity severity (difficulties in accessing food due to resource constraints).



Source: e-learning course on SDG Indicator 2.1.2, FAO (2018)

→ This is key to assessing the level of severity of food insecurity of each household!

Food Insecurity Experience Scale (FIES)

- Data analysis

  ✓ The production of the FIES estimates:

    - is based on an analytical approach that relies on a statistical probabilistic model, called Rasch model and/or Partial Credit Model.
    - aims to produce valid and reliable results by enhancing comparability across time and different applications through a process of calibration of the parameters of the local (or country) scale with a global reference scale (established by FAO).

  ✓ As for the other indicators, it is produced by the global team during Step 2 of data processing. It uses a complex function developed by the ESS's Food Security and Nutrition Statistics team, who is responsible for validating the FIES results.

Food Insecurity Experience Scale (FIES)

- Example of the output ("Country Prevalence rates.csv")

Prevalence and respective 90% margins of error for the indicators for which FIES estimates can be produced.

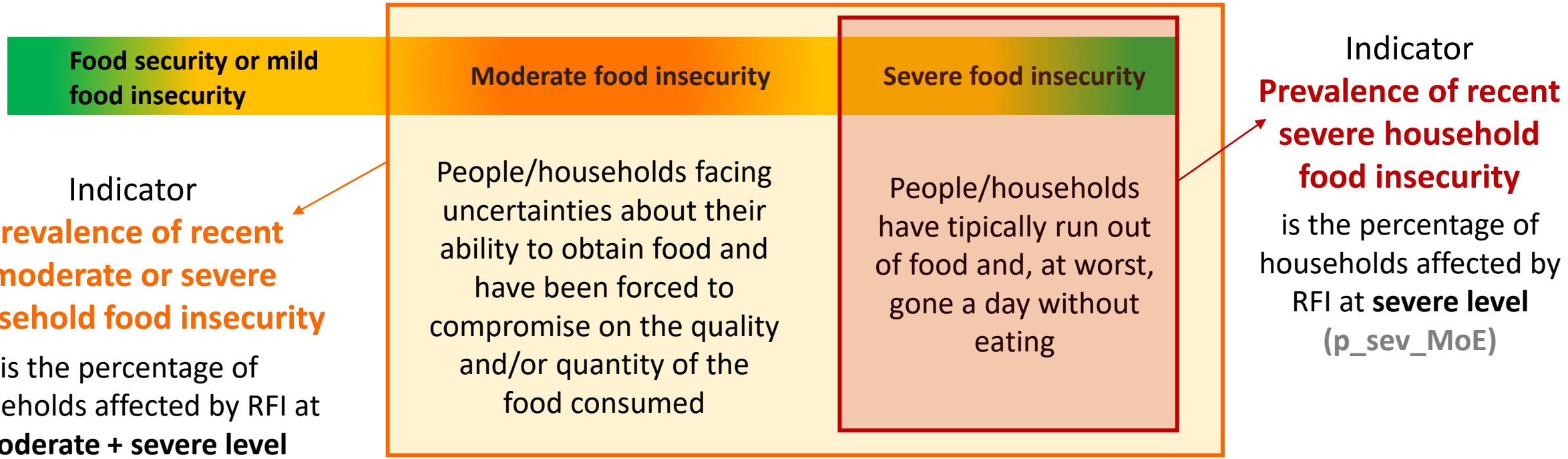
V13

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Disaggreg	N	P_mod	P_sev	P_IPC2+	P_IPC3+	P_IPC4+	P_IPC5	MoE P_m	MoE P_se	MoE P_IP	MoE P_IP	MoE P_IF	MoE P_IP	P_mod_Mo	P_sev_MoE	P_IPC2+_MoE	P_IPC3+_MoE	P_IPC4+_	P_IPC
2	**Total**	2597	0.484527	0.049696	0.527369	0.290097	0.00147	9.49E-05	3.139181	0.926618	3.182345	2.662368	0.09369	0.00724	48.5 (± 3.1)	5.0 (±0.9)	52.7 (± 3.2)	29.0 (± 2.7)	0.1 (±0.1)	0.0 (±
3	**admin1**																			
4	Eastern	417	0.509688	0.054859	0.563375	0.300168	0.00468	0.00032	6.811089	2.304056	6.795646	6.387958	0.37744	0.0344	51.0 (± 6.8)	5.5 (±2.3)	56.3 (± 6.8)	30.0 (± 6.4)	0.5 (±0.4)	0.0 (±
5	Northern	1105	0.511832	0.069474	0.543353	0.360132	0.00113	6.24E-05	4.681282	1.598891	4.665603	4.168797	0.12663	0.00939	51.2 (± 4.7)	6.9 (±1.6)	54.3 (± 4.7)	36.0 (± 4.2)	0.1 (±0.1)	0.0 (±
6	Southern	657	0.358142	0.019628	0.410083	0.14397	1.10E-05	3.50E-10	5.523874	1.191727	5.808329	3.258627	0.00356	1.96E-05	35.8 (± 5.5)	2.0 (±1.2)	41.0 (± 5.8)	14.4 (± 3.3)	0.0 (±0.0)	0.0 (±
7	Western	418	0.555113	0.046498	0.594302	0.331252	0.00026	1.40E-05	8.548008	2.276942	8.733001	7.19001	0.06358	0.00463	55.5 (± 8.5)	4.6 (±2.3)	59.4 (± 8.7)	33.1 (± 7.2)	0.0 (±0.1)	0.0 (±
8	**admin2**																			
9	District 1	170	0.339212	0.0012	0.403987	0.095181	2.51E-08	1.33E-12	9.356085	0.23846	9.891391	3.899815	0.0011	8.15E-06	33.9 (± 9.4)	0.1 (±0.2)	40.4 (± 9.9)	9.5 (± 3.9)	0.0 (±0.0)	0.0 (±
10	District 2	323	0.571946	0.130299	0.590671	0.443864	0.00088	4.63E-05	8.533564	4.040114	8.592866	8.111838	0.21028	0.01534	57.2 (± 8.5)	13.0 (±4.0)	59.1 (± 8.6)	44.4 (± 8.1)	0.1 (±0.2)	0.0 (±
11	District 3	180	0.650352	0.009269	0.724982	0.245824	2.43E-06	7.77E-11	8.311714	1.220287	8.027646	6.436231	0.00257	1.66E-05	65.0 (± 8.3)	0.9 (±1.2)	72.5 (± 8.0)	24.6 (± 6.4)	0.0 (±0.0)	0.0 (±
12	District 4	102	0.50854	0.012175	0.559839	0.203552	4.26E-06	1.34E-10	13.40011	2.148863	13.98239	8.40778	0.00412	2.37E-05	50.9 (±13.4)	1.2 (±2.1)	56.0 (±14.0)	20.4 (± 8.4)	0.0 (±0.0)	0.0 (±
13	District 5	182	0.699948	0.179497	0.719665	0.602768	0.00583	0.00033	10.46919	6.635155	10.18094	10.83947	0.73635	0.06149	70.0 (±10.5)	17.9 (±6.6)	72.0 (±10.2)	60.3 (±10.8)	0.6 (±0.7)	0.0 (±
14	District 6	180	0.560803	0.0351	0.633105	0.364739	2.55E-06	7.51E-11	9.566712	1.928854	8.840714	10.95351	0.00272	8.17E-06	56.1 (± 9.6)	3.5 (±1.9)	63.3 (± 8.8)	36.5 (±11.0)	0.0 (±0.0)	0.0 (±
15	District 7	211	0.696156	0.045444	0.740903	0.459537	4.57E-06	1.29E-10	8.710838	2.178855	8.20585	8.97382	0.00353	1.38E-05	69.6 (± 8.7)	4.5 (±2.2)	74.1 (± 8.2)	46.0 (± 9.0)	0.0 (±0.0)	0.0 (±
16	District 8	135	0.389314	0.173212	0.40245	0.306597	0.02365	0.00162	13.22042	9.413846	13.42687	12.07481	1.87276	0.22879	38.9 (±13.2)	17.3 (±9.4)	40.2 (±13.4)	30.7 (±12.1)	2.4 (±1.9)	0.2 (±
17	District 9	120	0.322397	0.00244	0.37453	0.108482	2.53E-08	9.52E-13	11.29605	0.338749	12.13436	6.073244	0.00095	6.73E-06	32.2 (±11.3)	0.2 (±0.3)	37.5 (±12.1)	10.8 (± 6.1)	0.0 (±0.0)	0.0 (±
18	District 10	209	0.439067	0.016614	0.462697	0.29318	1.83E-07	5.96E-13	11.04642	1.128371	11.07463	8.867494	0.00132	2.88E-06	43.9 (±11.0)	1.7 (±1.1)	46.3 (±11.1)	29.3 (± 8.9)	0.0 (±0.0)	0.0 (±
19	District 11	187	0.295154	0.067088	0.315492	0.21022	4.09E-05	1.30E-09	10.25057	4.281457	10.45518	8.96062	0.02403	0.00013	29.5 (±10.3)	6.7 (±4.3)	31.5 (±10.5)	21.0 (± 9.0)	0.0 (±0.0)	0.0 (±
20	District 12	180	0.25218	0.002108	0.305096	0.092016	1.78E-08	4.32E-13	8.529691	0.21841	9.049946	5.165697	0.00049	2.40E-06	25.2 (± 8.5)	0.2 (±0.2)	30.5 (± 9.0)	9.2 (± 5.2)	0.0 (±0.0)	0.0 (±
21	District 13	236	0.706882	0.071579	0.751821	0.468366	0.00112	6.28E-05	7.983908	3.195833	7.610973	8.700444	0.28349	0.021	70.7 (± 8.0)	7.2 (±3.2)	75.2 (± 7.6)	46.8 (± 8.7)	0.1 (±0.3)	0.0 (±
22	District 14	182	0.51151	0.039292	0.549048	0.29186	1.21E-05	3.76E-10	10.71957	2.787953	10.96894	8.89044	0.00743	4.00E-05	51.2 (±10.7)	3.9 (±2.8)	54.9 (±11.0)	29.2 (± 8.9)	0.0 (±0.0)	0.0 (±

Example FIES output Prevalence

Food Insecurity Experience Scale (FIES)

- The indicators of recent food insecurity (RFI) based on FIES are produced based on two separate set of thresholds
  - ✓ (1) The same as those used to define “moderate” and “severe” food insecurity in the context of the SDG monitoring process



Food Insecurity Experience Scale (FIES)

✓ (2) Thresholds set to correspond as closely as possible to the IPC acute food insecurity phases.

→ Useful for informing the IPC process

→ Enabling a proper comparison of FIES-based estimates with IPC-based assessments

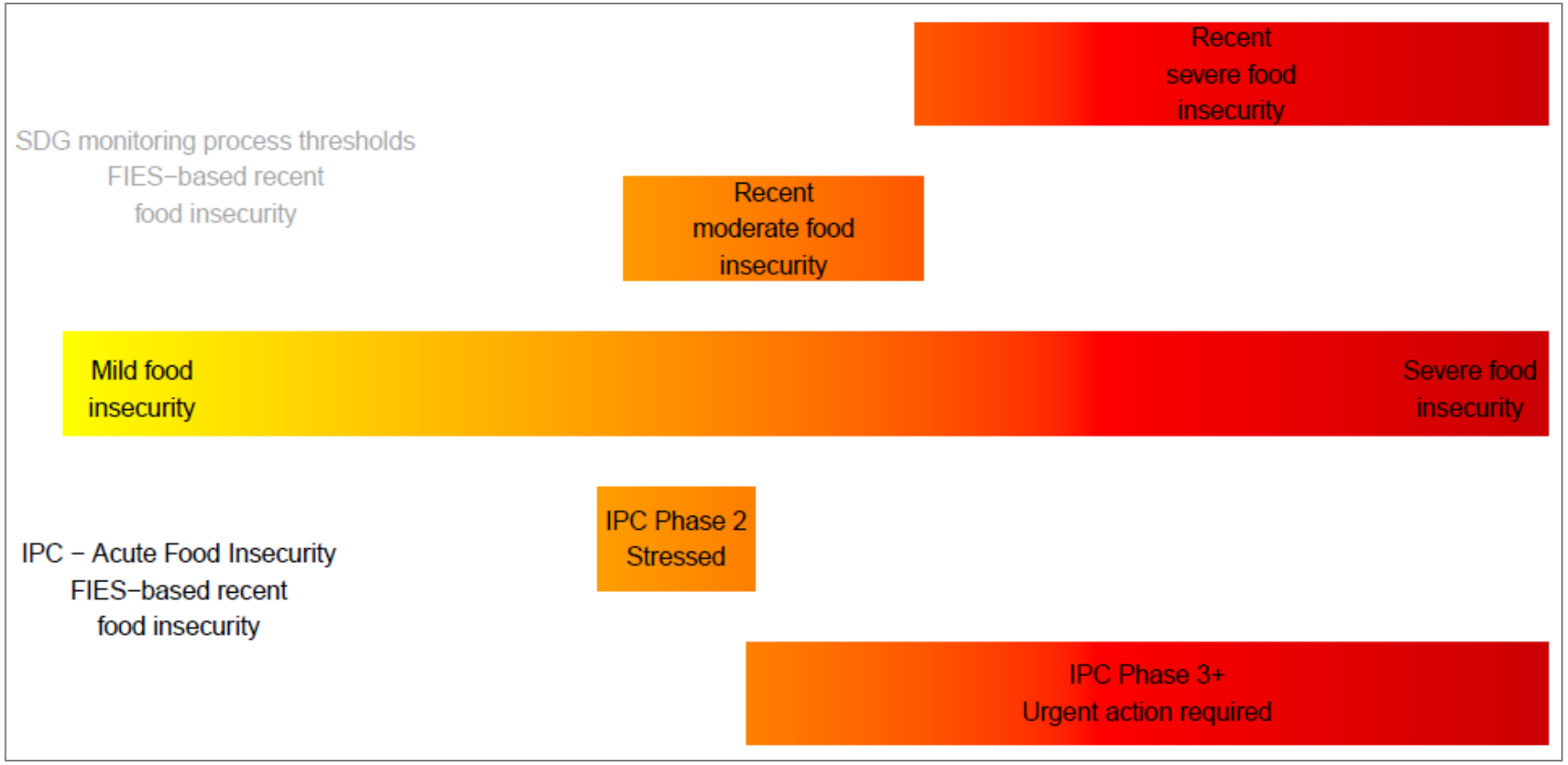
- The main indicator is the **Prevalence of recent household food insecurity aligned with definitions adopted in the IPC corresponding to severity levels equivalent to IPC Phase 3 or more**

  It corresponds to the percentage of households affected by RFI aligned with definitions adopted in the IPC for classifying households into "**Crisis or worse**" levels of acute food insecurity **(P_IPC3+_MoE)**

- It is also possible to obtain the prevalence of recent household food insecurity corresponding to severity levels equivalent to **IPC Phase 2 or more** **(P_IPC2+_MoE)**

Food Insecurity Experience Scale (FIES)

- ✓ The figure below shows the differences in terms of severity of food insecurity of each indicator (extracted from real data), illustrating the need for having IPC FIES-based indicators when aiming at comparing FIES results to IPC and helping interpreting them.



Food Insecurity Experience Scale (FIES)

- Important to note:

  - ✓ Although the FIES outputs produce results aligned with IPC Phase 4 or more and IPC Phase 5, classification based on these two categories are not endorsed nor recommended for the moment. **We do not report FIES results for IPC 4 or 5.**

  - ✓ **FIES items must not be analyzed separately.** When considered individually, each item is a poor indicator of food insecurity with limited discriminatory power. Together, each item will contribute information to measuring the range of severity of food insecurity and form a quantitative tool to measure the prevalence of food insecurity at different levels.

  - ✓ The classification into severity levels **are not** raw-score based

  - ✓ The questions are **NOT aimed** at assessing quality of the diet or quantity of food consumed.

Results to be disseminated for the FIES:

- Prevalence of recent moderate or severe household food insecurity (P_mod_MoE/ P_mod/ MoE P_mod)
- Prevalence of recent severe household food insecurity (P_sev_MoE/ P_sev/ MoE P_sev)
- Prevalence of recent household food insecurity aligned with definitions adopted in the Integrated Food Security Phase Classification (IPC) corresponding to severity levels equivalent to IPC Phase 3 or more (P_IPC3+_MoE/ P_IPC3+/ MoE P_IPC3+).

Household Hunger Scale (HHS)

- It is an indicator designed to measure household hunger in food-insecure areas, by asking households if they have **experienced food deprivation** in the **30 days preceding** the interview.
- Conditional to “lack of resources to obtain food”.
- Questions are **hunger-related experiences** (more severe experiences of food insecurity) shown to be **culturally invariant** across diverse sociocultural contexts.

Household Hunger Scale (HHS)

- Comprised of **3 occurrence questions**, each **followed by a frequency** question.

In the past 30 days…
Q1) … was there ever no food to eat of any kind in your house because of lack of resources to get food? (Yes/ No/ DK/ Refused)
Q1b) How often did this happen? (Rarely [1-2 times]/ Sometimes [3-10 times]/ Often [more than 10 times]/ DK/ Refused
Q2) … did you or any household member ever go to sleep at night hungry because there was not enough food? (Yes/ No/ DK/ Refused)
Q2b) How often did this happen? (Same as Q1b)
Q3) … did you or any household member ever go a whole day and night without eating anything at all because there was not enough food? (Yes/No/DK/Refused)
Q3b) How often did this happen? (Same as Q1b)

Household Hunger Scale (HHS)

- Methods for analysis

  ✓ Create a new variable for each frequency-of-occurrence question (to avoid losing original information)

  ✓Recode the newly created variables to:

  - **1** if the answer is '**Rarely**'
  - **1** if the answer is '**Sometimes**'
  - **2** if the answer is '**Often**'
  - **0** if the answer to the corresponding occurrence questions was '**No**'

  ✓Once this step is completed, the values for these variables are summed for each household and the HHS score is then obtained

  ✓The **HHS score** is a value ranging from **0 to 6**

Household Hunger Scale (HHS)

- Methods for analysis
  - ✓ The HHS scores are then used to generate the **HHS indicators**:
    - For IPC purposes:

HHS score	**IPC Phase** (IPC Global Partners, 2021)
0	Phase 1 (no hunger)
1	Phase 2 (slight hunger)
2-3	Phase 3 (moderate hunger)
4	Phase 4 (severe hunger)
5-6	Phase 5 (severe hunger)

Household Hunger Scale (HHS)

- Bear in mind:
  - ✓ Useful tool to assess the prevalence of hunger and inform policies and programming addressing the problem.
  - ✓ It does not measure the full range of severity of the experiences that are known to be associated with food insecurity
  - ✓ Appropriate for use in **severe food insecurity situations**; less relevant for areas where there is no food security crises or where it affects only the minority of people.
  - ✓ It does not quantify food consumption nor measures diet quality.

Household Dietary Diversity Score (HDDS)

- The HDDS is a qualitative measure of food consumption that reflects household's economic ability to access a variety of foods.
- It is based on food items that a **household** has consumed over the **preceding 24 hours**, which are grouped into **12 food groups**.
- It does not include foods purchased outside the home **and consumed** outside

Household Dietary Diversity Score (HDDS)

- The following food groups are used to calculate the HDDS indicator:

A. Cereals
B. Roots and tubers
C. Vegetables
D. Fruits
E. Meat/ poultry and offal
F. Eggs
G. Fish and other seafood
H. Legumes, nuts (and seeds)
I. Milk and milk products
J. Oils and fats
K. Sugar or sugary products
L. Condiments/ beverages

✓ Score is just a **simple count** of these food groups consumed the day before the survey (ranges from 0 to 12).

→ Make sure that the HDDS variables are coded as 0/1. If not, 'No' must be recoded to 0 and 'DK' or 'Refused' must be recoded to missing.

Household Dietary Diversity Score (HDDS)

- Once the HDDS scores are computed, it needs to be classified into categories to obtain the % of households reaching a given threshold

  ✓ Using IPC Thresholds

HDDS score	
5-12	High Dietary Diversity
3-4	≥ Medium dietary diversity
0-2	≥ Low Dietary Diversity

  ✓ Then, check and report the food groups consumed by **more than 50%** of the households in each category.

  → The result is a variable informing which are the food groups predominately consumed by >50% of the population in each class as per the categories above.

Household Dietary Diversity Score (HDDS)

- Be attentive that:

  ✓ It does not provide information on quantity used nor frequency of consumption of food groups.

  ✓The indicator is not meant to assess dietary diversity at the **individual level** (no information on intra household allocation of food groups or dietary diversity of vulnerable individuals).

  ✓ We use the IPC cut-offs, but other organisations or guidelines may suggest others.

Food Consumption Score (FCS)

- A **composite score** based on dietary diversity, food frequency and the relative nutritional importance of food groups at household level

- It asks about the **number of days** in which each food groups were consumed by the household in the preceding **7 days**
  - ✓ Capturing habitual diet while ensuring good reliability of respondent's memory

- A proxy of household's food access and household caloric availability
  - ✓ The questions only apply to **food eaten within the household** (not snacks eaten outside) and available to most household members

Food Consumption Score (FCS)

- *"How many days over the last 7 days, did members of your household eat…"*

1. Starches, roots and tubers: rice, maize, pasta, bread, sorghum, millet, potato, yam, cassava, white sweet potato?

2. Pulses and nuts: beans, lentils, cowpeas, soybean, pigeon peas and peanuts or other nuts

3. Vegetables or leaves: okra, eggplant, cauliflower, squash, spinach, green beans, etc.

4. Fruit: apple, apricot, banana, peach, mango etc.

5. Meat, eggs or fish: any beef, lamb, goat, rabbit, chicken, duck, or other birds, liver, kidney, heart, or other organ meats, fresh or dried fish, eggs.

6. Dairy products [Excluding margarine/butter or small amounts of milk for tea/ coffee]: any cheese, yogurt, milk or other milk products

7. Sugar or sweet: sugar, honey, jam, cakes, candy, cookies, pastries, cakes and other sweets and sugary drinks

8. Oil / fat / butter: vegetable oil, palm oil, groundnut oil, margarine, other fats / oil

9. Spices or Condiments: salt, garlic, spices, yeast / baking powder, tomato / sauce, meat or fish as condiment, coffee, tea.

Answers are:

✓ the numbers of **DAYS**

✗ **NOT** the number of times

Food Consumption Score (FCS)

- To compute the FCS, the consumption frequencies for each of the groups below are multiplied by standardized food group weights and then summed
- Note that the 'condiments group' is not included in the calculation

Food group	Weight
Main staples (starches, roots, tubers)	2
Pulses (and nuts)	3
Vegetables (or leaves)	1
Fruits	1
Protein-rich foods (meat, eggs or fish)	4
Milk (Dairy products)	4
Fats (Oils, fats, butter)	0.5
Sugar (or sweets)	0.5

✓ Before weighting, each group must have a value ranging from 0 to 7.

✓ Food group weights are based on nutrient density importance (greater importance to foods considered to have higher nutrient density, such as meat or fish, and less importance to foods like sugars or fats.

Food Consumption Score (FCS)

- FCS = (fcs_staple_days *2) + (fcs_pulses_days *3) + fcs_veg_days + fcs_fruit_days + (fcs_meat_fish_days *4) + (fcs_dairy_days *4) + (fcs_sugar_days *0.5) + (fcs_oil_days *0.5)

- Food consumption status of the household is determined by classifying it into food consumption groups (FCG) based on the frequency of the scores and the knowledge of the consumption behaviour in a given country/region.

✓ The **typical thresholds** are:

FCS	FCG
<21	Poor
21-35	Borderline
>35	Acceptable

✓ For countries with **high sugar and oil consumption** (e.g. North African and Middle Eastern countries):

- <28 = Poor
- 28-42 = Borderline
- >42 = Acceptable

Food Consumption Score (FCS)

- A key issue when thinking about the FCS is that:

  ✓ Food groups should be considered for the computation of the FCS **only when** consumed in **reasonable quantities**.

→ In many countries, especially among the poorest people, the use of meat/fish is done in very small quantities, for example, used only to give taste but not enough to feed an entire family.

In this case:

✘ It should not be computed as meat/fish consumed
✓ It must be considered in the condiments group

→ The nuance of what it is very small quantities is very subjective, and if enumerators are not properly trained, results will be biased causing an overestimation of food security.

Food Consumption Score (FCS)

- Limitations
  - ✓ If data is collected appropriately, it is a good indicator to capture quantity (energy) and quality (nutrient adequacy) of the food consumed in the household.
  - ✓ It is not sensitive to intra-household inequities and thus should not be used for interventions targeting individuals
  - ✓ FCS tend to be less sensitive to extreme cases of food insecurity. In acute food insecurity contexts, this indicator should be used alongside other indicators, such as experience-based indicators.

Reduced Coping Strategy Index (rCSI)

- It is an experience-based indicator collecting information on household use and the frequency of **5 different food-based coping strategies** over a **7-days recall** period to cope with the lack of food or money to buy food

In the past 7 days, how many days did your household … due to lack of food/money (to buy food):
Q1) Rely on less preferred or less expensive food
Q2) Borrow food, or rely on help from a friend or relative
Q3) Reduce the number of meals eaten in a day
Q4) Limit portion sizes at meal time
Q5) Restrict consumption by adults so children could eat

✓ Measuring less-severe coping behaviours, compared to the 'full' Coping Strategy Index (CSI)

Reduced Coping Strategy Index (rCSI)

- How to analyse it?

In the past 7 days, how many days did your household … due to lack of food/money (to buy food):	Frequency (0-7)	Severity weight	Weighted score
Q1) Rely on less preferred or less expensive food	7	1	7
Q2) Borrow food, or rely on help from a friend or relative	2	2	4
Q3) Reduce the number of meals eaten in a day	3	1	3
Q4) Limit portion sizes at meal time	5	3	15
Q5) Restrict consumption by adults so children could eat	6	1	6
		Total score	**35**

Reduced Coping Strategy Index (rCSI)

- How to analyse it?

  ✓ Once the scores are computed, classify households into categories for rCSI

rCSI score	IPC Phase (IPC Global Partners, 2021)
0-3	Phase 1 (none/minimal)
4-18	Phase 2 (stressed)
≥ 19	Phase 3 or more (crisis or more)

  ✓ For a broader understanding and better interpretation of results, it is recommended to disaggregate the rCSI data by wealth indicators, location and other vulnerability/potentially relevant variables.

Reduced Coping Strategy Index (rCSI)

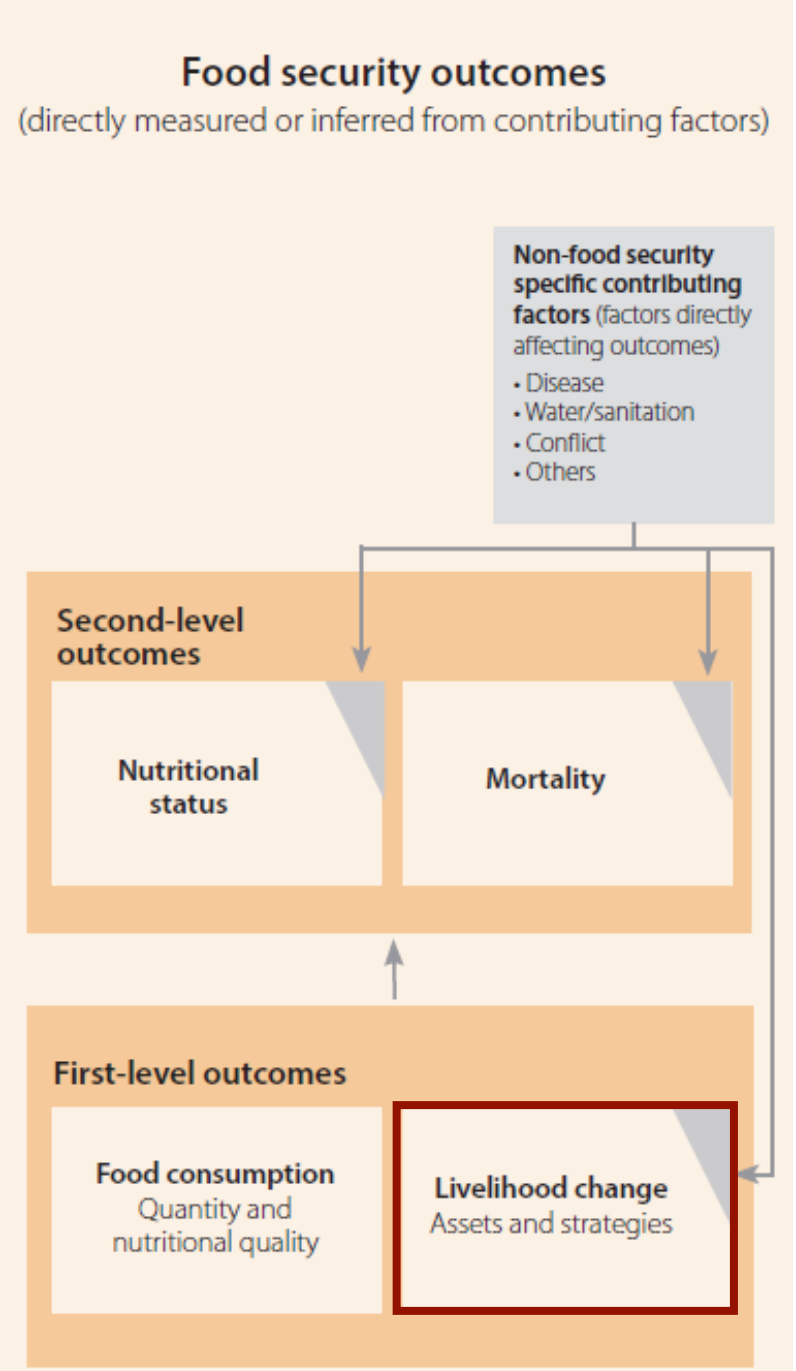
- Important to note:

  ✓ Best used for monitoring purposes and to identify changes in household food consumption behaviour in **early stages of a crisis**.

  ✓ Less relevant for severe and long-term emergencies where households may have run out of many food coping options.

  ✓ In very food insecure situations, rCSI alone is not a good measure and should be compared to and used along with other indicators.

  ✓ Better to use it together with other evidence.



Livelihood Coping Strategies Index

→Food insecurity may cause irreparable damage to livelihood, and so reduce self-sufficiency of the household (Bayu, 2013).

→**What is a livelihood?** A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (DFID, 2000)

→Livelihood Coping Strategy Index (LCSI) measures *livelihood changes.*

Livelihood Coping Strategies Index (LCSI)

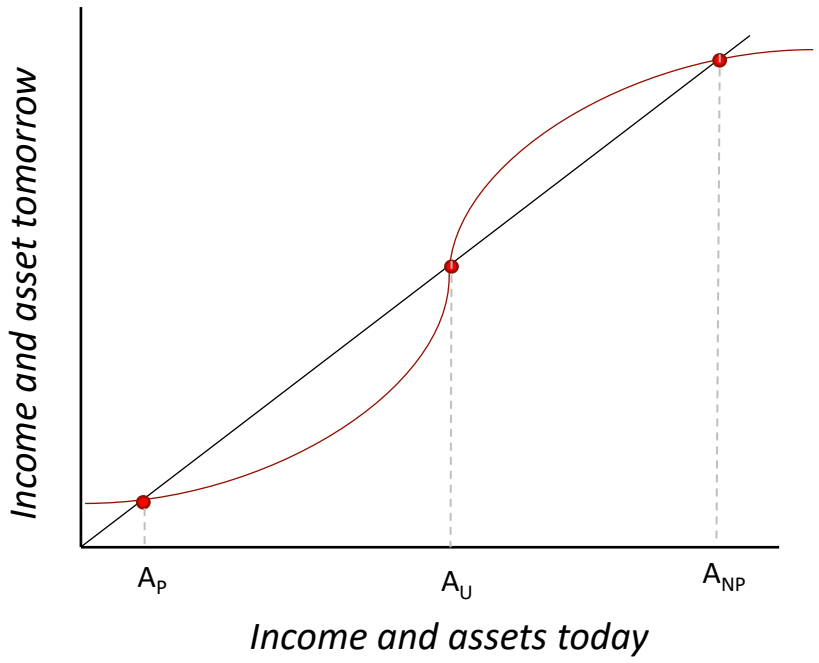
LCSI wants to see the extent to which households are resorting to unsustainable changes in their typical livelihood (i.e. coping strategies) in order to decrease food (or essential needs) gaps.

- *Unsustainable* livelihood change: refers to a decrease in (any) asset that support the livelihoods of the household
  - Assets include human capital (education, manpower), social capital, productive assets, etc.
  - If households have difficulties in securing their essential needs, they may engage in *unsustainable* strategies, such as selling productive assets.
- Livelihood changes must be carefully contextualised since households may engage in activities for reasons other than food insecurity. We check for strategies that are *not typical.*
  - Livelihood changes that are not driven by food insecurity (e.g. seasonal migration) may not be evidence of outcome-level changes.

Livelihood Coping Strategies Index (LCSI)

'**Poverty Trap**': a self-reinforcing mechanism that causes poverty to persist

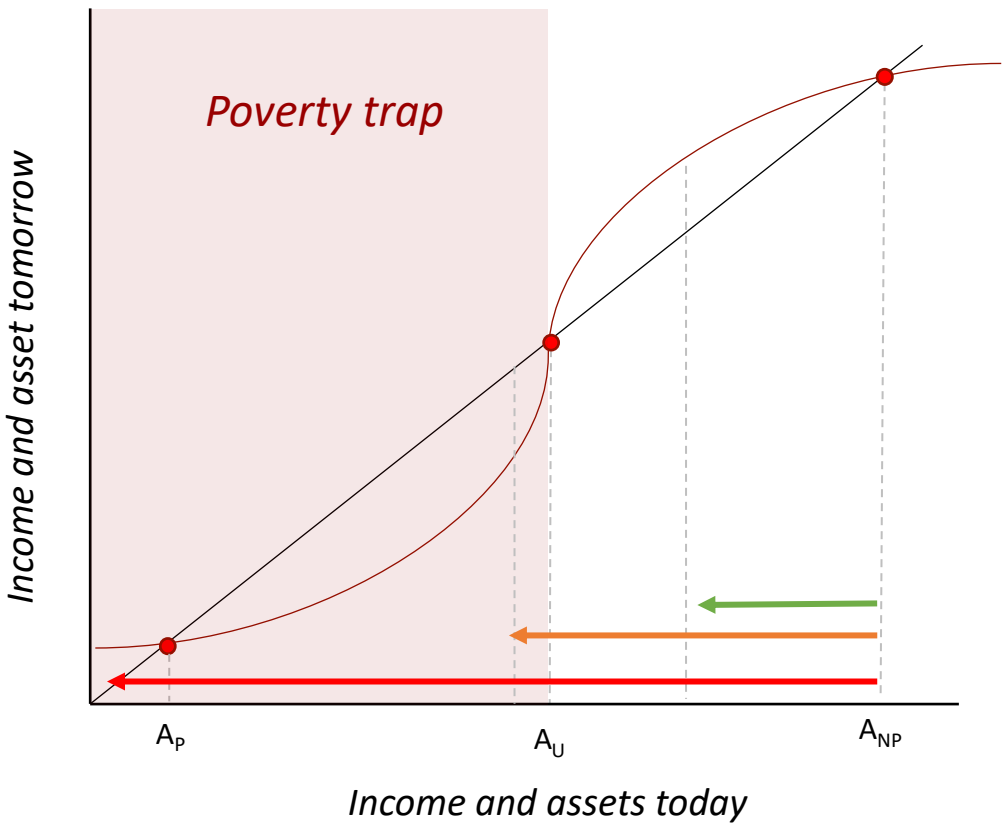
- *Diagonal line*: income and assets today = income and assets tomorrow
- *S-shaped curve*: those that are poor are stuck "below" diagonal line, i.e. future assets < assets today & continues to decrease over time



Money and assets today determine what you eat, how much money is spent on health, education, ways to improve your work, etc., which in turn influences your ability to generate income/assets in the future. Forgoing assets usually means reducing future income and assets.

<u>LCSI can be interpreted as a mechanism by which people with low income tend to become poorer over time</u> or at least face more constraints to grow economically than better-off households. Growth is limited for those who have too little to invest, since they have fewer assets to put into production.

Livelihood Coping Strategies Index (LCSI)



Livelihood are activities that provide a flow of resources (income, food, community services…).

Enter shock

→ performing these activities is interrupted, and therefore so is the flow of resources.

Coping strategies activities can be undertaken by the household to survive. There is a wide spectrum of coping strategies.

Livelihood Coping Strategies Index (LCSI)

→A “coping strategy” is a strategy that you would rather not have used in normal times, but you have to use to solve an unavoidable problem.

→Each coping strategy is assigned a **severity level** based on how much it affects the household’s future assets. The severity levels should be comparable across countries, but coping strategies must be contextualised to local livelihoods.

Livelihood Coping Strategies Index (LCSI)

Severity categories of coping strategies

All coping strategies are classified into **three** broad categories:

1. **Stress strategies** indicate reduced *ability to cope with shocks* due to a current reduction in resources, but not ability to make an income.
2. **Crisis strategies** directly reduce *future productivity* (hence ability to make a living) by depleting assets, including human capital formation.
3. **Emergency strategies** essentially indicate that you've *run out of assets*. These strategies are more dramatic in nature, and oftentimes extremely difficult to reverse.

Households not resorting to any of these strategies would be considered equivalent to **food secure** in this index.

Livelihood Coping Strategies Index (LCSI)

Severity categories of coping strategies

An easy way of conceptualizing the categories are as follows…

1. **Stress strategies** → does not affect future livelihoods (*ability to recover used assets*)
2. **Crisis strategies** → affects future livelihood by reducing current assets (*fall into poverty trap*)
3. **Emergency strategies** → run out of assets (*poverty; in need of humanitarian aid*)

Livelihood Coping Strategies Index (LCSI)

Questionnaire

Over the past 30 days, did anyone in your household [*insert coping strategy*] **because of lack of food or money**?

Severity	*Coping strategy*	*Target?*
Stress	Sell household assets/goods (radio, furniture, television, jewelry etc.)	
	Spend savings	
	Sell more animals (non-productive) than usual	Livestock owners
	Send household members to eat elsewhere	
Crisis	Sell productive assets or means of transport (sewing machine, wheelbarrow, bicycle, car, etc.)	
	Reduce expenses on health (including drugs)	
	Harvest immature crops (e.g. green maize) to eat	Crop producer
Emergency	Sell house or land	
	Sell last female animals	Livestock owner
	Migrate with the entire household	

Minimize bias by targeting all livelihoods

Livelihood Coping Strategies Index (LCSI)

Questionnaire: *Answer options*

Possible responses are consistent across the questions:

1. Not applicable
2. No; because is wasn't necessary
3. No; because I already sold those assets or have engaged in this activity within the last 12 months and cannot continue to do it
4. Yes

This means that the strategy was never an option, for the HH: in this case, maybe the HH farm plants with non-edible seeds…

These responses mean that the assets/capitals in questions have been depleted and they will recoded as 'YES'

Livelihood Coping Strategies Index (LCSI)

Basics of using LCSI in your survey

During the questionnaire design phase, make sure that:

- There are at least **4 stress** strategies, **3 crisis** strategies & **3 emergency** strategies (for a total of 10).
- Your coping strategies are **comparable** to previous rounds or to the baseline you will be using.
- You **contextualize** your coping strategies to the local livelihoods.
- All livelihoods in the targeted area are covered, per severity category.
  - If different livelihoods call for different strategies, make sure all livelihoods are covered per category level.

Livelihood Coping Strategies Index (LCSI)

Contextualization of the indicator

It is one of the most important steps when using the LCSI and involves a customisation of the questionnaire to local livelihoods.

- Review possible CS available to the **typical livelihoods** in target areas & make sure they are framed in terms of assets that matter to sustain local livelihoods.
  - Check for surveys that have previously used this indicator for reference.
  - If contextual information (e.g. on typical LCS) is lacking or selected LCS are not appropriate for the context, information received through this indicator can be of low value.
- Pay attention to the **season**.
  - The 30-day recall period affects reading of this indicator in context of seasonal changes.
  - E.g. Do not ask whether children have been removed from school during holidays.
- If the context calls for different **categorisation**, make sure it is reflected in variable name in your questionnaire.
  - "*Sale of last female animal*" can be classified as emergency CS in some contexts & stress in others.

Livelihood Coping Strategies Index (LCSI)

Data cleaning:

- Recode variables into *new* binary variables such that:
  - 1 = "*Yes*" OR "*No - because already exhausted this coping strategy within the last 12 months*"
  - 0 = "*No – because it was not necessary*"
  - . = "Don't know" OR "Refused" OR "*Not applicable*"
- Create three binary variables to capture which households employed *at least one* livelihood coping strategy for each level of severity (stress, crisis, emergency).
- Convert results to 4-point scale. For IPC purposes, the household is allocated to a group based on the most severe strategy used, where (0) no coping / food secure; (1) stress; (2) crisis; (3) emergency.

** Data cleaning is done at the central level under the DIEM-Montoring project.*

*** All coping strategies included in the questionnaire are use for the calculation of the LCSI, using the classification provided in the questionnaire (see questionnaire design SOPs).*

Livelihood Coping Strategies Index (LCSI)

Vizualising your data:

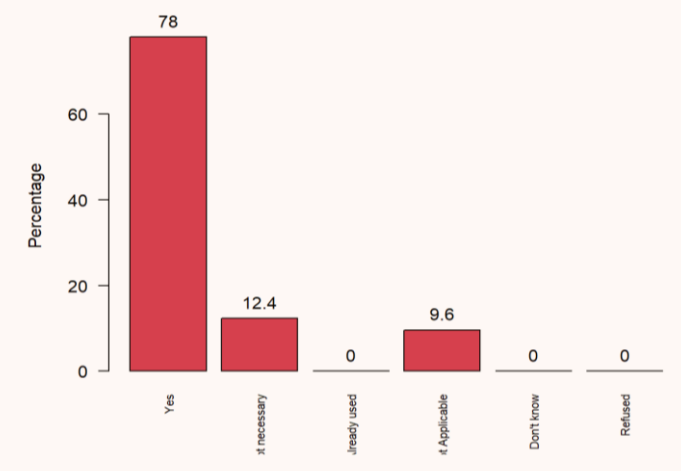
Visualize your data during data collection and post-data collection *using scripts, Staging Hub or HTML file* :

- Check the LCSI results
  - Are they expected?
  - Are there any weird patterns?
- Explore results of coping strategies individually
  - Do all coping strategies behave according to their pre-defined severity?
  - Are responses aligned with the livelihood zones?

Livelihood Coping Strategies Index (LCSI)

Common issues to look for:

- Misunderstanding of the coping strategy.
  - E.g. "Household migration" refers to the *entire* household migrating to a new area, not only *some* family members. If it is classified as emergency, other coping strategies should have been applied before migration.
- Bad categorization, i.e. inappropriate severity levels.
- CS question is not relevant to context, e.g. CS is common even in food secure periods.
  - E.g. in some countries, small swine producers do not breed but buy piglets at the market → *"Sales of last female livestock"* should not be an emergency CS if it is a common livelihood.
- CS are not relevant to *food insecure* times.
  - E.g. "Not sending children to school" should not be used during holidays.



GROUP DISCUSSION

What are some coping strategies that are normally used in your countries, but are not part of the "standard" catalogue?

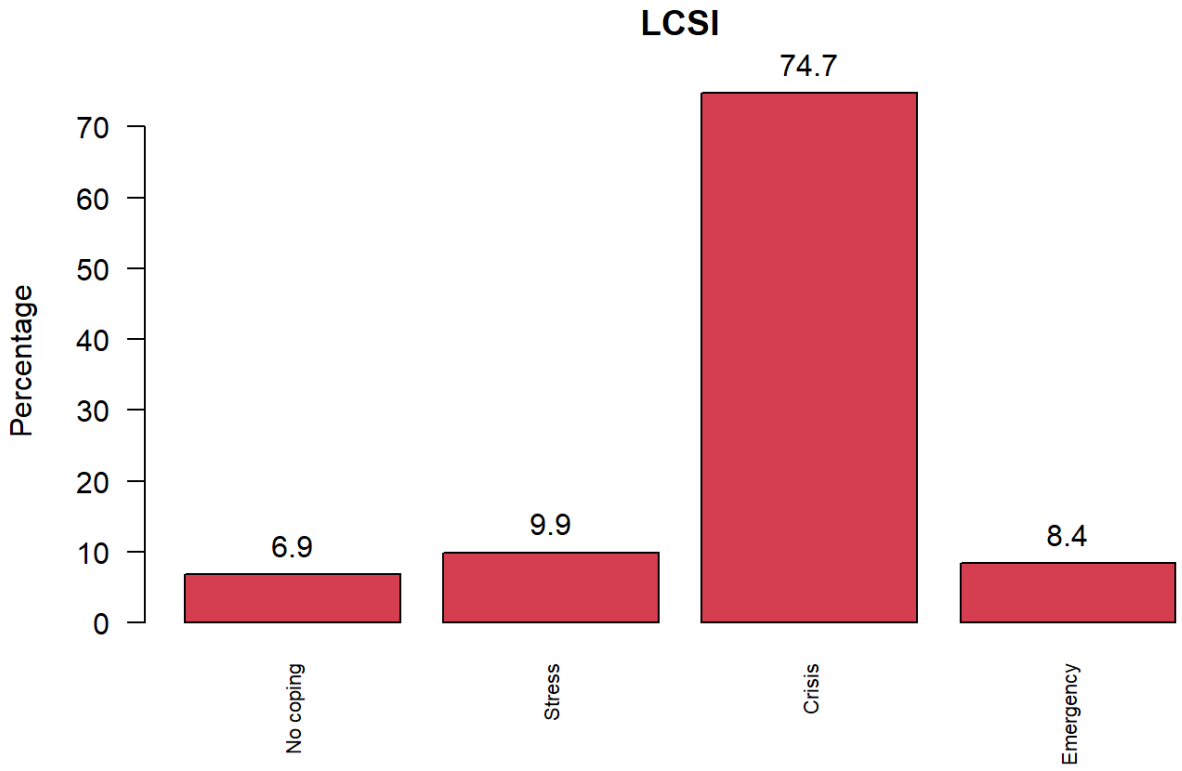
Livelihood Coping Strategies Index (LCSI)

Example: Iraq

Visualizing the LCSI on a bar graph, the results seem strange…

83% of households report resorting to crisis/emergency coping strategies.

There seem to be no high scores on minor strategies…

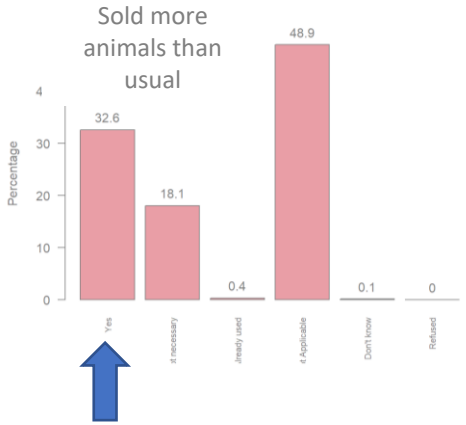


Livelihood Coping Strategies Index (LCSI)

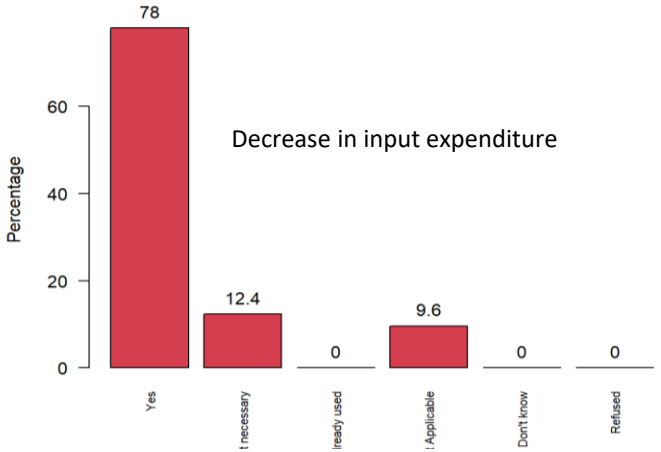
Example: Iraq

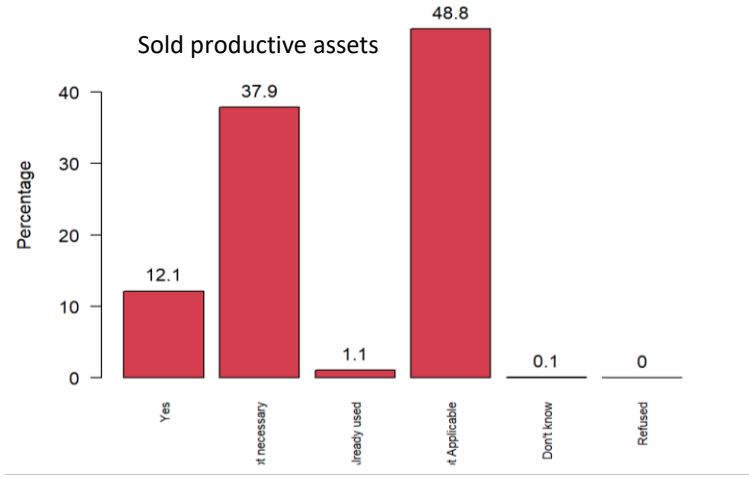
Looking at the use of coping strategies breakdown…

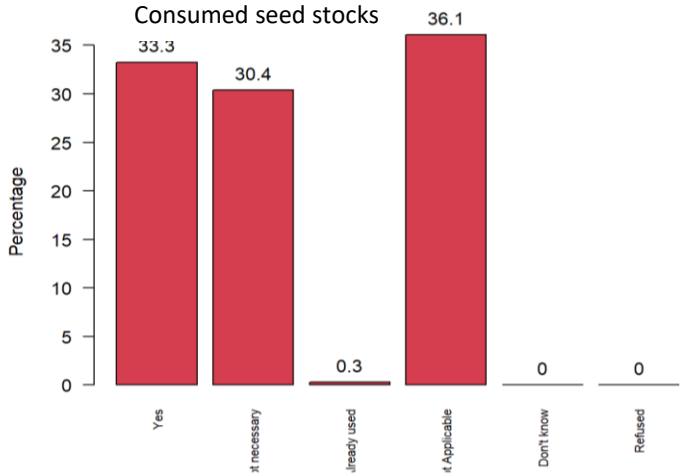
STRESS



CRISIS







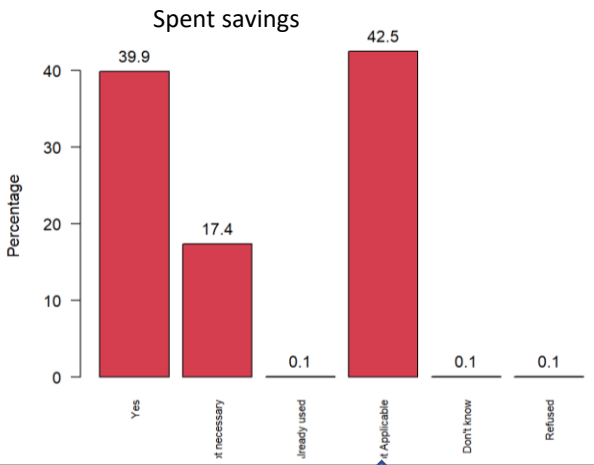
*The **crisis-level CS** is systematically used more often than **all stress-level CS** by households.*

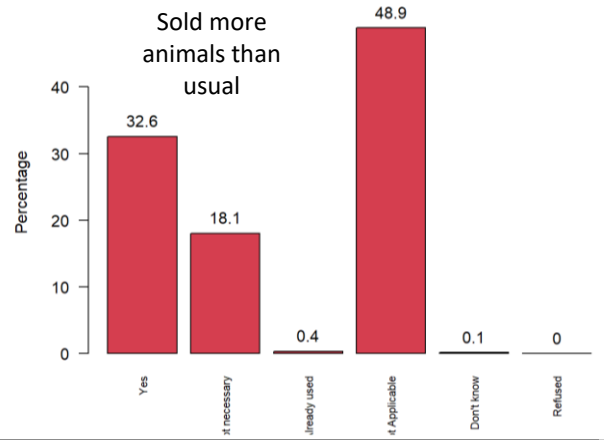
Livelihood Coping Strategies Index (LCSI)

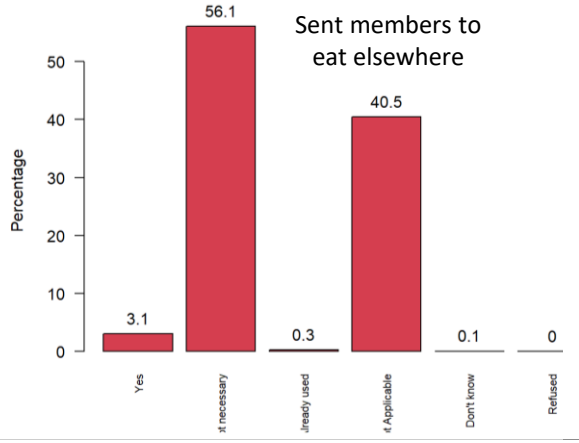
Example: Iraq

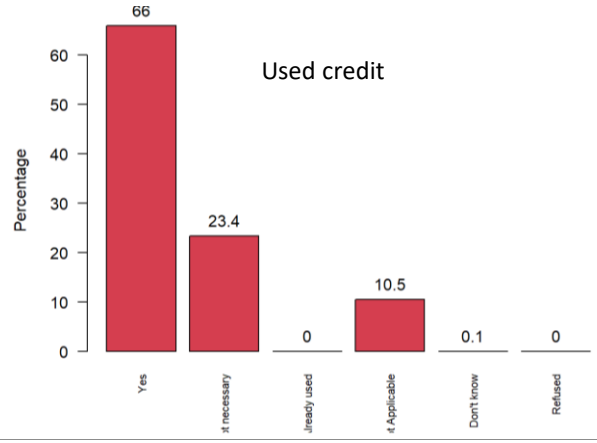
Looking at the use of coping strategies breakdown…

STRESS

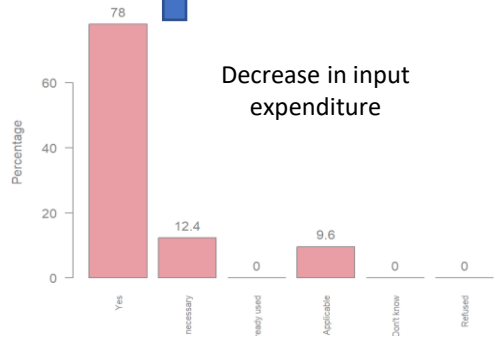


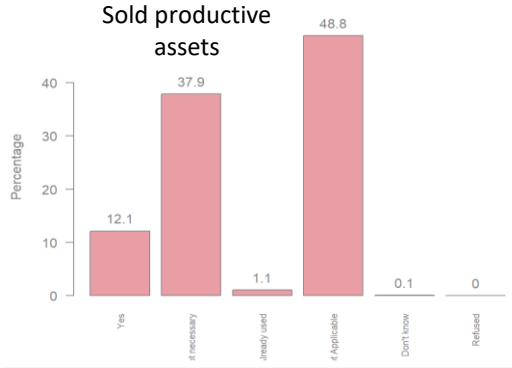


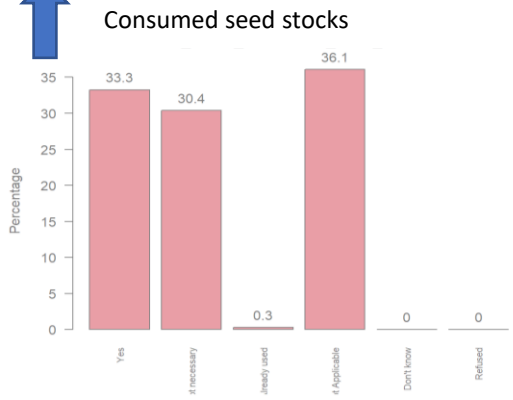




CRISIS







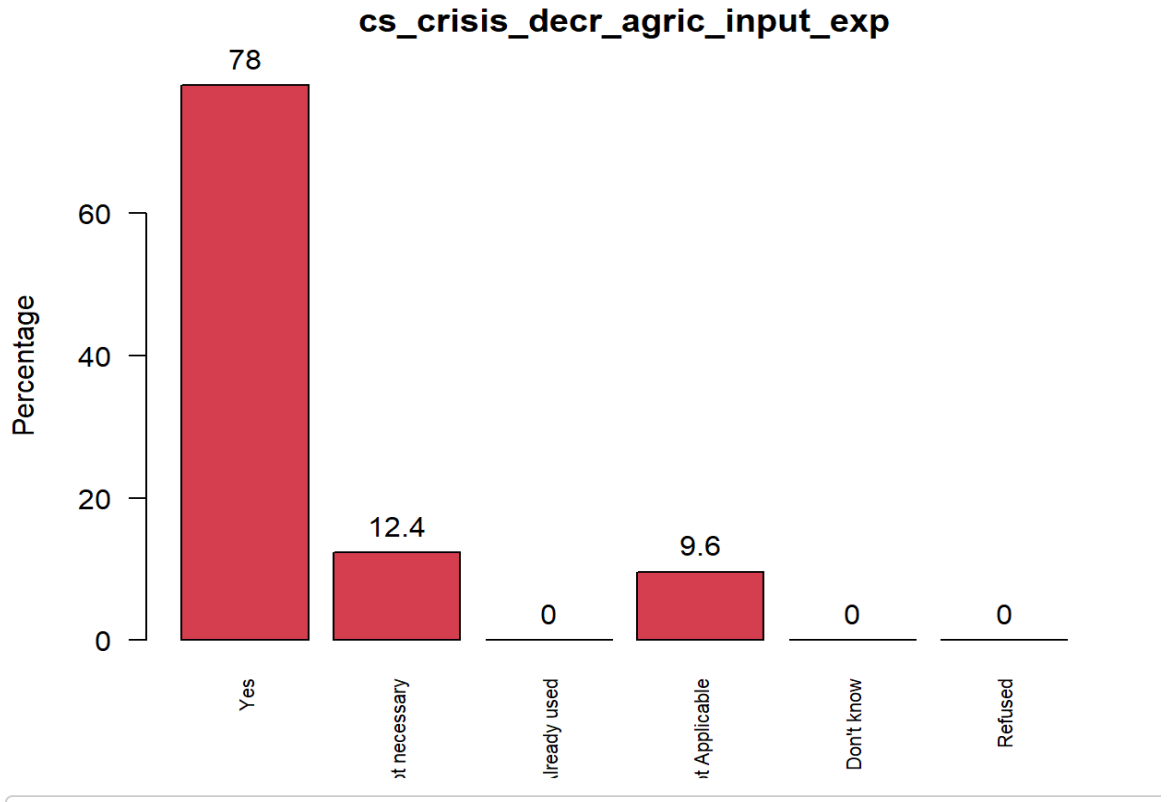
Not applicable responses are high, but these strategies should be applicable to all households.

Livelihood Coping Strategies Index (LCSI)

Example: Iraq

Questions to ask yourself include:

- Do these results make sense for Iraq?
- Does a decrease in agricultural input expenditure actually reflect a crisis-level CS? Could the household fall into a poverty cycle due to this CS?
- Is the decrease in agricultural input expenditure more severe than the other stress level CS?
- Would this CS be considered typical in Iraq?



GROUP DISCUSSION

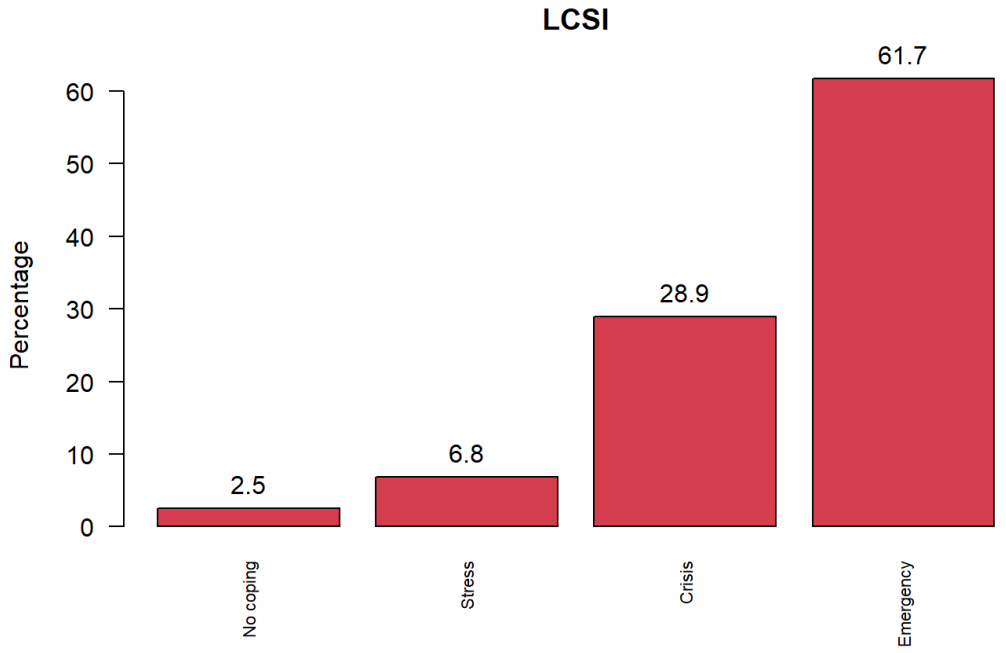
What are coping strategy questions that were used in your countries but showed strange results?

Livelihood Coping Strategies Index (LCSI)

Example: Afghanistan

Looking at the dataset, the pattern for LCSI is quite unusual and unexpected…

Digging into the data, we find an **internal incoherence** with the data: *A large part of households that indicated "selling the last female livestock" or "selling last draught animal" (both emergency level CS) also indicated having >100 cattle.*



Livelihood Coping Strategies Index

Example: Afghanistan

Sell household assets/goods (radio, furniture, television, jewelry etc.)
Spend savings
Sell more animals (non-productive) than usual
Borrow food or relied on help from friends or relatives
Sell productive assets or means of transport (sewing machine, wheelbarrow, bicycle, car, etc.)
Reduce expenses on health (including drugs)
Consume seed stocks that were to be saved for the next planting season
Sell house or land
Sell last draught animals
Sell last female animals
Migrate with the entire household

Sell **non-productive** household assets / goods (**clothes, carpet**, furniture, radio, television, refrigerator, jewelry, etc.)
Spend savings **and skipped debt payment**
Sell more animals (non-productive) than usual **(on a sustainable basis)**
Borrow money **(from a formal lender/bank/non-relatives)**
Sell productive assets or means of transport (sewing machine, wheelbarrow, **tools, animals,** bicycle, car, etc.)
Reduce essential **non-food expenses** on health (including drugs) **and education**
Harvest immature crops or let animals graze immature crops
Consume seed stocks that were to be held/saved for the next planting season
Decrease expenditures on farming inputs (fertilizer, pesticide, seeds etc.)
Decrease expenditures on livestock inputs (fodder/feed, de-worming, vaccinations, consultations, drugs etc.)
Sell all productive animals
Forgone farming all your land this year for lack of rain or factors
Send family members for wage labour (near villages/district center or provincial center)
Have child (<15) household members marry
Sell house or **all your** land **(cultivable) or entire herd**
Migrate with whole household (**typical migration for job search not included**)

Livelihood Coping Strategies Index (LCSI)

What to do if you detect an issue?

There is no one-size-fits-all solution, but possible actions include:

- Reclassifying the severity level of a coping strategy.
- Changing the formulation of the coping strategies to better reflect local context.
- Identifying coping strategies that are commonly used in the country and may not be part of the standard catalogue
  - E.g. marrying your daughter earlier than desired for dowry or enrolling in military forces for lack of other employment opportunities.
- Use your survey to assess the severity or relevance of specific coping strategies. E.g. add a question to understand how the coping strategy affects your household.

Livelihood Coping Strategies Index (LCSI)

Consultation with IPC partners

Once you have identified:

- Issues with current severity classification
- Correct severity level for coping strategies
- Other relevant coping strategies commonly used by the population

Make a **proposal** for a new list of coping strategies for the country and present your finding to the IPC partners.

Coping Strategies Index

BEST PRACTICE: Gaza Strip Coping Strategy study

- Gaza Protection Consortium (GPC) and Cash Working Group (CWG) studied LCSI in the context of Gaza Strip on ECHO's request (2022)
- **Problem**: Too many agencies using LCSI with no coordination resulted in limited comparability of results & poor overview of households' vulnerabilities
  - Not able to triangulate results across agencies
  - Affected broad understanding of humanitarian landscape in area
- Conducted a literature review & data collection to explore issue and seek ways to revise the LCSI
- New LCSI piloted end of 2021; to be piloted in next 6 months for further refining.

Indicators/Questions	Severity coefficient
At least one additional member seek employment or any income source, including daily labor, street vending, engaging in dangerous work practices (e.g., dangerous constructions, etc.) or any instance of moving away from home to seek work	1
Re-sharing the housing unit with other nuclear families (including with parents' house)	3
Relocating to a cheaper/smaller housing unit	3
Sold any not productive assets (e.g., jewelry, furniture, etc.)	4
Borrow/rely on help from friends, relatives, or neighbors for staple food or borrow money to spend on food or essential household needs	4
Raising livestock/poultry in the housing unit as a source of food for your family (e.g., in the living room)	5
Sold any productive assets (e.g., livestock, electronics, land, etc.)	6
Sold the entire house (e.g., moving to rental)	7
Engaging in socially unacceptable or degrading activities, such as begging	8
Delay seeking medical attention for critical health problems	9
Stop sending children to school to engage them in working for economic gain and/or productive household activities (to collect firewood/fetch water/work etc.)	10
Engaging in illegal activities (e.g., driving a taxi without a license, illegally selling in the streets without getting approval from municipalities, robberies, pick pocketing, etc.)	10
Marrying daughters earlier than otherwise planned (under 18yo)	10
Marrying sons earlier than otherwise planned (under 18yo)	10

Source: https://reliefweb.int/sites/reliefweb.int/files/resources/gpc_thematic_studies_livelihood_coping_strategy_index_revised.pdf

Use *food security indicators* in analysis

Once results all food security results are internally validated by the analyst (through internal coherence and triangulation), the analyst should further analyse the indicators based on country needs.

- Who are the food secure? What are the profiles of the most food insecure respondents?
  - Regional distribution (possible through dashboard)
  - Education level, gender & other characteristics of the head of household
  - Agricultural v. non-agricultural households

FS is a complex concept with various dimensions interacting.

Remember that they are complementary. Different indicators give you different stories, so interpret them carefully.

Food Security Indicators

- Measures based on dietary diversity and food frequency
  - ✓ **Household Dietary Diversity Score (HDDS)**
  - ✓ **Food Consumption Score (FCS)**

  help to understand the quality and nutritional value of food that people are eating

- Measures based on experiences of food insecurity
  - ✓**Household Hunger Score (HHS)**
  - ✓ **Food Insecurity Experience Scale (FIES)**

  best used to understand the severity of food insecurity

  help to understand the quantity of food consumed but do not provide insight into its nutrition value

- Measures based on use of coping strategies
  - ✓ Food-based coping strategies: **Reduced Coping Strategy Index (rCSI)**
  - ✓ Livelihood-based coping strategies: **Livelihood Coping Strategy Index (LCSI)**

  help to understand the coping strategies to maintain food consumption

Thank you for your attention!