MULTI-SECTORAL SURVEILLANCE SYSTEM IN COVID-19 CONTEXT

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Action against Hunger, France

SUMMARY

WHAT IS IT FOR AND WHY IS IT IMPORTANT?

The covid-19 pandemic will affect the public health situation and generate many secondary economic and social effects in each of ACF sectors of intervention, creating multi-sectoral stresses. Therefore, documenting these trends through systematic collection, analysis, and interpretation of specific multi-sectoral data, is highly needed to input the identification of new gaps, and adequately and timely adapt programming.

The multi-sectoral surveillance system is an alert system, providing early warnings on emerging threats in order to allow cross-cutting, adaptive programming. The missions are not expected to set up and use all the holistic recommendations, but rather, make a selection of relevant information to watch in their context, with the objective to **contribute to and fill the gaps of existing surveillance systems.**

The information generated with this surveillance system should:

❶ **Provide relevant sectoral and multi-sectoral information to help in the identification of priorities and in the definition of informed quality interventions** at the various levels of the missions, partners, clusters, authorities and communities of the area.

❷ **Monitor the evolution of the situation**, and allow to generate a robust database, for future evaluations, analyses and eventually operational research.

WHAT WILL YOU FIND IN THE DOCUMENT?

- Guidelines on the process to contribute to the development and use of a surveillance system
- Detailed lists of cross-cutting and multi-sectoral indicators
- Recommendations on sampling methods

WHAT ARE THE KEY STEPS TO USE THIS DOCUMENT?

- Assess key cross-cutting information to be monitored in your context
- Assess the existence and gaps of the multi-sectoral surveillance mechanisms at local levels and identify where ACF can play a part
- Based on the recommendations of this document, contribute to the set up and run the surveillance system
- Use the generated data to adjust programs and widely share information

WHAT SUPPORT CAN BE PROVIDED TO MISSIONS?

Such a system should be jointly built and managed, by the sectoral technical teams (HoD) and MEAL teams, in collaboration with other partners, clusters and local authorities. Technical support from ACF France Headquarter will be available through the Technical Advisors and the Research and Analysis team, on methods of data collection, analysis and use of data.

Table of contents

Summary 2

1. Acronyms 4
2. Rationale of a surveillance system 5
3. Objectives and characteristics of the multi-sectoral surveillance system 6

3.1. Objectives 6

3.2. How to develop and use a surveillance system in the covid-19 context? 7

4. Cross-cutting monitoring 9

4.1. Context monitoring, non-specific to covid-19 measures 9

4.2. Monitoring of measures related to covid-19, taken by the authorities 10

5. Monitoring impacts on livelihoods and food security 12
6. Monitoring impacts on global health and nutrition 14
7. Monitoring impacts on MHCPGP 15
8. Monitoring impacts on Wash 17

Annex 1 – Cross-cutting non-covid-19 related indicators 20

Annex 2 – Cross-cutting indicators related to covid-19 measures 21

Annex 3 – Food Security & Livelihoods indicators 25

Annex 4 – Global health & nutrition indicators 28

Annex 5 – MHCPGP indicators 30

Annex 6 – Wash indicators 33

Annex 7 – Minimum key indicators 35

Annex 8 – Sampling method for phone surveys 37

1. Acronyms

AAH	Action Against Hunger
EWARS	Early Warning System
FSL	Food Security and Livelihood
FSN	Food Security and Nutrition
GBV	Gender Based Violence
HDDS	Household Diet Diversity Score
HF	Harmonized Framework
H&N	Health & Nutrition
HoD	Head of Department
IPC	Integrated Food Security Phase Classification
MAM	Moderate acute Malnutrition
MEAL	Monitoring, Evaluation, Accountability & Learning
M&E	Monitoring & Evaluation
MHCPGP	Mental Health Care Practices and Gender Protection
MHPSS	Mental Health Psycho-Social Services
MoH	Ministry of Health
PPE	Personnel Protective Equipment
rCSI	Reduced Coping Strategies Index
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
WASH	Water Sanitation Hygiene
4W	Who, When, Where and How

2. Rationale of a surveillance system

Covid-19 is a major health crisis hitting simultaneously several regions of the world. This major pandemic will not only affect health situations, but will also have a profound impact on many spheres: political, social, human, environmental, economic and infrastructural. A large body of information is produced daily to characterize covid-19 affected countries. Selecting, processing and using this information in a timely manner is needed for humanitarian practitioners, to monitor and alert of potential increase of vulnerability or instability in the contexts of intervention, and hence adjust routine programming and covid-19 related activity.

Multi-sectoral challenges generated by the covid-19

This epidemic poses various deadly threats to populations. First, regarding the health and nutrition sector, lessons learnt from Ebola epidemics have highlighted severe disruptions of routine and essential services, including Primary Health Care and malnutrition services, which have had critical health and nutrition consequences on population, in particular on women and children. The six building blocks of the health systems will be stretched and challenged by this outbreak. Symptoms of covid-19, will have a direct or indirect impact on nutrition as well. Currently, it is unclear whether preceding malnutrition status is a risk factor of covid-19 infection or whether it could contribute to the outcome of the disease. However, there is a close relation between malnutrition and infection, which needs to be monitored.

Second, such pandemics are prone to generate an important increase in the levels of stress, anxiety, etc. of communities and health professionals. Social stigma and discrimination can be associated with covid-19, towards persons who have been infected, their family members, health care personnel and other frontline workers. Generated by the fear and uncertainties caused by such a situation, or by the important daily challenges provoked by the national restrictions, people directly or indirectly affected by the covid-19, will be more likely to experience stress and anxiety. Also, health professional, confronted to front line responses, with high-demanding commitment should be monitored to avoid any deterioration of their mental health. Moreover, the protection situation of Internally Displaced People (IDPs), returnees, and other potentially vulnerable population groups, is expected to be adversely affected. According to the World Health Organization (WHO), marginalized people become even more vulnerable in emergencies, due to a lack of access to effective surveillance and early-warning systems, or health services.

Third, beyond immediate health concerns, short-, medium- and long-term impacts are expected on food systems and on food security and nutrition (FSN), as a result of restrictive measures taken to contain the spread of covid-19. These measures have both direct and indirect impacts on FSN. In return, the worsening of the food and nutrition security situation can also have negative impacts on the progression of the pandemic by weakening people immune systems (which itself depends on healthy diet). Nowadays, there is no doubt that this crisis will result in significant numbers of households falling into poverty and food insecurity. There will be multiplier effects as incomes get hit, and limiting people's ability to access nutritious food in different ways, including through reduced income or increased job insecurity

and unemployment; the longer the situation persists, the more stress is exerted on the whole economy and global food system.

Fourth, countries will experience secondary impacts on WASH services in different ways, depending on the underlying strength of their economy and social services, the type of measures taken to contain the virus and their duration. Similarly, not all members of a society will suffer the consequences in the same way, with major impact expected among the most vulnerable to economic and social shocks, as well as to WASH services disruption.

Need of a surveillance system

Finally, the covid-19 epidemic is expected to cause many regulations, and policy changes as well as destabilization of existing systems across all ACF sectors of intervention. As mentioned above, those effects need to be closely monitored to be able to properly and timely assess and tackle them to mitigate the negative generated effects. Knowledge gaps clearly inhibit evidence-based decision making, leading to a lack of relevant and needs based interventions. Hence, systematic collection, analysis, and interpretation of specific data for use in planning, implementing and evaluating intervention is highly needed, in order to remain pertinent in our approaches. A multi-sectoral surveillance system will thus allow such a process. As such, ACF proposes a multi-sectoral surveillance system analysing conjointly indicators deemed relevant by technical and field actors aiming to provide timely alert.

3. Objectives and characteristics of the multi-sectoral surveillance system

3.1. Objectives

The covid-19 surveillance system aims to monitor the evolution of the effects of the pandemic and the measures taken to contain its spread in order to prepare for the most relevant operational, political and humanitarian responses. With the intention to fight this crisis of covid-19, there is an urgent need for holistic approaches. Therefore, this surveillance system must be able to take into account the health & nutrition, food security and livelihoods (FSL), mental health, care practices and gender protection (MHCPGP) and wash dimensions of the crisis; it is thus eminently multi-sectoral in nature.

The objective of this document is to provide a cross-cutting monitoring system based on the collection of existing simple information to provide timely alert on the situation changes in ACF's intervention context, in order to provide relevant information to adapt field programming. The necessary tools are described here through multi-sectoral indicators easy to analyse, together with a general presentation of sampling methods and analysis for staff, for the FSL sector.

This document being holistic, the missions are not expected to set up and use the whole surveillance system as described here, but rather, make a selection of relevant information to watch in their context, with the objective to contribute to and fill the gaps of existing surveillance systems.

3.2. How to develop and use a surveillance system in the covid-19 context?

What does this document provide?

This document provides clear explanations on the reasons to develop a multi-sectoral holistic system as well as on its benefits in the context of covid-19. A bench of simple indicators easy to analyse are proposed and will allow watching key evolutions of each sectors, as well as general evolutions of the environment and of the covid-19 generated effects. In addition, a presentation of sampling methods and analysis for technical and M&E staffs is proposed, for the FSL sector.

How to contribute to the development of a surveillance system?

The information provided here is holistic and detailed and should allow monitoring the general situation in the intervention areas, as well as the specific effects generated by the covid-19 pandemic in each sector of activity. **Nevertheless, this system is not aiming at being rigid but is rather adjustable to any context. The missions are encouraged to select and tune the indicators and processes proposed here, according to their local situation, M&E capacity, funding and identified gaps of the local surveillance system.**

As much as possible, **this surveillance system should be integrated in existing M&E ones** established at the missions' levels, or in existing surveillance system present in the country directly (under the initiative of the national authorities, clusters or others.). This document should allow ACF missions to contribute to the discussions happening in their countries, at the various levels, regarding the establishment or adjustment of such a surveillance system, and identify gaps that ACF could fill, based on the expertise and available resources. When constraints are too restrictive at the mission level, the list of minimum key indicators (described in one Annex), could be considered, but it should not be the preferred option. As much as possible, monitoring will build on existing local mechanisms and be well coordinated with other actors. Moreover, on the long run, having this key information available, will allow the missions to save time and efforts and lead to better quality programming. Attention should be paid, not to develop a too complex system, and to avoid adding important workload to staffs.

The data collection methodology must of course be adjusted to the contexts. For some of the indicators listed below, a frequency of monitoring is suggested (weekly, monthly, etc.), to ensure close follow-up. However, since this surveillance system has to be embedded in local ones, the frequency can be adjusted to fit the requirements and the operational available capacities. In this covid-19 situation, efforts should be made on **collecting data remotely**, and favour the use of already existing channels of communication and reporting in the area of intervention. Thus, surveillance systems will be more likely to keep functioning at any stage of the epidemic. For instance, the use of telephone surveys is recommended, wherever possible especially for FSL surveillance, depending on the quality of telephone network coverage and the massive use of mobile phones by the populations (See Annex 7). Besides, **the qualitative elements of explanation that complement the scoring of each indicator are very important**, as they allow to correctly interpreting the quantitative data. Remember to collect them and add to the bulletins.

Process for the elaboration of a surveillance system at the mission level

- Based on the context of intervention, identify at the mission level what characteristics of the situation are relevant to monitor, with the perspective to set up an alert mechanism to continuously inform the future ACF programs in response to the covid-19.
- Assess the multi-sectoral surveillance mechanisms in place at the national and local levels, to identify the gaps and where ACF could contribute either to the design of the mechanisms or in the implementation stages. Indicators relying on existing data or existing mechanisms to collect data, should be preferred, in order to avoid the new collection of primary data in this context.
- Contribute to the surveillance mechanisms in place or under development, based on the recommendations provided in this document:
    - Cross-cutting approach
    - Choice within the set of possible indicators, or use of minimum key indicators
    - Favour adjusted means of data collection
    - Account for the available capacities and resources at mission level
- Set up a mechanism, to monitor the various indicators, analyse them and draw operational recommendations to inform ACF multi-sectoral preparation and response programs to covid-19, and widely share these results at the country level, but also, through ACF network. Additional guidance will be provided later on, to help the mission during this operational phase.

At any stage of the process, technical and methodological support from ACF France headquarters is available, through the sectoral technical advisors and the Research & Analysis team. Missions have the possibility to solicit bilaterally the headquarters teams for the reflexions around the elaboration of a surveillance system.

How to use the results of the surveillance system?

The information generated with this system should allow the missions to clearly identify the specific needs or emerging gaps that ACF or other partners could be addressing soon after to meet the populations' needs and mitigate the upcoming risks. It will provide relevant sectoral and cross-cutting information to help in the identification of priorities and in the definition of informed quality interventions at the various levels of the missions, but also for other partners, clusters authorities and communities of the area. In addition, documenting the evolutions of the situation, will allow generating a robust database, for future evaluations, analyses and eventually operational research.

Who sets, uses and benefits from the surveillance system?

The multi-sectoral surveillance system, will be set and use by the missions themselves, based on the present needs and capacities of the teams of working on such a tool. It should be jointly built and managed by the sectoral technical teams (HoD) and the MEAL ones. Depending on the contexts, it can be done in close collaboration with the other partners, clusters and authorities. Moreover, technical and methodological support from ACF France headquarter Technical Advisors, or the MEAL and Research & Analysis team will be available. As this system is to be integrated in any other surveillance system present in the country, the information should be shared between missions, beyond ACF, and thus contribute to the monitoring of the general situation's evolution.

4. Cross-cutting monitoring

4.1. Context monitoring, non-specific to covid-19 measures

This part will provide an overview of the general context we are monitoring, to be able to interpret the various sector-specific indicators that are being monitored, in its present environment. This should allow a more pertinent understanding and interpretation of the indicators specifically related to the covid-19. Besides, this will help to have a holistic thinking of the short and long-term issues at stakes in the area that is being followed-up.
The table below describes the main domains to be watched through a series of indicators. Here, a frequency of monitoring is suggested, but it should be adjusted to the surveillance system in place at the mission level, as well as to the operational capacities. In annex, further details on the methods of data collection, analysis and use of the data are detailed for each indicator.

Domains	Indicators
Status of the food security situation	% of population in IPC3+ at sub-regional level analysis, over a month

Monitoring of vegetative development[1]	Areas with deficit of vegetation index, over a month: • Strong deficit (>50%) • Mild deficit (<50%) • No deficit
Monitoring of local, seasonal or exceptional shocks or events	Report and describe the monthly local erupted and recorded shocks **Local shocks can include environmental variations, conflicts & violence, seasonal disease peaks, political elections, locusts, etc.*

4.2. Monitoring of measures related to covid-19, taken by the authorities

In addition, to the general context information, a monitoring of the strategical and operational measures taken by the authorities in direct preparation or response to the covid-19, should also be followed-up. Indeed, the authorities are taking measures to slow and contain the spread of the virus. These measures often take the form of restrictions on the movement of goods and people, or even the confinement of the population to their homes. Depending on their severity and actual application, their measures will likely have an impact on the ability of economic actors to continue their activities, generate income or feed themselves and will directly affect the spread of the disease and so the level of activity of the health facilities. Therefore, the monitoring of these measures and their applications allows us to understand the evolution of their consequences for the populations. This information is then needed, for ACF to be able to propose adequate and relevant activities that fit with the local initiatives.

The table below describes the main domains to be watched through a series of indicators. Here, a frequency of monitoring can be suggested, but it should be adjusted to the surveillance system in place at the mission level, as well as to the operational capacities. In annex, further details on the methods of data collection, analysis and use of the data are detailed for each indicator.

Domains	Indicators
Restriction of people's mobility	Severity of civilians' containment. People have restricted movements within their: • Home for everybody • Home for people at risk • Movements authorized in the neighborhood only • Movements authorized in the municipality only • Movements authorized in the region only • No restriction

[1] The monitoring of the evolution of surface waters could also be integrated into the monitoring system for the countries covered by the Sigsahel

Restriction of the mobility of foodstuffs and agricultural inputs	Severity of foodstuffs & agricultural inputs mobility restrictions: • Closure of national border • Closure of regional borders • Closure of municipality borders • Existence of corridors • No restriction
Restriction of commercial activities	Severity of restrictions on commercial activities: • Closure of all shops • Closure of non-essential shops • Closure of restaurants • Closure of formal & informal markets • No restriction
Restriction of access to basic essential services	Severity of restrictions on basic essential services: • Closure of health and social services • Closure of schools & universities • Closure of humanitarian services
Insecurity situation	Number of local protesting movements against restriction measures occurred and reported, over a month
Supportive measures	Total amount in USD / € injected in the area from formal/informal sources, over a month
Variations of health and nutrition protocols or recommendations	List of key changes in health and nutrition protocols or in recommendations of care
Existence of a functioning early warning system (EWARS) for infectious diseases, including covid-19	Degree of existence and application of the EWARS: • EWARS exists and is fully implemented • EWARS exists and is partially implemented • EWARS exists, but is not implemented • EWARS doesn't exist
Interruption of routine public health interventions	Number (and description) of public health interventions that were cancelled. **Public health interventions can include mass screening of some diseases, vaccination campaigns, sensitization campaign, distribution of inputs such as Vitamin A or deworming*
Breast feeding	Monthly number of unsolicited donations of breast milk substitutes (BMS) observed or reported

Communication strategies adopted toward the population	Characteristics of the communication strategies: Frequency: • Daily • Weekly • Monthly • Less than once a month Content regarding the situation: • Will of transparency • Restricted transparency • No transparency

5. Monitoring impacts on livelihoods and food security

Risks associated with the secondary economic and health risk resulting from the outbreak have to be monitored. Indeed, restrictions of movement will result in food insecurity concerns leading to limited movement of goods and services, food items, panic buying, food shortage and significant food prices increase.

Data collections, requires surveys with traders and households, and standards developed by the IPC tool (HERE), should be followed. In addition, households can be selected according to different approaches (See sampling guidance in annex). It is also recommended to undergo monthly repeated random draws rather than the use of sentinel households. Once again, these recommendations should be adapted if deemed not feasible according to the context. Regardless of which system is ultimately chosen, the sampling methodology should be clearly explained in the monitoring bulletins in order to assess the level of reliability of the data. The IPC technical criteria can be found through this link (HERE).

The table below describes the main domains to be watched through a series of indicators. Here, a frequency of monitoring can be suggested, but it should be adjusted to the surveillance system in place at the mission level, as well as to the operational capacities. In annex, further details on the methods of data collection, analysis and use of the data are detailed for each indicator.

Domains	Indicators
Availability of staple foods	State of shortage for basic foodstuffs: Number of varieties/types of food goods that are in acute shortage at local level, over a week
	Number of alerts by traders in case of unusual behaviour in the food trade, over a set period of time

	Weekly price evolution (%) for 3 staple foods[2] (cereal or tuber, legume or vegetable, meat or fish)
Availability of agricultural inputs	State of shortage for agricultural inputs (seed, fodder, fertilizers): Categories of the farming inputs (consumable /capital) that are in acute shortage at local level, over a week
Accessibility of farm inputs	Weekly evolution of the price of agricultural inputs (seed, fodder, fertilizers, agricultural OM, transport costs)
Survival of small businesses	Evolution of daily income: Comparison of daily incomes compared to « normal » situation at the same period of the year: • > -50%, •]-50% to -25%] •]-25% to no change] • Increase
Household food security	Existence or not of food stock in rural area, over a month
Livelihood	% of households, that over a month, perceived changes in family income, for each category: +, =, -, --
	Evolution of the price of the daily labour force over a month: Comparison of daily labor force compared to « normal » situation, over a month: • > -50%, •]-50% to -25%] •]-25% to no change] • Increase
	Evolution of the level of household debt over a month, compared to the previous month: • +50% • +25% to 50% • +25% to no change] • Decrease of debts
Household food security	Household Diet Diversity Score (HDDS), over a month
Household food security	Reduced Coping Strategies Index (rCSI), over a month

[2] If possible, refer to the country's standards for survival food baskets.

6. Monitoring impacts on global health and nutrition

Monitoring the impact of covid-19 on health and nutrition will support the identification of a potential deterioration of access to and / or quality of health and nutrition services, and of health and nutrition outcomes in the context of covid-19. Key health and nutrition indicators compared to global or national standards or data prior the epidemics will provide a measure of the ongoing health and nutrition situation and allow ACF adjusting its interventions.

Some of the potential effects of covid-19, on health and nutrition outcomes may include changes in the health centres attendance, due either to an increase of covid-19 cases or fear to be infected. Can also be observed: an increase of acute malnutrition cases due to specific factors linked to covid-19 epidemics (difficult access to food, increase of prices, movement restrictions, and consequences on informal jobs, etc.); a disruption of health and nutrition services linked to sickness of health staff, or increased absenteeism, and lack of PPE, essential drugs and RUTF.

The table below describes the main domains to be watched through a series of indicators. In a crisis situation, it is recommended to monitor the following indicators on a weekly basis to spot rapid degradations of the context. Nevertheless, if not feasible, the timing suggested by the surveillance system in place at the mission level should be followed. In annex, further details on the methods of data collection, analysis and use of the data are detailed for each indicator.

Domains	Indicators
Utilisation of health services	Weekly number of outpatient department visits for curative services, antenatal care, birth delivery care, breastfeeding support and counselling, and children <5y consultations in the project area
Incidence of SAM cases within children	Weekly number of new SAM admissions, recorded in the health facilities, for children under 5 years old, (including those with suspicion of covid-19)
Incidence of MAM cases within children	Weekly number of new MAM admissions, recorded in the health facilities, for children under 5 years old, (including those with suspicion of covid-19)
Proportion of SAM children with covid-19 symptoms	% of SAM children, under 5 years old admitted in outpatient services, with covid-19 symptoms, over a week
Proportion of MAM children with covid-19 symptoms	% of MAM children, under 5 years old, admitted in outpatient services, with covid-19 symptoms (when treatment is delivered), over a week
Availability of health staff	Number of health staff that has been contaminated (suspected & confirmed) by the covid-19 in the project area, over a week

Supplies of health facilities	% of health facilities which have sufficient essential medicines, for a month (weekly monitored)
	% of health facilities providing undernutrition treatment, which have sufficient RUTF (weekly monitored)
	% of health facilities which have sufficient covid-19 PPE, for a month (weekly monitored)
Outcomes of treated SAM children	% of SAM children under 5 years old, discharged as defaulters or death, over a week

7. Monitoring impacts on MHCPGP

In any epidemic and particularly in covid-19 outbreak it is frequent for individuals to feel stressed and worried. Common responses of people affected (both directly and indirectly) might include:

- Fear of losing livelihood, not being able to work during isolation, and of being fired
- Guilt or shame while having contracted the covid-19 or about a close one having contracted it
- Fear for the future
- Feeling of loneliness, helplessness and depression due to being isolated
- Mistrust and anger of everyone associated with the disease
- Aggressiveness toward a family member due to confinement; increased domestic and intimate partner violence
- Stigmatization and fear of patients, healthcare workers and caregivers
- Fear of falling ill and dying and prevent people from approaching health workers or health facilities.

Furthermore, frontline workers may experience additional stressors during the covid-19 outbreak. The constant fear, worry and stressors in the population during the covid-19 outbreak can lead to long-term consequences within communities and families:

- Deterioration of social networks, local dynamics and economies
- Stigma towards surviving patients resulting in rejection by communities
- Possible anger and aggression against government and frontline workers
- Possible mistrust of information provided by government and other authorities
- People with developing or existing mental health and substance use disorders experiencing relapses or other negative outcomes because they are avoiding health facilities or unable to access their care providers

Monitoring the impacts of covid-19 on MHCPGP will support the identification of a potential deterioration of access to and / or quality of MHCPGP services, and of MHCPGP outcomes in the context of covid-19.

The table below describes the main domains to be watched through a series of indicators. Here, a frequency of monitoring can be suggested, but it should be adjusted to the surveillance system in place at the mission level, as well as to the operational capacities. In annex, further details on the methods of data collection, analysis and use of the data are detailed for each indicator.

Domains	Indicators
Availability of MHPSS services	Map of available MHPSS services (existing and new), including online services, over a set period of time.
	Number of essential drugs for severe mental health cases not available in the health structures, over a set period of time
MHPSS services for prevention and response to psychosocial aspects of covid-19	Number of available MHPSS services for prevention and response to psychosocial aspects of covid-19, over a set period of time. **Separate services for the population and services for the health staffs/helpers. Inclusion of the MHPSS and protection aspects in the prevention and response to covid-19 by the government/authorities. Séparation des services pour la population et pour le personnel de santé/les aides. Inclusion des aspects de la SMSPS et de la protection dans la prévention et la réponse à la covid-19 par le gouvernement/les autorités*
Prevalence of MHPSS needs, including psychosocial aspects related to covid-19	Number of women, girls, men and boys who receive psychosocial support (e.g. psychological first aid, stress management), over a set period of time **If possible, disaggregate women, girls, men and boys*
	Number of people receiving mental health care related to covid-19, through medical services, over a set period of time
	Number of people requesting MHPSS support without receiving services, over a set period of time
	Number and/or % of health staff requesting psychosocial support, over a set period of time
	Monthly Increase in the number of: • People with severe psychological disorders • Suicides reported cases **To be compared to the previous month*
Utilization of services due to violence	Number of people seeking MHPSS and protection services as a result of violence (physical, sexual, psychological), over a set period of time

	Number of reported cases of intra-familial violence, over a set period of time
	Number of reported cases of Inter-Partner Violence (IPV), over a set period of time
Prevalence of Gender Based Violence (GBV)	Number of cases in GBV services, over a set period of time
Violence against children	Number of children experiencing violence (neglect, physical, sexual and psychological violence), over a set period of time
Stigma of some groups due to covid-19 situation (quarantine, sick people or families, helpers, etc.)	Number of critical incidents due to stigmatization toward people affected by covid-19, over a set period of time
	Types of groups or people at risk of being discriminated by measures used for prevention or treatment of covid-19
Care Practices and parental support	Number of parents searching for support to take care of children < 5 years old, over a set period of time
	Number of services /hotlines /help provided to parents and families, for taking care of very young children during covid-19, over a set period of time

8. Monitoring impacts on Wash

In this context of covid-19, UNICEF identified in their guidance note from the 11 March 2020[3], potential secondary effects of WASH infrastructures' limitations. These could lead to an increased incidence of water borne diseases, including a potential for outbreaks such as cholera where the disease is already active. The main limitations and their potential effects are listed hereafter.

- Quarantined population with no access to piped water supply and sewerage systems:
  - No access to external water and sanitation services
  - Disruption of support services from Government or CSOs
  - Increased risk of water-borne diseases outbreak
- Lack of maintenance of WASH infrastructures and gaps in service provision, including, but not limited to:

[3] UNCIEF COVID-19 Emergency Response Monitoring and mitigating the secondary impacts of the COVID19 epidemic on WASH services availability and access

- Disruption of safe water distribution by lack of maintenance and reduced staffing for daily operation
- Potential sewer overflow by lake of maintenance and reduced staffing for daily operation
- Failure to supply/purchase water and wastewater treatment chemicals
- Failure to supply/purchase fuel for pumping station, water and wastewater treatment plants

- Disruption of desludging services, which may particularly put at risk health facilities, schools and prison: Disruption of solid waste management services
- Stock-out or increased price of WASH commodities, including bottled water and water transport, soap, hand-sanitizers and cleaning materials
- Disconnection from services due to lack of income, in open defecation (OD) free communities – families regressing to OD due resistance to share toilets

The table below describes the main domains to be watched through a series of indicators. Here, a frequency of monitoring can be suggested, but it should be adjusted to the surveillance system in place at the mission level, as well as to the operational capacities. In annex, further details on the methods of data collection, analysis and use of the data are detailed for each indicator.

Domains	Indicators
Access to water in quarantine	Number of litres of water per capita, for quarantined population, per day
Availability of toilets in quarantine	Number of toilets per person, in quarantined areas
	Weekly cleaning of the toilets (Yes/No)
Collection of waste in quarantine	Weekly waste collection in settlement (Yes/No)
Availability of soap in quarantine	Access to soap in each quarantined area, according to sphere standards (Yes/No)
Access to water for households	Cost for 20 litres of water (weekly monitoring)
	Water utilities reporting chemicals or fuel gaps over a week (Yes/No)
Access to soap for households	Weekly variation of soap price over a week: +, =, -, -- (USD)
Waste collection services	Waste collected normally over a week (Yes/No)
Access to WASH standards in camps	Number of camps respecting norms (Sphere norms) for water, sanitation and soap access, over a set period of time

Increased risk of water-borne diseases outbreak	Number of cases of water borne diseases from health centres (diarrhoea/dysentery), over a month
Wash infrastructure maintenance	Number of water systems no longer functional, over a set period of time

Annex 1 – Cross-cutting non-covid-19 related indicators

Domains	Indicators	Source of information	Use of the indicators
Status of the initial food security situation	% of population in IPC3+ at sub-regional level analysis, over a month	Link FAO and HF	Analysis of IPC & HF to be performed: • Current situations Integrated Food Security Phase Classification (IPC) + Harmonized Framework (HF) • Projected situations IPC + HF • Upcoming IPC + HF analyses
Monitoring of vegetative development[4]	Areas with deficit of vegetation index, over a month: • Strong deficit (>50%) • Mild deficit (<50%) • No deficit	Monthly data update from https://hungermap.wfp.org/ NDVI Map	To monitor the vegetative biomass (of cultivated land and other areas)
Monitoring of local, seasonal or exceptional shocks or events	Report and describe the monthly local erupted and recorded shocks **Local shocks can include environmental variations, conflicts & violence, seasonal disease peaks, political elections, locusts, etc.*	Local press, field teams, local authorities	To be able to consider additional seasonal or exceptional shocks to those caused by covid-19 (to be included in monthly reporting), to be able to mitigate the negative effects

[4] The monitoring of the evolution of surface waters could also be integrated into the monitoring system for the countries covered by the Sigsahel

Annex 2 – Cross-cutting indicators related to covid-19 measures

Restriction of people's mobility	Severity of civilians' containment. People have restricted movements within their: • Home for everybody • Home for people at risk • Movements authorized in the neighborhood only • Movements authorized in the municipality only • Movements authorized in the region only • No restriction	Decrees, National and local press, FAO link	To determine the severity of restriction of people movements/effectiveness in specific geographical areas, starting from the beginning of the crisis and along it. Information to be collected every time decision is being taken by the local authorities. Qualitative information should inform the degree of application of these measures.
Restriction of the mobility of foodstuffs and agricultural inputs	Severity of foodstuffs & agricultural inputs mobility restrictions: • Closure of national border • Closure of regional borders • Closure of municipality borders • Existence of corridors • No restriction	Decrees, Local Press, Key informants and direct observations	To document the restrictive measures taken and their effectiveness on supply chain of food and agricultural inputs in a specific area. Information to be collected every time decision is being taken by the local authorities. Qualitative information should inform the degree of application of these measures.
Restriction of commercial activities	Severity of restrictions on commercial activities: • Closure of all shops • Closure of non-essential shops	Local press FAO link	To determine the impact of commercial activities restrictions on

	• Closure of restaurants • Closure of formal & informal markets • No restriction		main commercial activities in a specific area. Information to be collected every time decision is being taken by the local authorities. Qualitative information should inform the degree of application of these measures.
Restriction of access to basic essential services	Severity of restrictions on basic essential services: • Closure of health and social services • Closure of schools & universities • Closure of humanitarian services	Ministries, Local Press	To determine the degree of access to essential basic service restrictions in a specific area. Information to be collected every time decision is being taken by the local authorities. Qualitative information should inform the degree of application of these measures.
Insecurity situation	Number of local protesting movements against restriction measures occurred and reported, over a month	Local press, mission security manager	Inform on general context and acceptance of measures in place
Supportive measures	Total amount in USD / € injected in the area from formal/informal sources, over a month	Humanitarian coordination (4Ws of clusters, sectoral coordination minutes)	To determine level and quantity of safety net measures, and other support measures put in place by the authorities towards people and enterprises. To be able to better target beneficiaries excluded by the measures

Variations of health and nutrition protocols or recommendations	List of key changes in health and nutrition protocols or in recommendations of care	MoH and health authorities reports, health and nutrition clusters	Monitor key changes in care recommendations for primary healthcare and nutrition services
Existence of a functioning early warning system (EWARS) for infectious diseases, including covid-19	Degree of existence and application of the EWARS: • EWARS exists and is fully implemented • EWARS exists and is partially implemented • EWARS exists, but is not implemented • EWARS doesn't exist	National, regional and District Health authorities	Inform on the epidemiological surveillance and reaction system for infectious diseases and covid-19
Interruption of routine public health interventions	Number (and description) of public health interventions that were cancelled. **Public health interventions can include mass screening of some diseases, vaccination campaigns, sensitization campaign, distribution of inputs such as Vitamin A or deworming*	Health facility and health authorities reports, MoH, ACF activity reports	Monitor the continuity of care
Breast feeding	Monthly number of unsolicited donations of breast milk substitutes (BMS) observed or reported	Health facility and health authorities reports, MoH, ACF activity reports, clusters	Monitor the abusive donations of BMS
Communication strategies	Characteristics of the communication strategies: Frequency: • Daily	Local media, clusters, MoH	Assess the level of information of the population

adopted toward the population	• Weekly • Monthly • Less than once a month Content regarding the situation: • Will of transparency • Restricted transparency • No transparency		

Annex 3 – Food Security & Livelihoods indicators

Domains	Indicators	Sources of information	Use of the indicator
Availability of staple foods	State of shortage for basic foodstuffs: Number of varieties/types of food goods that are in acute shortage at local level, over a week	Weekly collection by telephone from 3 retail traders and 1 wholesaler in the area, selected for convenience	To identify **which staple food gaps are** ongoing in a given area. Identify gaps in the supply chain and so possible support to the food supply chain in the short-mid terms
Availability of staple foods	Number of alerts by traders in case of unusual behaviour in the food trade, over a set period of time	Return by alert of the 3 wholesalers of the zone, selected by convenience / cooks and logisticians during their contacts with the markets	To identify the **frequency of staple foods gaps** in a given area. It will allow to identify temporary bottlenecks in the supply food chain and plan intervention.
Accessibility of staple foods	Weekly price evolution (%) for 3 staple foods[5] (cereal or tuber, legume or vegetable, meat or fish)	Weekly collection by telephone from 3 merchants in the area, selected for convenience	Increase/high fluctuations on prices of staple foods informs on the status of supply and demand and helps us to fill in the gaps of access to food. It also contributes to recalculate the survival food basket cost of an area in crisis and post crisis situation.
Availability of agricultural inputs	State of shortage for agricultural inputs (seed, fodder, fertilizers):	Weekly collection by telephone from 3 merchants in the area selected for convenience	It allows to confirm if there is any bottleneck within the supply chain and respond in a sustainable way

[5] If possible, refer to the country's standards for survival food baskets.

	Categories of the farming inputs (consumable /capital) that are in acute shortage at local level, over a week		
Accessibility of farm inputs	Weekly evolution of the price of agricultural inputs (seed, fodder, fertilizers, agricultural OM, transport costs)	Weekly collection by telephone from 3 merchants in the area, selected for convenience	It allows the identification of appropriate support to farmers in a timely manner compared to seasonal calendar
Survival of small businesses	Evolution of daily income: Comparison of daily incomes compared to « normal » situation at the same period of the year: • > -50%, •]-50% to -25%] •]-25% to no change] • Increase	Weekly collection by telephone from 3 merchants in the area, selected for convenience	To determine impact of the crisis on usual business flow. It allows identifying the appropriate measures and their length to support the survival of small businesses close to customer. It helps in measuring the status of the market and its access by the consumers.
Household food security	Existence or not of food stock in rural area, over a month	Monthly telephone collection from 90 randomly selected households in the area[6] Access to food and markets (WFP module adapted at this link here)	It helps to evaluate the food sources, stock duration and access to market
Livelihood	% of households, that over a month, perceived changes in family income, for each category: +, =, -, --	Monthly telephone collection from 90 randomly selected households (HH) in the area	Qualitative perception of fluctuation of monthly income of HHs. Compared to either the previous month, or the period before the crisis as well the same period of the year. Not measuring exact amount

[6] In urban areas, this zone may be limited to inhabitants of precarious areas and shantytowns

	Evolution of the price of the daily labour force over a month: Comparison of daily labor force compared to « normal » situation, over a month: • > -50%, •]-50% to -25%] •]-25% to no change] • Increase	Monthly telephone collection from 90 randomly selected households in the area	It helps to compare fluctuations of income of daily labour force. Compared either to previous month or to the period before the crisis. Not measuring exact amount. It allows to identify appropriate level and measure of response for labour force strengthening, reintegration in the job market and temporary support with safety net measure to let HHs have access to food and basic items
	Evolution of the level of household debt over a month, compared to the previous month: • >50% • +25% to 50% • <25% to no change] • Decrease of debts	Monthly telephone collection from 90 randomly selected households in the area	It allows assessing the level of debt of the HHs and their need for income and liquidity to cover food and other basic needs. Compared to previous month.
Household food security	Household Diet Diversity Score (HDDS), over a month	Monthly telephone collection from 90 randomly selected households in the area	Used as surveillance indicator to measure the economic level of HHs and their economic capacity to access diversified food
Household food security	Reduced Coping Strategies Index (rCSI), over a month	Monthly telephone collection from 90 randomly selected households in the area	Used as an early warning indicator of how HHs respond to limited access to sufficient food

Annex 4 – Global health & nutrition indicators

Domains	Indicators	Sources of information	Use of the indicators
Utilisation of health services	Weekly number of outpatient department visits for curative services, antenatal care, birth delivery care, breastfeeding support and counselling, and children <5y consultations in the project area	Monthly health facility reports, MoH reports.	To be compared to the same period in the previous years, to measure the side effects of implementing infection prevention & control/covid-19 response at health facility, and detect any decrease of utilisation (fear to go to the health facilities, etc.) or an over utilisation (more cases, etc.). Services to be desegregated.
Incidence of SAM cases within children	Weekly number of new SAM admissions, recorded in the health facilities, for children under 5 years old, (including those with suspicion of covid-19)	Monthly health facility reports, MoH reports, cluster reports.	To be compared to the same period in the previous years, to detect any increase or decrease in the SAM incidence
Incidence of MAM cases within children	Weekly number of new MAM admissions, recorded in the health facilities, for children under 5 years old, (including those with suspicion of covid-19)	Monthly health facility reports, MoH reports, cluster reports.	To be compared to the same period in the previous years, to detect any increase or decrease in the MAM incidence
Proportion of SAM children with covid-19 symptoms	% of SAM children, under 5 years old admitted in outpatient services, with covid-19 symptoms, over a week	Monthly health facility reports, MoH reports, cluster reports	Document the prevalence of covid-19 cases among under-nourished children
Proportion of MAM children	% of MAM children, under 5 years old, admitted in outpatient services, with	Monthly health facility reports, MoH reports, cluster reports	

with covid-19 symptoms	covid-19 symptoms (when treatment is delivered), over a week		
Availability of health staff	Number of health staffs that have been contaminated (suspected & confirmed) by the covid-19 in the project area, over a week	Health Facilities, health Districts and MoH reports Cluster meetings and reports	Inform the continuity and quality of health and nutrition care that can be delivered. Should be interpreted knowing the availability of basic health services, and compared to regular availability of staff in the concerned area
Supplies of health facilities	% of health facilities which have sufficient essential medicines, for a month (weekly monitored)	Health Facilities, health Districts and MoH reports Cluster meetings and reports	Inform the continuity and quality of health and nutrition care that can be delivered.
	% of health facilities providing undernutrition treatment, which have sufficient RUTF (weekly monitored)	Health Facilities, health Districts and MoH reports Cluster meetings and reports	
	% of health facilities which have sufficient covid-19 PPE, for a month (weekly monitored)	Health Facilities, health Districts and MoH reports Cluster meetings and reports	Inform the quality of care provided, especially for infection prevention & control, in regards to protective measures
Outcomes of treated SAM children	% of SAM children under 5 years old, discharged as defaulters or death, over a week	Health and MoH reports	Inform the continuity and quality of SAM management that can be delivered

Annex 5 – MHCPGP indicators

Domains	Indicators	Sources of information	Use of the indicators
Availability of MHPSS services	Map of available MHPSS services (existing and new), including online services, over a set period of time.	Clusters reports MHPSS 4W matrix	Inform the continuity, quality of care that can be delivered. Inform about gaps and coordination with other actors for potential new interventions
	Number of essential drugs for severe mental health cases not available in the health structures, over a set period of time	Ministry of Health, clusters, health structure reports	
MHPSS services for prevention and response to psychosocial aspects of covid-19	Number of available MHPSS services for prevention and response to psychosocial aspects of covid-19, over a set period of time. **Separate services for the population and services for the health staffs/helpers. Inclusion of the MHPSS and protection aspects in the prevention and response to covid-19 by the government/authorities.*	Health Facilities, health Districts, MoH & Government reports Cluster meetings and reports	Assess whether MHPSS aspects of covid-19 are included in the strategy for preventing and treating the disease, by the authorities and other partners. Inform an advocacy strategy if MHPSS aspects are not included. Facilitate referrals and continuity of care. Assess whether MHPSS needs of health staffs and helpers are recognised and adequately covered
Prevalence of MHPSS needs, including psychosocial aspects	Number of women, girls, men and boys who receive psychosocial support (e.g. psychological first aid, stress management), over a set period of time **If possible, disaggregate women, girls, men and boys*	Cluster meetings and reports Health Facilities, health Districts and MoH reports	Compared either to previous month or to the period before the crisis as well the same period of the year in order to provide better care and services, to avoid gap and to extend coverage.

related to covid-19	Number of people receiving mental health care related to covid-19, through medical services, over a set period of time	MHCPGP existing ACF programs or from other partners Might also be included in multi-sectoral surveillance surveys by phone for example	It allows Advocacy as well in order to include the MHPSS response when not yet enough done. It might provide MHPSS information to authorities to take these risks and needs when defining their covid-19 strategy
	Number of people requesting MHPSS support without receiving services, over a set period of time		
	Number and/or % of health staff requesting psychosocial support, over a set period of time		
	Monthly increase in the number of: • People with severe psychological disorders • Suicides reported cases **To be compared to the previous month*		
Utilization of services due to violence	Number of people seeking MHPSS and protection services as a result of violence (physical, sexual, psychological), over a set period of time	Cluster meetings and reports MoH, and health facilities reports	Compared either to previous month or to the period before the crisis as well as the same period of the year, it allows to detect increase or decrease of violence and to put in place specific services and actions aimed to reduce and avoid violence
	Number of reported cases of intra-familial violence, over a set period of time		
	Number of reported cases of Inter-Partner Violence (IPV), over a set period of time		
Prevalence of Gender Based Violence (GBV)	Number of cases in GBV services, over a set period of time	Cluster meetings and reports MoH, and health facilities reports	Compared either to previous month or to the period before the crisis as well the same period of the year, it allows to detect increase or decrease GBV prevalence and put in place specific

			services and actions aimed to reduce and avoid violence
Violence against children	Number of children experiencing violence (neglecting, physical, sexual and psychological violence), over a set period of time	Cluster meetings and reports Specific data collected in existing programs (among beneficiaries, key informant in the community or at health facilities level)	Compared either to previous month or to the period before the crisis as well the same period of the year, it allows to detect increase or decrease children violence prevalence and put in place specific services and actions aimed to reduce and avoid violence
Stigma of some groups due to covid-19 situation (quarantine, sick people or families, helpers, etc.)	Number of critical incidents due to stigmatization toward people affected by covid-19, over a set period of time Types of groups or people at risk of being discriminated by measures used for prevention or treatment of covid-19	Cluster meetings and reports Specific data collected in existing programs (among beneficiaries, key informants in the community or at health facilities level) Might be included in multi-sectorial surveillance system by phone	It helps to be vigilant about social changes that can have long-term impact at community level and on social cohesion. It allows putting in place specific messages and actions. It allows as well organising protection mechanisms for most vulnerable people. Some measures for covid-19 might be used to discriminate groups or persons and this information might be used for advocacy purpose on protection
Care Practices	Number of parents searching for support to take care of children < 5 years old, over a set period of time	Clusters reports MHPSS 4W matrix	It allows understanding a possible increasing on young children vulnerability. It makes possible to

and parental support	Number of services /hotlines /help provided to parents and families, for taking care of very young children during covid-19, over a set period of time	Specific data collected in existing programs (among beneficiaries, key informants in the community or at health facilities level)	implement program for parental skills, guidance, and support in order to limit exposition to neglecting/abusive behaviours, child undernutrition and mortality.

Annex 6 – Wash indicators

Domains	Indicators	Sources of information	Use of the indicator
Access to water in quarantine	Number of litres of water per capita, for quarantined population, per day	Affected Population Surveys	Monitor the access to basic WASH services in quarantine. To assess if addition support is required/advocacy required.
Availability of toilets in quarantine	Number of toilets per person, in quarantined areas		
	Weekly cleaning of the toilets (Yes/No)		
Collection of waste in quarantine	Weekly waste collection in settlement (Yes/No)		
Availability of soap in quarantine	Access to soap in each quarantined area, according to sphere standards (Yes/No)		
Access to water for households	Cost for 20 litres of water (weekly monitoring)	Utilities, Government Ministries, CSO	Assess the access of households to basic wash commodities
	Water utilities reporting chemicals or fuel gaps over a week (Yes/No)		

Access to soap for households	Weekly variation of soap price over a week: +, =, -, -- (USD)		
Waste collection services	Waste collected normally over a week (Yes/No)		
Access to WASH standards in camps	Number of camps respecting norms (Sphere norms) for water, sanitation and soap access, over a set period of time	Camp households surveys	Targeted advocacy
Increased risk of water-borne diseases outbreak	Number of cases of water borne diseases from health centres (diarrhoea/dysentery), over a month	Health facilities activity reports, health Districts report	Monitor the incidence of water-borne diseases
Wash infrastructure maintenance	Number of water systems no longer functional, over a set period of time	Utilities, Government Ministries, CSO	Monitor the interruptions of WASH services from the government

Annex 7 – Minimum key indicators

Domains	Indicators	Sources of information	Use of the indicator
Restriction of people's mobility	Restriction of people's mobility	Restriction of people's mobility	Restriction of people's mobility
Status of the initial food security situation	% of population in IPC3+ at sub-regional level analysis, over a month	Link FAO and HF	Analysis of IPC & HF to be performed: • Current situations Integrated Food Security Phase Classification (IPC) + Harmonized Framework (HF) • Projected situations IPC + HF • Upcoming IPC + HF analyses
Severity of civilians' containment. People have restricted movements within their:	Severity of civilians' containment. People have restricted movements within their:	Severity of civilians' containment. People have restricted movements within their:	Severity of civilians' containment. People have restricted movements within their:
Household food security[7]	Household Diet Diversity Score (HDDS), over a month	Monthly telephone collection from 90 randomly selected households in the area	Used as surveillance indicator to measure the economic level of HHs and their economic capacity to access diversified food

[7] These two FSL indicators have to be analysed in regards with other additional FSL indicators

Household food security	Reduced Coping Strategies Index (rCSI), over a month	Monthly telephone collection from 90 randomly selected households in the area	Used as an early warning indicator of how HHs respond to limited access to sufficient food
Utilisation of health services	Weekly number of outpatient department visits for curative services, antenatal care, birth delivery care, breastfeeding support and counselling, and children <5y consultations in the project area	Monthly health facility reports, MoH reports.	To be compared to the same period in the previous years, to measure the side effects of implementing infection prevention & control /covid-19 response at health facility, and detect any decrease of utilisation (fear to go to the health facilities, etc.) or an over utilisation (more cases, etc.). Services to be desegregated.
MHPSS services for prevention and response to psychosocial aspects of covid-19	Number of available MHPSS services for prevention and response to psychosocial aspects of covid-19, over a set period of time. **Separate services for the population and services for the health staffs/helpers. Inclusion of the MHPSS and protection aspects in the prevention and response to covid-19 by the government/authorities.*	Health Facilities, health Districts, MoH & Government reports Cluster meetings and reports	Assess whether MHPSS aspects of covid-19 are included in the strategy for preventing and treating the disease, by the authorities and other partners. Inform an advocacy strategy if MHPSS aspects are not included. Facilitate referrals and continuity of care. Assess whether MHPSS needs of health staffs and helpers are recognised and adequately covered
Access to water in quarantine	Number of litres of water per capita, for quarantined population, per day	Affected Population Surveys	Monitor the access to basic WASH services in quarantine. To assess if addition support is required/advocacy required.

Annex 8 – Sampling method for phone surveys

In order to avoid bias in estimation of an observation measure of a targeted population, efforts should be made to correctly define a sampling method and the size. This document presents the two main sampling methods, and a step-by-step process to calculate the sampling size for each of them. It also present common phone survey bias and how to avoid them.

The sampling method may be considered according to the context of the survey, its costs and the availability of resources. For survey areas with suspected heterogeneity between neighbourhoods, districts or villages, a cluster sampling method is recommended. For missions with a single district, neighbourhood or village, or where the inclusion of several districts is challenging, the simple random sampling method can be used.

1. Cluster sampling

Several parameters should be considered when calculating the sample size: expected prevalence of the measured indicator, acceptable margin of error, design effect and confidence level.

a. The expected prevalence can vary depending on the indicator studied. It could be assessed base on a previous study estimates or in the absence of literature on the subject, expert assumption. When the survey aims to estimate the prevalence of several indicators and that resources are limited, the sampling calculation should be based on the prevalence of the most important indicator to ensure that sufficient statistical power will be achieved to estimate it correctly. If several indicators are of equal importance, base the sampling calculation on the prevalence of the indicator with the lowest prevalence expected can be a strategy to ensure that the sampling will be large enough to estimate every indicator of interest.

b. Concerning the margin of error, the recommendations of the IPC should be followed, i.e. a maximum margin of error of 8.5%[8]. However, a lower margin of error will result in a better sampling design.

c. For the effect of the sample design[9], recommendations of the IPC should also be followed; however, this parameter can be easily calculated only after the survey. It is often unknown before the survey, unless surveys on the same variables have been conducted previously. An effect of 1.5 as suggested by the of the IPC sample design could be used as well as a confidence level between 90 or 95%.

8 IPC Global Partners. 2019. Integrated Food Security Phase Classification Technical Manual Version 3.0. Evidence and Standards for Better Food Security and Nutrition Decisions. Rome

9 The design effect is a survey statistic computed as the quotient of the variability in the parameter estimate of interest resulting from the sampling design and the variability in the estimate that would be obtained from a simple random sample of the same size.

Before selecting districts for conducting telephone surveys, it is important to know the level of telephone coverage in the study area. This coverage rate can be estimated via service provider data, national statistics or previous studies. Areas not covered by the telephone network must be excluded before sampling.

The IPC's recommendations for sample sizes are:

- For an area where more than 75% of households have phone access: select at least 150 households (with at least 25 clusters).
- For an area where more than 60% of households have phone access: choose a sample size of 90 households, with 5 clusters.

The parameters used to calculate the IPC recommendation for sample size exclude the non-response rate and assume a 90% confidence level.

Based on the parameters listed above for the minimum standard sample size qualified, 5 clusters, and considering a zero rate of non-response, the sample sizes according to prevalence and confidence level can be find table 1.

Expected prevalence	N (Confidence level 90%)	N (Confidence level 95%)
5%	30	40
10%	55	75
15%	75	105
20%	90	130
25%	105	150
30%	120	170
35%	130	185
40%	135	195
45%	140	200
50%	145	200
55%	140	200
60%	135	195
65%	130	185
70%	120	170
75%	105	150
80%	90	130
85%	75	105
90%	55	75

This can be considered here as the smallest possible sample size to ensure prevalence estimates with sufficient reliability

2. **Simple random sampling**

For simple random sampling methods, sample sizes are presented in table 2 depending on the expected prevalence. Note that we have kept the maximum margin of error recommended by IPC.

Expected prevalence	N (Confidence level 90%)	N (Confidence level 95%)
5%	18	25
10%	34	48
15%	48	68
20%	60	85
25%	70	100
30%	79	112
35%	85	121
40%	90	128
45%	93	132
50%	94	133
55%	93	132
60%	90	128
65%	85	121
70%	79	112
75%	70	100
80%	60	85
85%	48	68
90%	34	48

This can be considered here as the smallest possible sample size to ensure prevalence estimates with sufficient reliability

Potential bias and how to avoid it

Potential biases can be observed:

- **Geographic coverage bias:** Some areas are not covered by any mobile phone network. Rural areas are often poorly covered and network coverage may completely fail during times of conflict as well. Hence these areas may be entirely excluded from a survey.
- **Selection bias:** some households may have multiple phones, while others may have only one, and some may not even have one. It is well documented that respondents to computer assisted telephone interview (CATI) surveys tend to be more urban, wealthier, more educated, younger, and more frequently male than female.
- **Intra-household bias:** when the same household is monitored over time (i.e. panel design), having different respondents answering the survey at different rounds also creates a bias in the result.

- **Non-response/self-selection bias:** compared to face-to-face (F2F), it is far easier for a potential respondent to ignore an unknown phone number than an enumerator physically present near their dwelling.

To avoid and control these biases, some solutions can be considered:

- To avoid intra-household bias, it is important that the survey protocol ensures consistency in reaching the **same respondent** in every survey round.
- In contexts where a phone-survey is likely to exclude certain areas or groups of people due to a lack of phone ownership or network coverage, those areas and/or groups are interviewed via F2F interviews instead.
- It is recommended that a minimum of five demographic indicators are compared stratum-by-stratum with another surveys: respondent age, respondent sex, head of household sex, whether respondent lives in an urban or rural area, and a socioeconomic indicator such as the highest level of education within the household or roof/toilet type. Any demographic indicator can be chosen as long as they were measured consistently (i.e. questions and options for response are phrased in the same way) with little error and low non-response across both surveys.
- As with F2F survey data, weights can be applied to phone-survey data to correct for potential biases.

If you have other question regarding sampling methods and calculations please contact: contactrecherche@actioncontrelafaim.org or anassur@actioncontrelafaim.org

REFERENCES

- IPC Global Partners. 2019. Integrated Food Security Phase Classification Technical Manual Version 3.0. Evidence and Standards for Better Food Security and Nutrition Decisions. Rome http://www.ipcinfo.org/ipc-manual-interactive/en/
- http://www.openepi.com/Menu/OE_Menu.htm
- https://biostatgv.sentiweb.fr/
- M. E. Tremblay, P. Lavallée, et M. E. H. Tirari, Pratiques et méthodes de sondage. Dunod, 2011.
- P. Ardilly, Les techniques de sondage. Technip, 2006.
- G. Saporta, Probabilités, analyse des données et statistique. Technip, 2011.