SMART

Nutrition Surveys and SMART Methodology in Sub-Saharan Africa

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The lessons learnt (strengths and areas of improvement) listed in the summary tables of this report are drawn from the analysis of secondary information collected, and based on discussions held with the various contributors to this report, and do not necessarily reflect the views of UNICEF and ACF-Canada.

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List of Acronyms

AC Arm Circumference
ACF Action Contre la Faim
AEDES European Agency for Development and Health
AIDS Acquired Immunodeficiency Syndrome
ALIMA Alliance for International Medical Action
ANSD Agence Nationale de la Statistique et de la Démographie
ARI Acute Respiratory Infection
ASAL Arid and Semi-Arid Lands
BCR Bureau Central de Recensement
CIDA Canadian International Development Agency
BMI Body Mass Index
BNFSS Baseline Nutrition and Food Security Survey
BRAC Bangladesh Rehabilitation Assistance Committee
BUCREP Bureau Central des Recensements et des Etudes sur la Population
CAR Central African Republic
CDC Centers for Disease Control and Prevention
CDR Crude Death Rate
CFSAM Crop and Food Security Assessment Mission
CFSA Crop, Food Security and Vulnerability Assessment
CFSVA Comprehensive Food Security and Vulnerability Analysis
CILSS Comité Inter-état de Lutte contre la Sècheresse au Sahel
CLM Cellule de Lutte contre la Malnutrition
CNN Conseil National de la Nutrition
CNO County Nutrition Officer
CNTF County Nutrition Technical Forum
COOPI Cooperazione Internazionale
COSV Coordinamento delle Organizzazioni per el Servizio Volontario
CSPro Census and Survey Processing System
CWIQ Core Welfare Indicators Questionnaire
CWW Concern WorldWide
DAN Division de l'Alimentation de la Nutrition
DANSE Division de l'Alimentation de la Nutrition et de la Survie de l'Enfant
DFID Department for International Development
DHIS District Health Information System
DHS Demographic and Health Survey
DN Division de la Nutrition
DNHA Département de la Nutrition et du VIH/SIDA
DNS Direction Nationale de la Santé
DPS Direction de la Promotion de la Santé
DR District de Recensement
DRC Democratic Republic of Congo
DRPS Direction Régionale de la Promotion de la Santé
DRPSIAP Direction Régionale du Plan, de la Statistique, de l'Informatique, de l'Aménagement du territoire et de la Population
DRS Direction Régionale de Santé
DSRSE Direction de la Santé Reproductive et de la Survie de l'Enfant
EA Enumeration Area
ECHO European Commission Humanitarian Aid and Civil Protection Department
EFSA Emergency Food Security Assessment
ENA Emergency Nutrition Assessment
ENDS Enquête Nationale Démographique et Sanitaire
ENSOMD Enquête Nationale de Suivi des Objectifs du Millénaire pour le Développement
EPM Enquête Prioritaire auprès des Ménages
ESARO UNICEF East and South Africa Regional Office
EWS Early Warning System
FAO Food and Agriculture Organization of the United Nations
FEWS NET Famine Early Warning Systems Network
FSNMS Food Security and Nutrition Monitoring System
FSNWG Food Security and Nutrition Working Group
GAM Global Acute Malnutrition
GDP Gross Domestic Product
HD Health District
HDI Human Development Index
HEA Household Economy Approach
HIS Health Information System

HKI Hellen Keller International
HNTS Health and Nutrition Tracking System
HZ Health Zone
ICRC International Committee of the Red Cross
IMC International Medical Corps
INS Institut National de la Statistique
INSTAT Institut National de la Statistique
INRSP Institut National de Recherche en Santé Publique
IPC Integrated Food Security Phase Classification
IPDSR Institut de Population Développement et Santé de la Reproduction
IFRC French Red Cross
IRC International Rescue Committee
IRD Institut de Recherche pour le Développement
ISTM Institut Supérieur des Techniques Médicales
IYCF Infant and Young Child Feeding
KAP Knowledge, Attitudes and Practices
KIHBS Kenya Integrated Household Budget Survey
KNBS Kenya National Bureau of Statistics
LUANAR Lilongwe University of Agriculture and Natural Resources
MDG Millennium Development Goal
MI Micronutrient Initiative
MICS Multiple Indicator Cluster Survey
MINADER Ministère de l'Agriculture et du Développement Rural
MSF Médecin Sans Frontières
MVAC Malawi Vulnerability Assessment Committee
NDMA Autorité Nationale de Gestion de la Sècheresse
NGO Non-Government Organization
NICS Nutrition Information in Crisis Situation
NIS Nutrition Information System
NITWG Nutrition Information Technical Working Group
NIWG Nutrition Information Working Group
NNC National Nutrition Committee
NNS National Nutrition Survey
NSO Nutrition Support Officer
NSO National Statistical Office
NTF Nutrition Technical Forum
NWG Nutrition Working Group
OCHA Bureau de Coordination des Affaires Humanitaires
ODK Open Data Kit
OFDA Office of United States Foreign Disaster Assistance
OFSAD Organisation des Femmes pour la Santé, la Sécurité Alimentaire et le Développement
ONN Office Nationale de Nutrition
ORN Office Régionale de Nutrition
ORS Oral Rehydration Solution
OTP Out-patient Therapeutic Programme
PNAN Plan National d'Actions pour la Nutrition
PNSA Programme National de Sécurité Alimentaire
PPS Probability Proportional to Size
PRN Programme de Renforcement de la Nutrition
PRONANUT Programme National de Nutrition
PSE Plan Sénégal Emergent
PSI Population Services International
RGPH Recensement Général de la Population et de l'Habitat
RRC Relief and Rehabilitation Commission
RVAC Regional Vulnerability Assessment Committee
SADC Southern African Development
SAM Severe Acute Malnutrition
SCI Save The Children International
SDAN Sous-Direction de l'Alimentation et de la Nutrition
SDG Sustainable Development Goal
SE Section d'Enumération
SECNSA Secrétariat Exécutif du Conseil National à la Sécurité Alimentaire
SENS Standardized Expanded Nutrition Survey
SET Surveillance and Evaluation Team
SETSAN Secrétariat Technique pour la Sécurité Alimentaire et la Nutrition
SIRSA Système d'Information Rurales et de Sécurité Alimentaire
SMART Standardized Monitoring and Assessment of Relief and Transitions
SNIS Système National d'Information Sanitaire
SNSA Service National des Statistiques Agricoles

SNSAP Surveillance Nutritionnelle, Sécurité Alimentaire et Alerte Précoce

SPSS Statistical Package for the Social Sciences

SRANSE Superviseur Régional Alimentation Nutrition et Survie de l'Enfant

SUN Scaling Up Nutrition

TSFP Targeted Supplementary Feeding Program

TNA Technical Nutrition Assistant

ToT Training of Trainers

TWG Technical Working Group

UCAD Université Cheikh Anta Diop

UNCT United Nations Country Team

UNDP United Nations Development Program

UNFPA United Nations Population Fund

UNHCR United Nations High Commissioner for Refugees

UNICEF United Nations Children's Fund

USAID United States Agency for International Development

VAC Vulnerability Assessment Committee

VIH Virus de l'Immunodéficience Humaine

WCARO UNICEF West and Central Africa Regional Office

WFP World Food Programme

WHA World Health Assembly

WHO World Health Organization

List of Tables and Figures

Summary

The SMART Methodology[1] (Standardized Monitoring and Assessment of Relief and Transitions) is widely used in Sub-Saharan Africa to conduct nutrition surveys. This methodology is widely used by governments and humanitarian partners to conduct timely nutrition surveys in all contexts (emergency, development, displaced populations). SMART surveys are conducted on a regular basis, often in connection with seasonal malnutrition, and can be conducted at the national or regional level, and even on a smaller scale. In the West and Central Africa region, many National Nutrition Surveys (NNS) are carried out every year with the SMART Methodology. These NNS are coordinated and implemented by a national technical committee that includes members of government as well as technical and financial partners. Regional or small-scale SMART surveys are also conducted when there is a humanitarian and/or programming need. In the countries of East and Southern Africa, the SMART Methodology is used to conduct regional or smaller-scale surveys. These surveys are coordinated by a nutritional information technical group, and their objective is to assess the severity of a humanitarian crisis and/or as part of nutrition situation surveillance. Today, the results of SMART nutrition surveys are also incorporated into various national nutrition information systems and/or early warning systems.

The primary objective of this analytical report is to document the implementation process of SMART surveys, including coordination mechanisms and use of the results of the different types of SMART surveys (national, regional and small-scale) in different countries in Sub-Saharan Africa. To do so, nine Sub-Saharan African countries were selected based on the profile of their nutrition information system (NIS), implementation of SMART surveys and use of the results to plan nutrition interventions. These countries are: Mali, Senegal, Cameroon, Kenya, South Sudan, Democratic Republic of Congo, Madagascar, Malawi and Mozambique.

Main Findings:

1- There has been a broad use of the SMART Methodology in Sub-Saharan Africa in the last few years: 32 countries out of a total 45 in Sub-Saharan Africa used the SMART Methdology between 2013 and 2015;
2- The implementation of nutrition surveys using the SMART Methodology has contributed to the harmonization of nutrition rapid assessment methods across the region and;
3- The use of NNS/SMART owned by governments has contributed to achieve consensus on the nutrional situation in a country.

As concerns the coordination mechanisms between governments and their partners, this study concluded that coordination between the government (i.e. Ministry of Health, Statistics Institute) and the different technical and financial partners (other government institutions, UN agencies, non-governmental organizations) is generally good during the planning, implementation and results validation/dissemination phases. This is confirmed by the steering committees established for national and/or regional SMART surveys and in the nutrition information working groups (NIWG). Whether in the context of a crisis or of development, the implementation processes, from the SMART survey planning phase to the results dissemination phase, are similar, and comply with SMART recommendations from a technical viewpoint. Governments are becoming increasingly independent from outside technical support, and the interest of technical and financial partners in SMART surveys remains high. The results of these surveys are used in nutrition programming; they are tools that can be used to lobby for the mobilization of resources, and their inclusion in early warning systems helps to enhance responses to crises and emergencies.

With it being increasingly difficult to raise and secure the funds to carry out SMART surveys, regardless of the scale of the survey, some thought will have to be given to the frequency and representation of regional and/or small-scale surveys in order to reduce their associated implementation costs and thereby facilitate the sustainability of the information systems currently in place.

This report also illustrated the key role played by UNICEF as regards the carrying out of SMART surveys in Sub-Saharan Africa. UNICEF provides significant technical support, supplies anthropometric equipment and supports the implementation of SMART surveys financially. ACF Canada's support is also pivotal since the countries that conduct SMART surveys have, for the most part, received SMART Methodology training,

[1] For more information on the SMART methodology: http://smartmethodology.org/

helping to build the SMART capacities of the individuals responsible for conducting the surveys, and also to maintain the technical stringency required to obtain quality data.

This report faced some limitations. The lessons learnt (strengths and areas of improvement) listed in the summary tables of this report are drawn from the analysis of secondary information collected, and based on discussions held with the various contributors to this report, and do not necessarily reflect the views of UNICEF and ACF-Canada. Furthermore the extent to which this information applies to all of Sub-Saharan countries is limited since this analysis was only drawn from a sample of 9 countries out of a total of 45 countries for the Sub-Saharan region. As attention to detail was ensured when choosing countries with different “user profiles” of SMART methods, the sample is considered sufficient to describe and document how the SMART methodology is being adopted by countries.

1. Introduction

1.1 SMART Methodology in Sub-Saharan Africa

The SMART Methodology[2] is a standardized, simplified survey methodology that was designed to aid in the collection of quality, up-to-date data that are necessary for decision-making, particularly in crisis situations, and to harmonise methods used for rapid nutrition assessments, especially during emergencies. Today, the SMART Methodology is used by national health ministries, donors (e.g. ECHO) and partners such as international NGOs (e.g. ACF, Save the Children, WorldVision) and U.N. agencies (e.g. UNICEF, WFP, UNHCR) that wish to conduct rapid nutrition surveys, in all types of situations (emergency, development, displaced populations).

Nutrition information is essential to mounting a response. This information tells stakeholders where, when and how to intervene, as well as the scale and intensity at which the different interventions must be carried out. A review of the secondary data available (databases of nutrition information technical groups and from UNICEF WCARO[3]) indicates that most nutrition surveys in Sub-Saharan Africa use the SMART Methodology. These surveys are conducted on a regular basis, often in connection with seasonal malnutrition, at the national or regional level, and even on a smaller scale.

West Africa and Central Africa region
In the West and Central Africa region, the first National Nutrition Surveys (NNS) using the SMART Methodology took place in Niger and Mauritania in 2006. Since, then, NNS have been conducted in 15 countries in the sub-region (Burkina Faso, Central African Republic, Gambia, Guinea, Mali, Mauritania, Nigeria, Niger, Senegal, Sierra Leone, Togo, Guinea Bissau, Ivory Coast, Chad and Liberia). These NNS are generally coordinated and implemented by a technical/steering committee that includes members of government (Ministry of Health, statistics institutes) and technical and financial partners. These steering committees have a similar make-up and responsibilities to the nutrition information technical groups found in East Africa (see 4.2 Kenya and 4.3 South Sudan). Their primary role is to develop and validate the survey protocol, advise on how to carry out a quality survey, provide support during the entire training and data collection process (technically and logistically) and validate survey results. Other countries across the region, such as Cameroon and the DRC, conduct regional or small-scale nutrition surveys. In 2015, national or regional SMART nutrition surveys were conducted in 11 countries in the West and Central Africa region (Burkina Faso, Cameroon, Chad, Gambia, Guinea Conakry, Mali, Mauritania, Niger, Nigeria and Senegal). These surveys are generally carried out annually (Senegal), bi-annually (Mauritania) or, like in some other countries of the sub-region, every other year, every three years or even every four years (Guinea, Gambia).

East Africa and Southern Africa region
In Eastern and Southern African countries, the SMART Methodology is primarily used to conduct nutrition surveys at the regional level (first administrative level) or at a lower level of representation (second administrative level – county/district). Surveys at a level of representation below the first administrative level are called “small-scale” nutrition surveys. The main goal of small-scale nutrition surveys is to assess the severity of a humanitarian crisis, and they are generally coordinated by a nutrition information technical working group (NITWG). The NITWG is responsible for validating survey protocols and making recommendations that will yield high-quality data and obtain reliable, valid results for all technical and financial partners.

Regional surveys are instead aimed more at monitoring the nutrition situation of children. The following countries in the sub-region currently conduct regional or small-scale SMART nutrition surveys: Ethiopia, South Sudan, Somalia, Uganda, Kenya, Burundi, Comoros and Madagascar. In 2014, the first SMART National Nutrition Survey (NNS) was conducted in Tanzania.

[2] For more information on the SMART Methodology: http://smartmethodology.org/
[3] Documents available upon request

1.2 Rationale and objectives of the analysis

After ten years of implementation of SMART nutrition surveys across Sub-Saharan Africa, it would be relevant to provide details of the key processes, steps and tools used to implement the different types of SMART surveys over the last few years. This should provide lessons learnt on the planning and implementation processes based on the survey type, and to highlight shortcomings in the planning of a SMART survey.

The primary objective of this analytical report is to document the implementation process of SMART surveys, including coordination mechanisms and use of results of the different types of SMART surveys (national, regional and small-scale) conducted in different countries in Sub-Saharan Africa.

2. Methodology

Purposeful sampling was used for the identification and selection of information-rich countries, across the two regions, based on the different implementation profiles of SMART surveys. All 45 countries in East and Southern Africa, and in West and Central Africa were considered for this review. Countries in North Africa were not considered for this report. To document the current use of national and small-scale SMART surveys in both regions, a sample of nine countries were selected using the following criteria:

1. Type of SMART surveys conducted (national, small-scale or none)
2. Frequency and density of SMART surveys
3. Existence of an early warning system
4. Rationale for conducting SMART surveys
5. Key partners in SMART survey implementation

2.1 Country selection process

1. All the 45 countries were first classified into 3 categories based on the type of SMART nutrition survey carried out in 2013 and 2015. This time period (2013-2015) was chosen to facilitate the availability and collection of secondary information.

Category 1
- ✓ Countries that conduct SMART National Nutrition Surveys (NNS);

Category 2
- ✓ Countries that conduct regional and/or small-scale SMART surveys;

Category 3
- ✓ Countries that conduct no or few SMART nutrition surveys.

2. The frequency and density of SMART surveys was then assessed for each country, starting with the countries in Category 1, then Cateory 2 and 3, based on the criteria below.

Category 1: Implementation of SMART NNS
Based on information provided by UNICEF WCARO and UNICEF ESARO, the following categories were established for countries that conduct national surveys:

- ✓ Yes: SMART NNS were conducted annually between 2013 and 2015
- ✓ No: SMART NNS were conducted between 2013 and 2015 but not annually
- ✓ None: No SMART NNS was conducted between 2013 and 2015

Category 2 and 3: Estimating the density of SMART survey implementation
Based on the average number of SMART surveys conducted in East Africa between 2013 and 2015, the following categories were established for regional or small-scale surveys (representative survey at the second administrative level or lower):

- ✓ No survey: No SMART survey was conducted annually between 2013 and 2015
- ✓ Low density: Between 1 and 10 SMART surveys were conducted annually between 2013 and 2015
- ✓ High density: More than 10 SMART surveys were conducted annually between 2013 and 2015

These estimates were based on available information going back to 2013 provided by UNICEF WCARO, UNICEF ESARO and ACF-Canada.

Other criteria were then used to better define the profile[4] of the nutrition information system of each country:

3. Existence of an early warning system

[4] ***Clarification note:*** *It is important to note that this report does not elaborate a complete and detailed profile of the nutritional information systems of the countries included. The report merely documents whether the SMART survey conducted at the country level is part of the country's nutritional information system and how the results are used within this system.*

Based on data from the Integrated Food Security Phase Classification (IPC), a list was drawn up of the countries that use this classification and contribute to the enhancement of the early warning system. This categorization also includes the West African countries that use the Harmonized Framework (*Cadre Harmonisé*) developed by the CILSS. This Harmonized Framework also produces a food security analysis; it was recently updated and improved using key aspects of the IPC analytical approach.

4. *Elements that trigger implementation of a SMART survey*

Based on the data compiled by UNICEF WCARO and UNICEF ESARO between 2013 and 2015, two main triggers can be identified:

- ✓ Humanitarian crisis: Conducting a SMART survey to respond to a crisis, in particular by providing guidance on the allocation of resources and emergency programs
- ✓ Development context: Conducting SMART surveys regularly to contribute data to nutrition surveillance systems

5. *Identification of key partners that support SMART surveys*

Based on the secondary information provided by nutrition information technical groups in East Africa and by UNICEF's regional offices, the following categories were established:

- ✓ X: The government or partners (NGOs and UN Agencies) *participate* in the implementation of SMART surveys
- ✓ XX: The government or partners *are responsible for* the planning, training, data collection, analysis and final reporting phases of SMART surveys

This categorization did not take into account the funding mechanisms of SMART surveys.

Based on the above-mentioned criteria, all of the countries in Sub-Saharan Africa (N=45) were placed into one of the three categories, shown below in Figure 1.

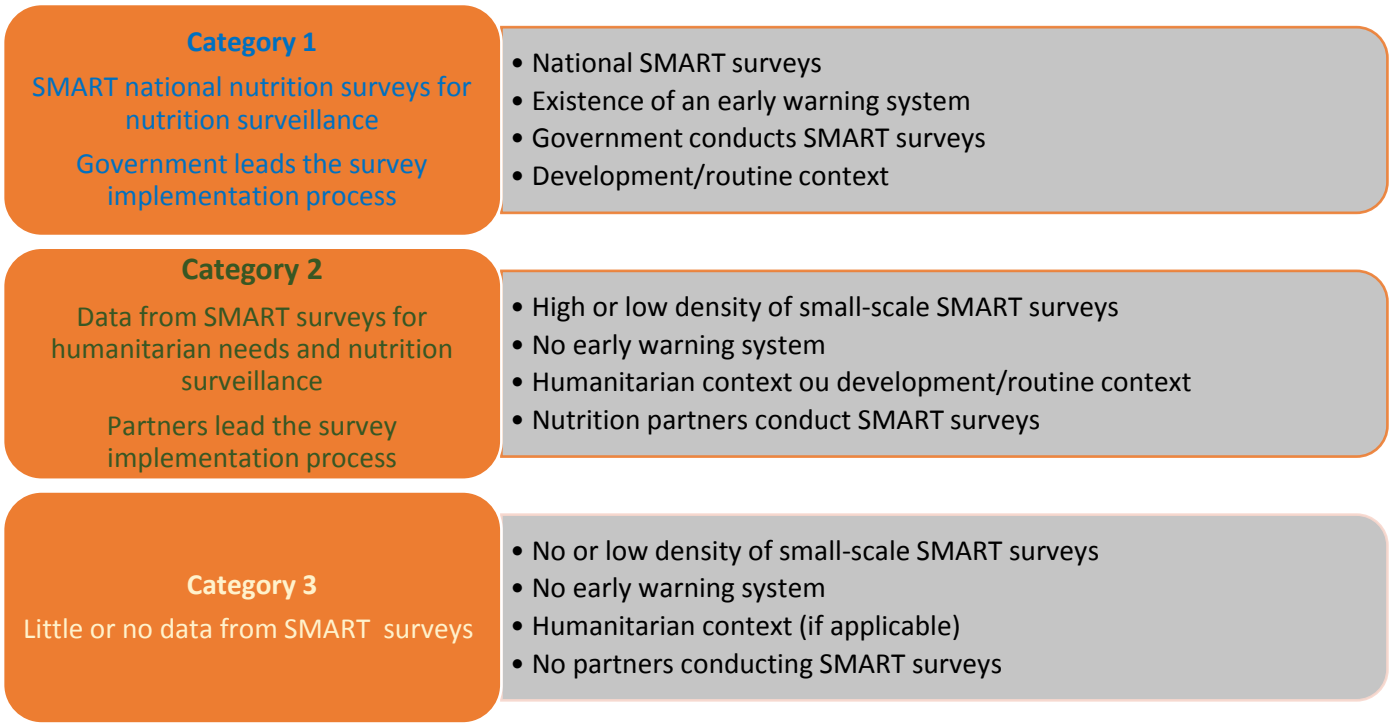


Figure 1: Classification of Sub-Saharan African countries based on the profile of their national nutrition information system

2.2 Results of the country selection process

In Category 1, two countries were selected from West Africa: Mali and Senegal.The main characteristic of the countries in Category 1 is that National Nutrition Surveys using SMART Methodology are conducted by the government as part of nutrition situation monitoring.

In Category 2, Cameroon and the DRC were selected from Central Africa, as well as South Sudan, Kenya and Madagascar from East Africa. The main characteristic of Category 2 countries is that their SMART regional or small-scale nutrition surveys are conducted primarily by nutrition partners. These surveys are most often carried out as part of nutrition situation monitoring or in a humanitarian context.

In Category 3, Malawi and Mozambique were selected for Southern Africa. These countries are characterized by the absence of nutrition surveys using the SMART Methodology or the implementation of a few nutrition surveys on a small-scale only.

Tanzania and Burkina Faso were automatically eliminated from the selection process because both countries were selected for the case studies accompanying this analytical report[5].

In order to have a good descriptive sample for this analytical report, none of the countries selected could have the same characteristics in terms of the profile of their nutrition information system and/or the type of survey conducted and use of the SMART Methodology. Table 1 below presents the profile of the different countries selected.

Table 1: Profiles of the countries selected for analysis

Country	SMART survey density		Annual SMART NNS	Existence of an early warning system	Rationale for conducting SMART surveys		Key partners in SMART survey implementation		
	Small-scale	***Regional***			***Humanitarian crisis***	***Development/routine context***	***NGOs***	***UNICEF***	***Government***
Mali	Low	Low	Yes	Yes	X	X	X	X	XX
Senegal	Low	Low	Yes	Yes		X	X	XX	XX
Cameroon	Low	Medium	Non	Non	X	X	X	XX	XX
DRC	High	Low	None	Yes	X		X	X	XX
Kenya	Medium	High	None	Yes		X	X	X	XX
South Sudan	High	Medium	None	Yes	X	X	X	X	XX
Madagascar	High	Low	None	No	X		XX	X	X
Malawi	Low	None	None	Yes	X	X	X	X	XX
Mozambique	None	None	None	No					

X: participate in the implementation of SMART surveys; XX: are responsible for conducting SMART surveys

2.3 Collection of secondary information

Secondary information from the selected countries was collected in various ways: emails, teleconferences, meetings and interviews. UNICEF provided the contact information of key individuals in the selected countries, thereby making it possible to organize teleconferences and send out emails to the different nutrition partners to collect more extensive information on the nutrition information systems and nutrition surveys in their respective countries.

Additional information was collected directly from those involved in the SMART survey implementation process at country level through the organization of a number of telephone meetings and meetings with key partners in the selected countries. The list of organizations and institutions encountered by country, as well as the timetable for face-to-face and telephone interviews are presented in Table 2 below. The detailed list of contributors for this report, as well as the interview guide used for interviews or interviews with countries, are presented in Annexes 1 and 2.

[5] National Nutrition Surveys using SMART Methodology. Case Study: Burkina Faso (April 2016). The SMART Team at Action Agains Hunger Canada; UNICEF
National Nutrition Surveys using SMART Methodology. Case Study: Tanzania (April 2006). The SMART Team at Action Against Hunger Canada; UNICEF

Table 2: List of organizations and institutions that contributed to the report and schedule of interviews and telephone interviews by country selected for this evaluation

	Organisations / Institutions	***Position***	***Interview dates***	***Telephonique interview dates***
Kenya	ACF-Canada	Regional SMART Coordinator East Africa	Du 04/04/2016 au 06/04/2016	-
	UNICEF Kenya	Nutrition Specialist (M&E)	-	04/04/2016
	Ministry of Health	Food Security and Nutrition Specialist	04/04/2016	-
	Ministry of Health	Nutritionist	-	15/04/2016
Mali	UNICEF Mali	Nutrition Specialist	-	28/04/2016
	Freelance	Nutrition Consultant	-	27/04/2016
	UNICEF Burkina Faso	Nutrition Manager	11/04/2016	
Sénégal	UNICEF Senegal	Nutrition Specialist	-	03/05/2016
	UNICEF Senegal	Nutrition Specialist	-	03/05/2016
Cameroun	UNICEF Cameroun	Nutrition Specialist	-	03/05/2016
	Freelance	Nutrition Consultant	-	03/05/2016
R.D.C	UNICEF RDC	Nutrition Specialist	-	11/05/2016
	UNICEF RDC	Nutrition Specialist (M&E)	-	16/05/2016
	UNICEF RDC	Nutrition Specialist	-	16/05/2016
	UNICEF RDC	Nutrition Specialist (emergencies)	-	16/05/2016
Sud Soudan	UNICEF Sud Soudan	Nutrition Information Manager	-	13/05/2016
	ACF-Canada	Regional SMART Coordinator East Africa	Du 04/04/2016 au 06/04/2016	
Madagascar	UNICEF Madagascar	Nutrition Manager	-	13/05/2016
Malawi	UNICEF Malawi	Nutrition Specialist	-	12/05/2016
Mozambique	UNICEF Mozambique	Nutrition Specialist	-	13/05/2016

UNICEF's regional offices (WCARO and ESARO) shared all the relevant documents that might be required for this review. These documents included in particular the schedule of surveys conducted between 2013 and 2015, the final survey reports, and the protocols, budget, tools, etc. of the SMART surveys. A list of all the documents used for this analytical report can be found in the bibliograpy at the end of this report.

2.4 Limitations of the analytical report

In this report, the method used to document the SMART survey processes at country level was based on a desk-review of relevant documents shared by UNICEF and ACF-Canada and on secondary information collected from key informants in the different countries selected. A sample of 9 countries was drawn from a total of 45 for the Sub-Saharan region, therefore the information displayed in this report may not reflect the overall situation in the subregion. However special care was put in choosing countries with different "user profiles" of SMART methods. Hence the sample is considered sufficient to describe and document how the SMART method is being adopted by countries.

The collection of secondary information took more time than originally planned by limiting the time remaining to perform more complex analyzes of the information. It is worth noting that this report does not present a complete and detailed profile of the nutrition information systems of the countries included but identifies whether SMART surveys are a part of the country's nutrition information system. The report

neither presents a review of the SMART methodology or its tools, nor a review of the quality of the surveys produced (sampling, indicators, data analysis) since these objectives were outside the scope of this study. In the future, a systematic review of the quality of SMART surveys and comparison of their quality to the quality of other surveys that include anthropometry measurements (primarily DHS and MICS) can be highly interesting.

Finally, a general description of the use of the results of SMART surveys was presented for each of the countries selected for this report. Further analysis, using a more complex evaluation design should be conducted in future studies to better inform on the role that the SMART survey results play in national nutrition information nutrition advocacy, policy development and nutrition programming.

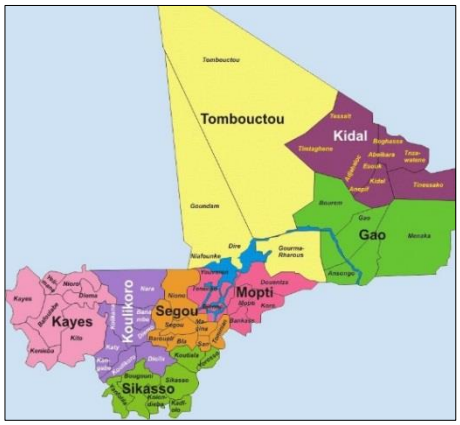
3. Countries of Categorie 1

3.1 Mali

3.1.1 Background and nutrition situation

Background

Mali is a vast isolated country in the heart of the Sahel region. Mali has suffered numerous food, nutrition and political crises in the last few years: a pastoral crisis in 2010, drought in 2011, security and political crises in 2012 and 2015. At the same time, the country's social indicators, although they have improved recently, are still among the lowest in the world, and the country ranks 183rd out of 188 on the UNDP Human Development Index (HDI) of 2015. 45% of the population lives on less than $1.25 per day.



Following a political coup in March 2012, the northern part of the country was occupied by non-government armed groups, cutting off the North from the South regions of the country. Despite a military intervention in January 2013, these events led to significant displacement of the population within and outside the country. Despite persistent instability, the families that fled in those years are starting to return in large numbers, putting significant pressure on Malian communities, which must share already limited resources.

Mali is divided administratively into eight regions. Bamako has special status as the District of Bamako. Each region is subdivided into circles. There are 49 circles in Mali. Each circle comprises several *communes* (towns). There are six *communes* in the District (or circle) of Bamako.

Nutrition situation

The results of the last SMART National Nutrition Survey (NNS) are presented in Figure 2 below. However, it is important to note that this national survey covered all regions in Mali except for the Kidal region, which was excluded due to insecurity issues. The results indicate a national GAM prevalence of 12.4%, which includes a rate of 2.8% of Severe Acute Malnutrition (SAM). These acute malnutrition prevalence rates place the country in a "serious" situation, according to the WHO classification[6]. The prevalence of chronic malnutrition is 29.3%, roughly a third of which is severe (9.2%). The underweight prevalence was 24.2%.

In terms of the trend in the nutritional status of children (Figure 3 below), it is noted that chronic malnutrition increased significantly between 2010 and 2012-13, before dropping again in 2015 to below the 30% threshold. The prevalence of acute malnutrition and underweight followed similar trends between 2001 and 2015, but show no signs of real improvement, in particular with emaciation prevalence rates still above the 10% threshold. Underweight did, however, drop significantly between 2001 and 2015.

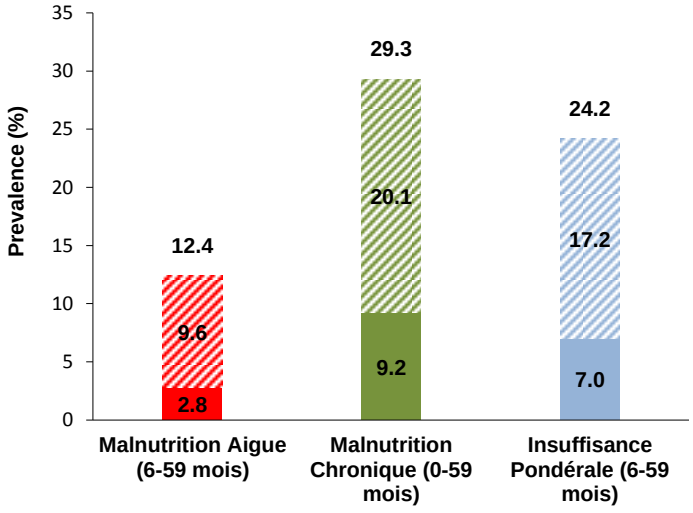


Figure 2: Nutritional status of children under the age of 5 in Mali (2015 SMART survey, WHO 2006 Growth Standards)

[6] Classification of nutritional status according to WHO (OMS 2000): Critical: Global Acute Malnutrition (GAM) prevalence >15%; Serious: 10% ≤ GAM <15%; Precarious: 5% ≤ GAM <10%; Acceptable: GAM <5%.

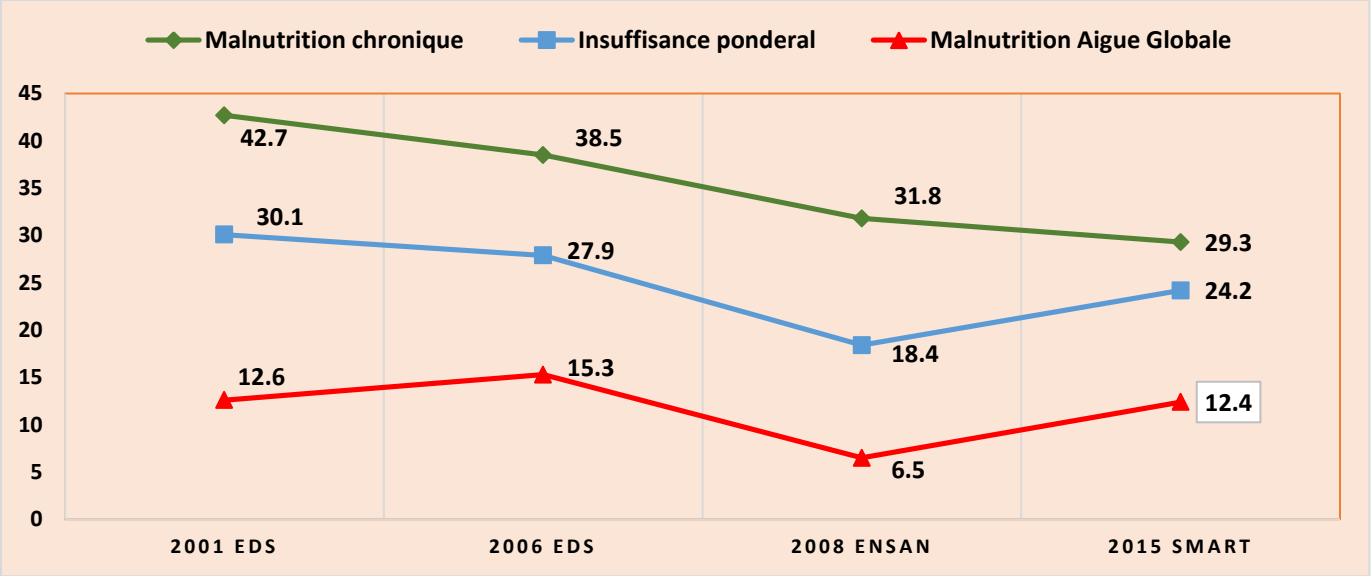


Figure 3: Trends in malnutrition prevalence in Mali between 2001 and 2015 (WHO 2006 Growth Standards)

3.1.2 Introduction of the SMART Methodology in Mali (2008-2012)

The SMART Methodology was introduced in Mali in 2008 primarily to standardize nutrition survey methodologies and improve the quality of nutrition information. In September 2008, the Nutrition Division of the Direction Nationale de la Santé (DNS/DN), with the support of ACT, organized national SMART Methodology training. It was a Training of Trainers (ToT) session on the SMART Methodology. The objectives of that ToT were to train enumerators to carry out nutrition surveys using the SMART Methodology and train survey coordinators in the planning, implementation and data analysis of a SMART nutrition survey. A second SMART Methodology training session was organized in 2009. In total, 51 people were trained on how to use the SMART Methodology in 2008 and 2009.

Prior to 2009, various national institutions as well as national and international organizations conducted many nutrition assessments in Mali to plan nutrition programs, evaluate the efficiency of existing programs or assess the nutrition situation of the country, a region or an area. Each of the institutions or organizations used its own methods, thereby making it impossible to compare one assessment to another. Therefore, it became necessary to standardize methodologies.

In April 2009, a workshop on standardizing nutrition survey methodologies using SMART Methodology was organized in Bamako. One of the workshop's outcomes was the adoption of a "Guide to Standardized Nutrition Survey Methodologies Incorporating the SMART Methodology". The guide was written jointly by the government and its technical and financial partners. It was also part of the collaboration between the DN, ACF Mali and UNICEF aimed at standardizing methodologies for conducting nutrition surveys in Mali.

Before national and/or regional SMART surveys were implemented in 2011, Mali and its partners conducted primarily small-scale nutrition assessments:

- ✓ Nutrition surveys in the Baraouéli circle, Ségou region, conducted by the Malian Red Cross in March 2011
- ✓ SMART Anthropometric and Mortality Survey in the Kayes region, Kita circle, in the *communes* of Kokofata and Koulou, conducted by ACF-Mali in June 2011

The Government of Mali, via its national statistics institute (INSTAT) and the DN, decided to conduct a SMART national nutrition survey, with financial and technical assistance from UNICEF and the WFP, to address the shortcomings of localized SMART surveys and to provide better analysis and comparison of the data collected across the country. This survey was carried out in June/July 2011 and was part of the Government of Mali-UNICEF cooperation program for the 2011-2012 period, which aimed to strengthen the nutrition information system and create a reliable and updated database to be able to monitor and assess the impact of nutrition interventions and also to monitor indicators of child survival and development.

In 2012, because of the double emergency (security and nutrition) that hit Mali, updated nutrition data was needed to better respond to humanitarian needs and to monitor inter-annual trends in malnutrition prevalence. Therefore, a second SMART nutrition survey was conducted in August 2012. That said, the

complicated situation in the country's northern region meant that a representative SMART survey was conducted only in the 5 southern regions and the District of Bamako; the northern regions (Kidal, Gao and Tombouctou) were excluded.

UNICEF Mali has been provideing technical support since 2011 to the survey Steering Committee and Technical Group via the Monitoring and Evaluation Specialist of the Nutrition Section and/or the recruitment of a SMART survey consultant, notably to continually build the capacities of the members involved in the implementation of these SMART surveys.

3.1.3 SMART nutrition surveys conducted between 2013 and 2015

The process for implementing SMART surveys in Mali is relatively quick and takes approximately 5 months (Figure 4). After the planning phase –lasting about one month – data collection is scheduled for the lean season (*soudure*), which in Mali goes from April/May to September/October. The review of secondary information confirmed that all final survey reports done between 2013 and 2015 were completed and published. They were generally finalized and distributed less than two months after data collection has been completed.

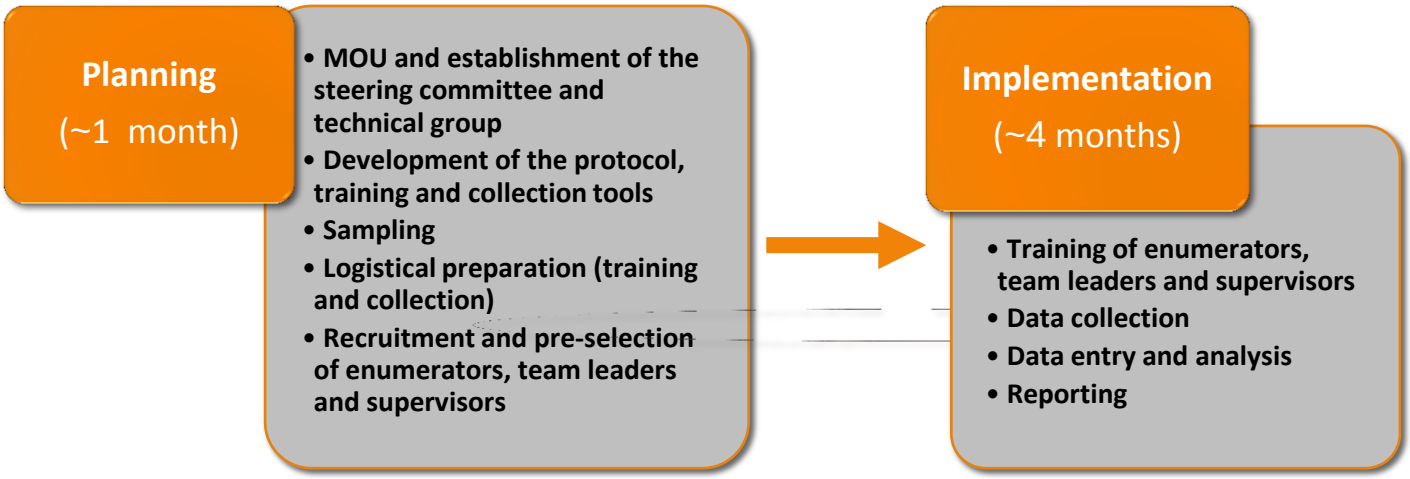


Figure 4: Summary of the different activities conducted to implement a SMART NNS in Mali

A memorandum of understanding is signed between INSTAT, responsible for survey implementation, the DN and Mali's technical and financial partners (UNICEF, WFP, FAO, WHO) to conduct SMART nutrition surveys. As such, the SMART survey planning phase (protocol and budget) is carried out by members of the government and the technical and financial partners.

The design and execution of SMART surveys are managed at the national level by three different groups:

- ✓ A National Directorate (comprising mainly the directors of the government agencies involved (INSTAT, DN) and financial partners);
- ✓ A Steering Committee established by the National Directorate, comprising INSTAT, DN, UNICEF, WFP, FAO and WHO representatives;
- ✓ A Technical Group selected from the Steering Committee comprising INSTAT and UNICEF (SMART Survey Consultant), with support from certain partners (WFP and FAO specifically).

Table 3 below summarizes the different activities that were carried out during SMART NNS implementation in Mali, as well as the roles and responsibilities of each of the stakeholders in the planning, training, data collection, analysis and reporting processes, and in the dissemination of results.

Table 3: Summary of the different activities in the implementation of SMART NNS between 2013 and 2015, and roles and responsibilities of the government and nutrition partners

Steps	*Activities*	*Person(s) responsible*
Planning	✓ MOU and development of the survey protocol and budget ✓ Finalization of the survey protocol and preparation of training and data collection tools ✓ Sampling (selection of clusters to be enumerated and printing of EA maps) ✓ Preparation of logistics for training, data collection and entry/analysis of the data collected ✓ Identification of enumerators and supervisors	✓ National Directorate ✓ Steering Committee ✓ Technical Group ✓ SMART Survey Consultant (UNICEF)
	✓ Validation of the survey protocol, tools and budget ✓ Ethical Discharge (2014)	✓ INSTAT Ethics and Approval Committee ✓ Ministry of Health Ethics Committee (2014)
Training	✓ Training of enumerators and team leaders (5-6 days) ✓ Standardization test ✓ Pre-survey day ✓ Selection based on the results of a written test and the standardization test ✓ Specific training for team leaders (ENA software) (3 days)	✓ Technical Group (trainers) ✓ SMART Survey Consultant (UNICEF) ✓ Participants of the 2008 SMART Methodology ToTs: INSTAT, DN, INRSP, SAP (trainers) ✓ Participants selected from the pool of INSTAT enumeration officers
Data Collection	<u>Data collection:</u> ✓ 1 day per cluster: - Census of households and selection of households to be enumerated (systematic random) - Data collection and entry in ENA	✓ Enumerators ✓ 1 team leader and 2 measurers per team
	<u>Field supervision:</u> ✓ Supervision of survey teams	✓ Technical Group (supervisors) ✓ SMART Survey Consultant (UNICEF) ✓ Participants of the 2008 SMART Methodology ToTs: INSTAT, DN, INRSP, SAP (supervisors)
	✓ Supervision visits	✓ INSTAT, DN administration (supervision visits) ✓ UNICEF and WFP nutrition focal points (supervision visits)
	<u>Awareness-raising and Communication</u> ✓ Awareness-raising/communication around the survey to administrative and health authorities and the population (letters) ✓ Facilitation of team introductions in the regions/provinces (DRS)	✓ Information cascaded down from DN ✓ DRS
Data Entry & Analysis	✓ Data entry (dual entry) ✓ Use of ENA, CSPro and SPSS software	✓ INSTAT data entry officers ✓ SMART Survey Consultant (UNICEF)

Steps	*Activities*	*Person(s) responsible*
Final Reporting	✓ Presentation of the provisional report and draft of the final report to the Steering Committee ✓ Writing of the final reporting	✓ Steering Committee ✓ Technical Group ✓ SMART Survey Consultant (UNICEF) ✓ Results and reports validated by the Steering Committee ✓ INSTAT sends final report to UNICEF
Dissemination of Results	✓ Presentation of results at Nutrition Cluster and UNCT Mali meetings ✓ Presentation of results in the regions via INSTAT, DN, DRS and joint missions ✓ Distribution of the final report to all partners	✓ Steering Committee ✓ INSTAT and DN ✓ UNICEF ✓ Partners (DRS and joint missions) ✓ DN responsible for copying and distribution of the final report

Overview of SMART surveys from 2013 to 2015

The primary objective of the surveys conducted in Mali between 2013 and 2015 was to obtain updated nutrition data for surveillance of the nutrition situation. The use of the SMART Methodology generally yields high quality, and therefore reliable data. Achieving the Millennium Development Goals (MDG) by 2015 also required regular, updated data to closely monitor indicators of progress in child survival and development.

In 2013, INSTAT and DN, backed by their experience with the SMART nutrition survey in 2011 and 2012, undertook a third SMART nutrition survey, with the technical and financial partners. As the North was still beset by security issues, the survey only covered six of the nine regions, as in 2012. This survey took place during the same period as in previous years, namely during the lean season. The Gao region was enumerated on its own in May 2013 to respond to an emergency (food, nutrition, political crisis and cholera outbreak). This survey was coordinated by INSTAT and DN, with support from NGOs in the region, Nutrition Cluster partners and funding from UNICEF and WFP.

The framework of cooperation between the Malian government and its nutrition partners in the period 2014-2015 enabled, as in past years, strengthening of the nutrition information system through SMART nutrition surveys to obtain reliable and regular cross-comparable data from year to year. In 2014, the fourth SMART nutrition survey was conducted, this time covering seven of the nine regions in the country. The Kidal and Gao regions were excluded once again due to security issues. These two regions were, however, enumerated in November/December 2014 by the NGO IEDA Relief for the Kidal region, and by ACF for the Gao region, with financial support from UNICEF and ECHO. The 2015 SMART survey was carried out in May, right at the start of the lean season, and was representative of all regions except Kidal, which was still excluded due to safety concerns.

Budget and funding

The 2013 to 2015 SMART surveys were carried out by INSTAT, DN and various technical partners, and were made possible by funding from development partners. The surveys conducted in 2013 and 2014 in the country's northern Gao and Kidal regions were particularly expensive, primarily due to the cost of renting survey vehicles in these regions (rental to avoid car theft) and the cost of having enumerators travel from Bamako to the northern regions. The 2014 survey was also especially expensive because it was representative not only at the regional level but also for circles in two regions (Mopti and Sikasso) and Bamako. The 2015 survey had almost national coverage, with eight out of the nine regions being covered. Based on this survey, the average cost per stratum is around USD $26,000. In comparison, the cost of the first National Nutrition Survey conducted in 2014 in Tanzania covering 30 strata was about USD $15,000 per stratum[7]. The National Nutrition Survey in Burkina Faso covering between 28 and 30 strata, depending on the year, cost approximately USD $21,000 per stratum.

According to UNICEF, Mali is currently struggling to raise funds from its primary donors for nutrition activities, in particular SMART surveys; it would be a good idea to reduce the cost of future SMART surveys to guarantee the long-term execution of the survey, and potentially its institutionalization. INSTAT

[7] National Nutrition Surveys using SMART Methodology. Case-Study: Tanzania (April 2006). The SMART Team at Action Against Hunger Canada; UNICEF

is responsible for the anthropometric equipment used for the SMART surveys (Seca scales and Shorr height boards). This equipment was supplied by UNICEF Mali (UNICEF Supply - Inputs Division).

Table 4 below summarizes the survey period, representation, indicators and cost, and the different financial partners of SMART surveys conducted in Mali between 2013 and 2015.

Table 4: Survey period, representation, indicators, cost and funding of SMART surveys conducted in Mali between 2013 and 2015

	Gao survey May 2013	***South Mali survey July-Aug. 2013***	***Survey July-August 2014***	***Gao survey Nov.-Dec. 2014***	***Kidal survey Nov.-Dec. 2014***	***Survey May-June 2015***
Survey period	Start of lean season	Lean season	Lean season	Post-lean season (harvest)	Post-lean season (harvest)	Start of lean season
Representation	Regional and small-scale → 4 circles in the Gao region	Regional → 5 regions in the South (Kayes, Koulikoro, Sikasso, Ségou and Mopti) and the District of Bamako	Regional and small-scale → 6 regions (Kayes, Koulikoro, Sikasso, Ségou, Mopti and Timbuktu) and the District of Bamako → Circles in the regions of Mopti and Sikasso	Regional and small-scale → 4 circles in the Gao region	Regional → Kidal region	Regional → All regions except Kidal
Indicators						
Acute Malnutrition	X	X	X	X	X	X
Chronic Malnutrition	X	X	X	X	X	X
Underweight	X	X	X	X	X	X
Vitamin A Supplementation and Deworming		X				
Morbidity		X				
Anemia (women and children)		X				
IYCF Indicators		X	X	X		
Nutritional status of women (MUAC and BMI)		X	X	X		X
Participation in nutritional education sessions			X			X
Hand washing, type of latrines and drinking water			X			
Retrospective mortality	X	X	X	X	X	X
Financial partners and total cost (Source: UNICEF Mali)						
Funding	UNICEF, WFP	UNICEF	UNICEF, WFP, FAO, WHO	UNICEF	UNICEF	UNICEF, WFP, FAO, WHO
Total Cost (US$)*	**USD $66,796** (33,704,000 CFAF)	**USD $199,479** (100,098,972 CFAF)	**USD $708,444** (335,529,947 CFAF)	**USD $99,999** (49,946,867 CFAF)	-	**USD $209,931** (122,514,000 CFAF)

X: Indicator included

***** The conversion rates used between West African CFA francs (CFAF) and the U.S. dollar (US$) are those on the 1st of each month, 2 months before data collection starts**.**

3.1.4 Nutritional information systems in Mali and the SMART Methodology

Mali has the following nutrition information systems:

Early Warning System (EWS)
The EWS is based on the ongoing collection of data related to the food and nutrition situation of populations. These data cover a wide range of areas such as rainfall and rise in river levels, pests, crop years, livestock farming and fishing, market prices, population migrations, food habits and reserves, and health condition. This information is collected from the government's administrative and technical departments, elected officials and civil society, from the *communes* to the circle administrative centres, regional administrative centres and finally Bamako.

A recommendation was made in the final report of the 2015 SMART survey to continue nutrition surveillance by conducting periodic annual nutrition surveys and also by establishing a stronger Early Warning System in the regions with worrisome GAM rates, and thereby identify the most affected districts/circles. Via the *Commissariat à la Sécurité Alimentaire* (Food Security Commission - CSA), the EWS also implements Baseline Nutrition and Food Security Surveys (BNFSS 2007, 2008 and 2015). The members of the EWS participate in the implementation of SMART surveys, especially during the training of trainers and supervision of data collection.

Harmonized Framework
In the 2000s, the *Comité permanent Inter-États de lutte contre la Sécheresse dans le Sahel* (Permanent Interstate Committee for drought control in the Sahel - CILSS) developed a harmonized framework (*Cadre Harmonisé*) for analyzing and identifying at-risk areas and vulnerable groups in the Sahel[8]. The 2005 crisis in Niger highlighted the importance of measuring the seriousness of food insecurity, and of relying on a surveillance system that encompasses different indicators to triangulate information on food and nutrition security in the region.

The IPC (Integrated Food Security Phase Classification) is a standardized assessment scale that integrates food security, nutrition and livelihood data. It establishes the severity of a crisis and the implications for humanitarian action. During the meeting of the Harmonized Framework Technical Committee in Niamey in July 2008, it was agreed that some elements of the IPC analysis would be included in the Harmonized Framework. Since version 2.0 of the IPC manual, the Harmonized Framework has been trying to approximate the IPC methodology.

The results of the BNFSS surveys conducted by the EWS team, the SMART nutrition surveys and the HEA (Household Economy Approach) food security surveys enhance the early warning system with a view to refining the results of the assessment to identify at-risk areas and determine vulnerable populations, which is necessary to more specifically target populations in an acute food insecurity situation.

3.1.5 Dissemination and use of SMART survey results

The DN is responsible for the reproduction of the final survey report and its distribution to all partners. The results of SMART surveys are generally presented at meetings of the Nutrition Cluster and the Mali United Nations Country Team. The results are used for advocacy to strengthen nutrition programs and are also disseminated across the regions via joint missions organized by the government (INSTAT, DN, DRS) and its various partners.

SMART surveys play an important role in surveillance of the nutrition situation during a crisis. The results are used to better plan the global response to various crises (political and/or nutrition and food) that have hit Mali particularly hard in recent years. As with the vast majority of the countries in the sub-region, the results of SMART surveys are used to manage acute malnutrition (calculation of the number of malnourished children and the expected number of children in support programs) and to assess the general impact of nutrition interventions on different types of malnutrition and various action plans.

The results of SMART surveys are used to analyze the food and nutrition situation within the Harmonized Framework.[9]

[8] Sixteen (16) countries are currently involved in the implementation of the Harmonized Framework: Benin, Burkina Faso, Cape Verde, Chad, Gambia, Ghana, Guinea Bissau, Guinea Conakry, Ivory Coast, Mali, Mauritania, Niger, Togo, Liberia, Sierra Leone and Senegal.
[9] Harmonized Framework Manual version 1.0 http://www.agrhymet.ne/PDF/Manuel%20CH_version%20finale.pdf

3.2 Senegal

3.2.1 Background and nutrition situation

Background

Senegal is a country in West Africa bordered by the Atlantic Ocean in the West, Mauritania in the North, Mali in the East and Guinea and Guinea-Bissau in the South. Gambia is a quasi-enclave within Senegal, coming over 300 km into its territory. Senegal is ranked 170th out of 188 countries on the UNDP HDI for 2015. Nearly half of its population of 13.7 million lives in poverty and has difficulty meeting basic needs such as food, health, education and housing.

The agricultural sector employs nearly 60% of the population but contributes only 8% to the GDP. Although politically stable in a region affected my multiple shocks, Senegal is also affected by the food and nutrition crisis. This crisis primarily affects households with poor sociodemographic and economic conditions. The high frequency of climate shocks associated with persistent poverty, high food prices and low resilience of households and communities have serious repercussions on the nutritional status and food security situation in the most vulnerable households, especially in the country's rural areas. However, the government is determined to stimulate national economic growth and reduce poverty, particularly through the Emerging Senegal Plan (PSE in French), a national strategy that supports economic development and anti-poverty and malnutrition efforts.

Since 2008, Senegal has been divided administratively into 14 regions. Each region is sub-divided into departments. There are 45 departments in Senegal. Each department contains several neighbourhoods, themselves comprised of county boroughs, towns, villages and rural communities.

Nutrition situation

The data from the last SMART National Nutrition Survey in 2015 (presented in Figure 5 below), show a national GAM prevalence of 9.0%, including 1.3% SAM. These acute malnutrition rates mean the country's situation is "precarious", according to the WHO classification. The national chronic malnutrition prevalence is 17.1% or "acceptable" by the WHO classification. Senegal is also one of the rare countries in Sub-Saharan Africa with a stunting prevalence below the 20% threshold. The underweight prevalence was 13.9%.

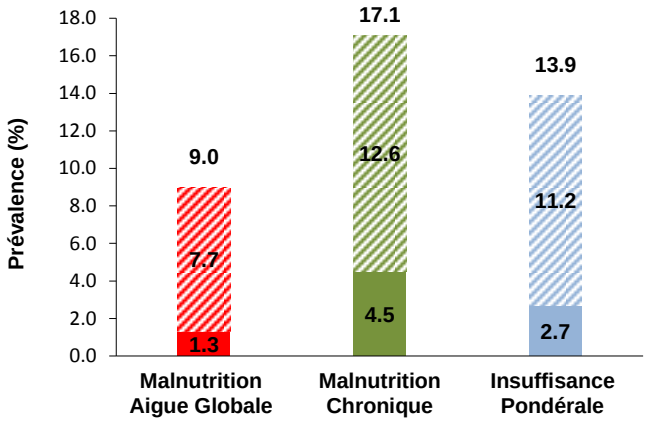


Figure 5: Nutritional status of children under the age of 5 in Senegal (2015 SMART survey, WHO 2006 Growth Standards)

The trends in malnutrition prevalence in Senegal between 1992 and 2015 (Figure 6 below) show a relatively stable acute malnutrition prevalence over the last 25 years, oscillating around 9%. The stunting prevalence has been halved in 25 years, dropping from 33.7% in 1992 to 17.1% in 2015. Underweight dropped significantly between 1992 and 2015.

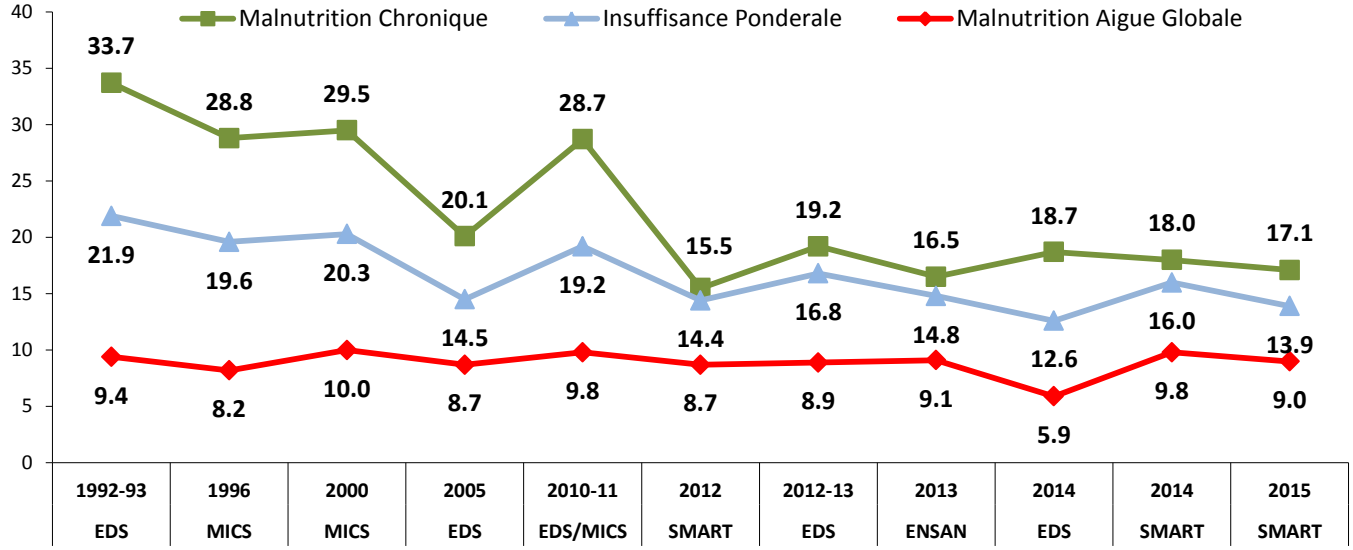


Figure 6: Trends in malnutrition prevalence in Senegal between 1992 and 2015 (WHO 2006 Growth Standards)

3.2.2 Introduction of the SMART Methodology in Senegal

SMART surveys have been conducted in Senegal since 2008. In 2008, 2009 and 2011, these surveys were conducted by the Child Food, Nutrition and Survival Division (Division de l'Alimentation, de la Nutrition et de la Survie de l'Enfant - DANSE) of the Ministry of Health and Social Action (Ministère de la Santé et de l'Action Sociale). In 2012, the SMART survey was conducted by a unit to fight malnutrition (Cellule de Lutte contre la Malnutrition – CLM). Table 5 below summarizes the main features of the surveys conducted in 2008, 2009, 2011 and 2012.

Table 5: Main features of the SMART surveys conducted in Senegal between 2008 and 2012

	SMART surveys Aug-Sept 2008	***SMART surveys August 2009***	***SMART surveys Nov-Dec 2011***	***SMART surveys May-June 2012***
Type of survey, target population and representation	**Nutrition and mortality survey** → 7 Departments **Matam, Gossas, Sédhiou, Louga, Kébémer, Bakel and Rufisque** → Representative at the district level (13 districts)	**Nutrition and mortality survey** → 5 Regions **Kédougou, Kolda, Matam, Sédhiou and Tambacounda** → Representative at the regional level	**Nutrition survey** (women and children) → 8 Regions **Diourbel, Matam, Thiès, Louga, Saint Louis, Kolda, Kédougou and Tambacounda** → Representative at the regional level	**National Nutrition Survey** → 45 departments → Representative at the department level
Implementation and funding	**Government:** DANSE, IPDSR, ANSD, CLM/PRN **Partners:** UNICEF, HKI **Funding:** UNICEF, WFP, WHO	**Government:** DANSE, IPDSR, ANSD, CLM/PRN, UCAD **Partners:** UNICEF, WFP, FAO, WHO, HKI **Funding:** UNICEF, USAID / OFDA	**Government:** DANSE, ANSD, CLM/PRN, UCAD **Partners:** UNICEF, HKI **Funding:** UNICEF, WFP, FAO, HKI, MI	**Government:** CLM/PRN **Partners:** UNICEF, HKI **Funding:** UNICEF, WFP, WHO
Rationale	→ Vulnerable departments with food security or nutrition problems, each distributed in one of the seven agro-ecological areas of the country	→ Joint USAID/OFDA, UNICEF, WFP and FAO project to strengthen the EWS in Senegal by incorporating a nutrition component	→ Project to strengthen the EWS in Senegal by incorporating a nutrition component	→ Establish a more specific nutritional profile of Senegal to better target response areas

Improving the nutritional status of children and women of reproductive age is one of the objectives that Senegal established in its 2011-2015 Economic and Social Policy, its 2009-2018 National Health Development Plan and, like the international community, within the framework of its MDGs. Hence, to monitor progress in the achievement of this objective, the Ministry of Health and its parnters also agreed that the nutrition surveillance system would have to be strengthened by conducting regular national nutrition surveys.

By virtue of its position in the region, several SMART Methodology training sessions have been organized in Senegal. In 2012, during the food and nutrition crisis that affected the countries of the Sahel, two training sessions were organized a few months apart, in collaboration with ACF-Canada. The first session was in June and was intended for government and UNICEF employees involved in conducting SMART surveys in the Sahel. The second was in September and was for humanitarian workers involved in conducting nutrition surveys in the Sahel. Two other training sessions were organized at the regional level in 2013 and 2015. Some government stakeholders from Senegal Ministry of Health, DANSE and CLM attended the training were "refreshed" in these regional workshops. On the partners' side, UNICEF, ALIMA, ICRC, WorldVision and WFP representatives were also trained in the regional workshops.

3.2.3 SMART nutrition surveys conducted between 2013 and 2015

The process for conducting SMART surveys in Senegal is relatively quick and takes approximately six months (Figure 7). The planning phase lasts approximately a month and a half. Training of survey staff, data collection, the analysis and final reporting phase of the survey take about four and a half months.

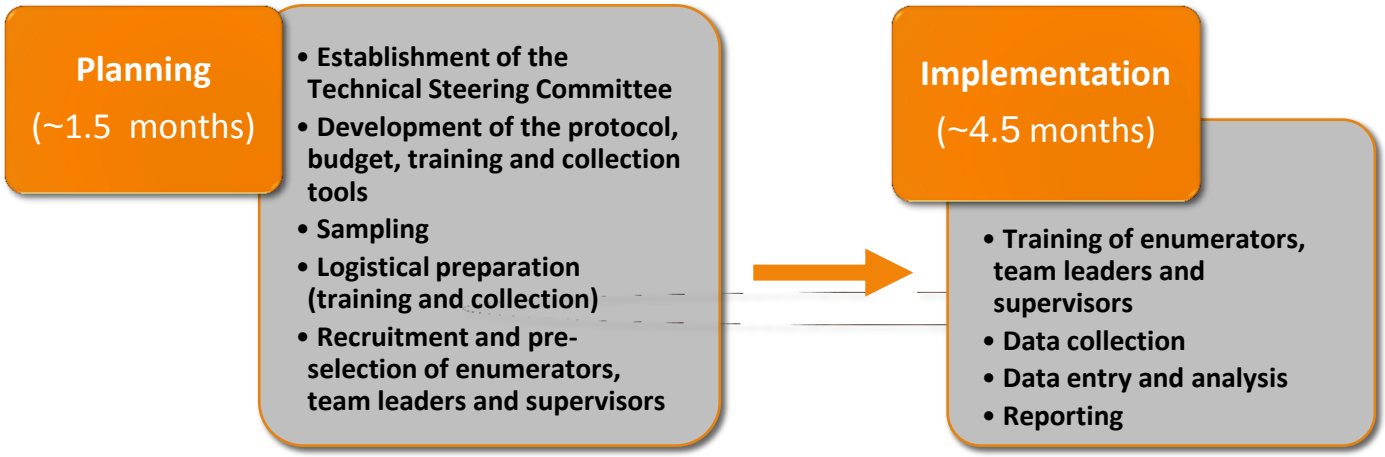


Figure 7: Summary of the different activities conducted to implement a SMART NNS in Senegal

The 2014 and 2015 SMART NNS were carried out by the Direction de la Santé de la Reproduction et de la Survie de l'Enfant (Reproductive Health and Child Survival Office (DSRSE)) through the Division de l'Alimentation et de la Nutrition (DAN, formerly DANSE). For the SMART NNS, a Technical Steering Committee was set up to coordinate all stages of the planning phase and to coordinate survey implementation. The Technical Steering Committee is comprised of representatives from the following institutions:

- ✓ Division de l'Alimentation, de la Nutrition (DAN)
- ✓ Agence Nationale de la Statistique et de la Démographie [National Statistics and Demography Agency] (ANSD)
- ✓ CLM/PRN, other divisions of the DSRSE, IPDSR, UCAD
- ✓ UNICEF Senegal and UNICEF WCARO
- ✓ USAID, FAO, WHO, WFP
- ✓ NGOs: HKI, MI, CRF, ACF, Plan, Save The Children

In 2008, 2009, 2011 and 2015, SMART survey specialist consultants were recruited by the UNICEF Senegal office to support the Technical Steering Committee. The UNICEF WCARO regional office also provided technical support for these various surveys during the planning, training, analysis and final reporting phases.

Table 6 below summarizes the different activities that were carried out during SMART NNS implementation in Senegal in 2014 and 2015, as well as the roles and responsibilities of each of the stakeholders in the planning, training, data collection, analysis and reporting processes, and in the dissemination of results.

Table 6: Summary of the different activities in the implementation of SMART NNS between 2014 and 2015, and roles and responsibilities of the government and nutrition partners

Steps	*Activities*	*Person(s) responsible*
Planning	✓ Development and validation of the survey protocol and budget, and preparation of training and collection tools ✓ Sampling (selection of clusters to be enumerated and printing of EA maps) (ANSD) ✓ Logistical preparation for training, data collection and data entry/analysis ✓ Identification of enumerators and supervisors	✓ Technical Steering Committee ✓ International SMART survey consultant (UNICEF) (2015) ✓ National consultant (2015)
	✓ Ethics approval	✓ Ministry of Health Ethics Committee
Training	✓ Orientation of Technical Steering Committee members and supervisors on the SMART Methodology, survey methodology, ENA software and entry on smartphones (1 half-day) (2015)	✓ SMART Survey Consultant (UNICEF) (trainers) ✓ Technical Steering Committee (participants) ✓ 10 regional Nutrition Officers (NO) (participants)
	✓ Training of enumerators, team leaders and supervisors (6 days) ✓ Standardization test ✓ Pre-survey day ✓ Selection based on the results of a written test, the standardization test and the pre-survey ✓ Specific training for team leaders and supervisors (ENA software and/or Smartphones) (1 day)	✓ SMART Survey Consultant (UNICEF) (main trainer) ✓ Technical Steering Committee, UNICEF WCARO (facilitators) ✓ NO (participants) ✓ Potential enumerators selected from the pool of DAN enumeration officers
Data Collection	<u>Data collection:</u> ✓ Enumeration of households in the selected EA and selection of households to be enumerated (systematic random) (week before collection) ✓ Data collection according to 5 axes and input in ENA (2014) ✓ Collection by scanning with all teams together and using a Smartphone and ODK (2015)	✓ Enumerators ✓ 1 team leader and 2 measurers per team
	<u>Field supervision:</u> ✓ Supervision of survey teams ✓ Supervision visits	<u>Axis coordinators (2014)/Local Supervisors (2015)</u> ✓ TNA ✓ International SMART survey consultant (UNICEF) (2015) ✓ National consultant (2015) <u>Central supervisors</u> ✓ Technical Steering Committee

Steps	*Activities*	*Person(s) responsible*
	Awareness-raising and Communication ✓ Awareness-raising/communication around the survey to administrative and health authorities and the population (letters) ✓ Facilitation of the introduction of teams in the regions, logistics and public outreach (SRANSE)	✓ Information cascaded down from DSRSE → Regional Chief Physician → Regional food, nutrition and child survival supervisors (SRANSE)
Data Entry & Analysis	✓ Data entry (dual entry in 2014) ✓ Use of ENA, EPI Info and SPSS software	✓ TNA (2014) ✓ SMART Survey Consultant (UNICEF) (2015)
Writing of the Final Report and Dissemination of Results	✓ Preliminary/summary report ✓ Presentation of the preliminary report to the Technical Steering Committee ✓ Workshop to share/discuss preliminary results ✓ Presentation of the draft final report to the Technical Steering Committee ✓ Workshop to share and validate all results ✓ Distribution of the final report to all partners via DAN	✓ SMART Survey Consultant (UNICEF) ✓ National consultant ✓ Technical Steering Committee ✓ DAN ✓ Technical and financial partners

Overview of the SMART surveys from 2013 to 2015

In June 2013, a national Baseline Nutrition and Food Security Survey (BNFSS) was carried out by the *Secrétariat Exécutif du Comité National à la Sécurité Alimentaire* (Executive Secretariat of the National Food Security Committee) through the EWS Technical Committee, with technical and financial support from WFP, UNICEF, WHO, CLM, FAO, NGOs and the Government of Senegal, which provided vehicles. This survey containing a food security and a nutrition component used the SMART Methodology for the nutrition component. The survey had national coverage and was representative for the 45 departments in the country. The BNFSS was then used by the WFP within the framework of the Comprehensive Food Security and Vulnerability Analysis (2014 CFSVA).

In June-July 2014, the DSRSE, through DANSE, conducted a SMART national nutrition survey with the support of its technical and financial partners. This survey was conducted to monitor nutrition trends in the Senegal's different regions and to assess the impact of interventions already carried out in the different regions of the country. This survey was representative for each of the 14 regions in Senegal, with the exception of the Saint-Louis region, where each of the three departments represented one stratum. In fact, since the 2012 NNS conducted by the CLM, the Department of Podor in the Saint-Louis region has had a high prevalence of acute malnutrition. Therefore, the survey is planned to be representative of the departments of this region to ensure better monitoring of the nutrition situation and to evaluate the impact of interventions carried out in the Department of Podor.

The various assessments and surveys in Senegal over the last few years have reported a precarious nutrition situation and a decline in the nutritional status of children. The results of the 2013 BNFSS and 2014 NNS surveys confirmed the persistence and disparity of the nutrition crisis between Senegal's regions. This situation motivated the development of a malnutrition and food insecurity response plan.[10] Therefore, a SMART national nutrition survey was conducted in the country's 14 regions and in the 3 departments of the Saint-Louis region, in October/November 2015 to evaluate the overall response to the plan and ensure the nutrition situation was being monitored regularly within the surveillance system, and the food crisis situation in some countries in the Sahel. Data collection took place later than in previous years because of Ramadan, and because a longer planning phase was required owing to the use of Smartphones for collection.

[10] Strategic Response Plan for Senegal 2014-2016: http://www.unocha.org/cap/appeals/plan-de-r%C3%A9ponse-strat%C3%A9gique-pour-le-s%C3%A9n%C3%A9gal-2014-2016

Table 7 below summarizes the survey period, representation, indicators and cost, and the different financial partners of the BNFSS and SMART NNS conducted in Senegal in 2013, 2014 and 2015.

Table 7: Survey period, representation, indicators, cost and funding of SMART surveys conducted in Senegal between 2013 and 2015

	SMART BNFSS June 2013	***SMART NNS June/July 2014***	***SMART NNS October/November 2015***
Survey period	Start of lean season	Start of lean season	End of lean season
Representation	National and small-scale → 45 departments of Senegal	National, regional and small-scale →14 regions → 3 departments of the Saint-Louis region	National, regional and small-scale →14 regions → 3 departments of the Saint-Louis region
Indicators			
Acute Malnutrition	X	X	X
Chronic Malnutrition	X	X	X
Underweight	X	X	X
Vitamin A Supplementation			X
Morbidity (diarrhea and acute kidney failure)		X	X
Treatment of diarrhea with ORS/Zinc		X	X
Nutritional status of women (MUAC and BMI)		X	X
Food Security and Livelihood	X		
Retrospective mortality			X
Funding*	CIDA, Bill and Melinda Gates Foundation	ECH, UNICEF, WHO, FAO, WFP, ACF, IFRC	UNICEF: USD $200,000 Other partners: USD $75,000 (WHO, WFP, ACF, IFRC, Save the Children and Intrahealth)
Total Cost (USD)*	**-**	**-**	**USD $275,000**

X: Indicator included; Source: UNICEF Senegal

Budget and funding

The 2014 and 2015 SMART NNS were carried out by the DSRSE and DAN, and funded mainly by UNICEF and other partners (FAO, WFP, WHO, ECHO, etc.). The NGOs also contributed logistical and/or financial support. Hence, based on the 2015 SMART NNS, the average cost per stratum would be around USD $19,600.

UNICEF financed the purchase of the anthropometric equipment used for the 2014 survey (Seca scales and Shorr height boards - UNICEF Inputs Division). Some of this anthropometric equipment was reused for the 2015 NNS. UNICEF Mali supplied UNICEF Senegal with some of the missing equipment for the 2015 NNS.

3.2.4 Nutrition information systems in Senegal and the SMART Methodology

Senegal has the following nutrition information systems:

Early Warning System (EWS) and Harmonized Framework (*Cadre Harmonisé*)

The EWS is hosted by SECNSA, which reports directly to the Prime Minister's Office. The results of the BNFSS survey managed by SECNSA via the EWS team in June 2013, coupled with the CFSVA, helped the members of SECNSA and its partners to develop a national resilience plan for Senegal to provide relief to vulnerable populations. The results of the BNFSS, CFSVA and SMART NNS surveys are used to analyze the Harmonized Framework.

NHIS
A National Health Information System was established in Senegal, which primarily provides routine data on acute malnutrition treatment programs. However, the system had been malfunctioning in recent years, thus prompting each sector (nutrition, health, vaccination, etc.) to set up its own information system. The SMART NNS data are not currently triangulated with the NHIS.

Sentinel sites
DAN is currently in the process of piloting five sentinel sites in five health districts. Arm circumference and height and weight measurements are taken at these sites to calculate the Height/Weight ratio. These pilot sentinel sites should thereafter be expanded to several other districts, especially in the regions with the highest GAM and SAM prevalence rates.

3.2.5 Dissemination and use of SMART survey results

The DAN is responsible for distributing the final survey report to all partners. The results of SMART surveys are generally presented during restitution and validation workshops that bring together all members of the Technical Steering Committee as well as the country's nutrition partners.

The results of the SMART NNS are used for advocacy, in acute malnutrition support program planning and to assess the general impact of nutrition interventions and different action plans.

SMART NNS have been carried out regularly in Senegal for a few years now to offset the lack of information systems and thereby adequately monitor the country's nutrition situation. The 2015 NNS report recommends that SMART NNS be conducted every two years and that SMART regional surveys be conducted annually only in those regions most affected by acute malnutrition (Saint Louis, Tambacounda, Matam, Louga and Diourbel). This survey plan should be maintained until the transition to the DAN sentinel sites scale.

3.3 Summary of countries in Category 1

The table below presents the lessons learned for the countries in Category 1. These are lessons learned from the analysis of the secondary information collected, and are based on discussions with the various contributors to this report. The purpose of this table is to highlight the challenges that these countries face, but also to highlight the opportunities and benefits that emerged from these surveys, particularly vis-à-vis nutrition, coordination between governments and partners, and management of nutrition information.

Activities	*Lessons learned*
Mechanisms of coordination between government and partners in the implementation of SMART surveys	**Strengths** ▪ SMART NNS coordinated by the government (Ministry of Health and/or Institute of Statistics); ▪ Memorandum of understanding between the government – responsible for conducting surveys – and its partners for the implementation of SMART surveys (Mali); ▪ Establishment of a technical committee or steering committee to coordinate key steps of SMART NNS; ▪ Involvement of key government stakeholders in the implementation process of SMART NNS (Institute of Statistics, Ministry of Health, regional health structures, other health structures, etc.); ▪ Empowerment of governments in the implementation process of SMART surveys with increasingly less support from technical partners; ▪ Constant interest from development partners in SMART surveys, considering the results (including malnutrition prevalence) as benchmark nutrition data; ▪ Support from UNICEF (technical support, consultant recruitment, anthropometric equipment, training) and ACF-Canada (training) is decisive in the implementation of SMART surveys; ▪ The implementation of SMART surveys is widely supported by UNICEF through of lobbying governments and major technical and financial partners and/or via technical support work. **Needs improvement** ▪ The last SMART Methodology training session for survey managers in Mali was scheduled in 2009 and in Senegal in 2012. Trainings are not regularly organised at national level to continuously enhance the capacity of members responsible for the implementation of SMART NNS. ▪ No standard/harmonised toolkit for SMART NNS implementation exists. In both, Mali and Senegal the technical steering committee and/or the consultant contracted developed the survey protocol and budget, and prepared the training and data collection tools that were validated at national level. ▪ Need to continue external technical support (e.g. from UNICEF and/or ACF-Canada) to support use of data from SMART surveys in the nutrition information system.

Activities	*Lessons learned*
Frequency and implementation period of SMART surveys	**Strengths** ▪ SMART NNS are implemented annually, allowing comparisons to be made between the different surveys and to regularly and closely monitor changes in the nutritional status of children under the age of 5; ▪ Consideration of the seasonality of malnutrition. **Needs improvement** ▪ The frequency of implementation of SMART NNS in Senegal could be modified to change from annually to every two years. The idea would be to conduct only SMART regional surveys in the regions most affected by acute malnutrition in the years without a planned national survey.
Representation of SMART surveys	**Strengths** ▪ Conducting a SMART NNS does not prevent the planning of a survey with a lower level of representation at the first administrative level for programming reasons or in response to a crisis (Mali, Senegal); **Needs improvement** ▪ The choice to conduct representative SMART NNS at administrative levels below the first level (regions) significantly increases the budget of these surveys due to an increase in the number of team members and other persons that would have to be involved during training and data collection. The quality of enumerator training and supervision may also be affected, although this has not been assessed in this review.
SMART survey financial partners and budget	**Strengths** ▪ Continued interest of development partners in SMART surveys, considering the results (in particular malnutrition prevalence) as benchmark nutrition data; ▪ Use of quality anthropometric equipment supplied by UNICEF. **Needs improvement** ▪ The average cost of a SMART NNS remains relatively high in Mali and Senegal. The average cost per stratum should be between USD $10,000 (Mauritania, Nigeria[11]) and USD $15,000 (Tanzania[12]) to guarantee the sustainability of the activity and to more easily mobilize resources; ▪ Increasingly difficult to raise funds for the implementation of SMART surveys (Mali, Senegal, Cameroon, DRC); ▪ Lack of security in some areas also contributes to increasing the survey budget in these areas (Mali, South Sudan).

[11] Source: UNICEF WCARO
[12] National Nutrition Surveys using SMART Methodology. Case Study: Tanzania (April 2006). The SMART Team at Action Against Hunger Canada; UNICEF

Activities	*Lessons learned*
Integration of SMART survey results in nutrition information systems	**Strengths** ▪ Triangulation of data from SMART NNS with food security data and routine data (Harmonized Framework); ▪ The quality of the data collected through the SMART NNS conducted correctly contributed to the development of the nutrition component in the different nutrition information and/or early warning systems. **Needs improvement** ▪ Need to strengthen nutrition information systems for better triangulation between routine, screening and nutritional assessment data.
Use of SMART survey results	**Strengths** ▪ The results of the SMART NNA are used to supplement the results of the DHS, MICS and other national nutrition surveys in the monitoring of malnutrition trends and routine surveillance, and for monitoring the progress indicators of global initiatives such as the SUN movement, MDGs/SDGs, Nutrition - Global targets 2025 (WHA), or the various action plans and strategies; ▪ The results of SMART surveys serve as a benchmark to calculate the expected number of acutely malnourished children to be supported; ▪ The results of SMART surveys are used to assess the impact of nutrition programs, redirect nutrition strategies and action plans and to identify priority areas for the implementation of nutrition interventions; ▪ The NNS that collect data on women of childbearing age highlighted the nutritional transition currently underway in developing nations and are characterized by still worrisome undernourishment associated with increased prevalence of overweight and obesity (Mali and Senegal); ▪ Use of results as an advocacy tool to raise funds for nutrition; ▪ In crisis, SMART survey results can strengthen/redirect that response to needs and evaluate the impact of nutrition programs, or declare an emergency.

4. Countries in Category 2

4.1 Cameroon

4.1.1 Background and nutrition situation

Background

Cameroon is located in Central-West Africa, nicknamed "Africa in miniature" because of its climatological, geographic, human and cultural diversity. Cameroon is ranked 153rd out of 188 on the UNDP HDI for 2015, and 10% of its population lives on less than USD $1.25 a day.

The North and Far North regions (Sudan-Sahel area), Adamaoua and East are more affected by nutritional problems than the rest of the country. In the North and Far North regions, the communities suffer from repeated natural disasters (drought, flooding) and the resulting poor harvests, thereby slowly depleting their ability to resist this continuous cycle of shock and constraint. In 2015, food insecurity reached alarming levels in the Sudan-Sahel area, especially along the border with Nigeria, where Boko Haram insurgents operate. Following acts of terrorism on both sides of the Nigeria-Cameroon border, the Far North has also had an influx of refugees from Nigeria since May 2013 (approximately 65,000 refugees) and since 2014 there has been major internal migration of the population (roughly 160,000 internally displaced persons in November 2015). The Adamaoua region is dependent on the vagaries of the weather and is sensitive to seasonal changes, especially during the lean season. The East section of Adamaoua and the East region are dealing with a significant influx of refugees from the Central African Republic (CAR), primarily due to ethnic conflicts.

Cameroon is divided administratively into 10 regions. Each region is sub-divided into departments. There are 58 departments in Cameroon. Each department contains several *arrondissements* (boroughs). There are 360 *arrondissements* in the entire country.

Nutrition situation

The preliminary results of the 2014 MICS survey presented in Figure 8 below indicate a national GAM prevalence of 5.2%, and 1.3% SAM. Cameroon is near the "acceptable" level of GAM prevalence. The national chronic malnutrition prevalence is 31.7%, placing the country in a "serious" situation. More than one third of children with stunting have severe stunting. The underweight prevalence was 14.8%

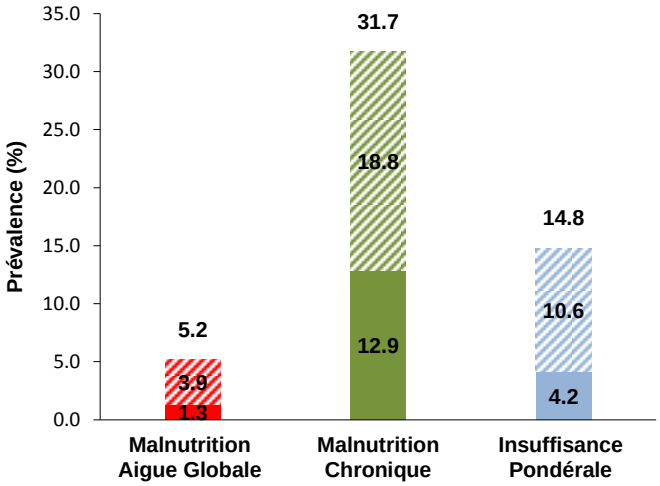


Figure 8: Nutritional status of children under the age of 5 in Cameroon (2014 MICS survey, WHO 2006 Growth Standards)

The malnutrition prevalence trends in Cameroon between 1991 and 2014 (Figure 9 below) indicate an acute malnutrition prevalence that, after having been below the 5% threshold in 1991 (4.5%), steadily grew to 8.5% in 1998. Since then, the GAM prevalence has been dropping slightly, and was 5.2% in 2014. The

stunting prevalence has decreased roughly just 5 points in 25 years, from 36.3% in 1991 to 31.7% in 2014. Underweight, revealing both chronic malnutrition and/or acute malnutrition, has consequently decreased only slightly by 4 points between 1991 (18.0%) and 2015 (14.8%).

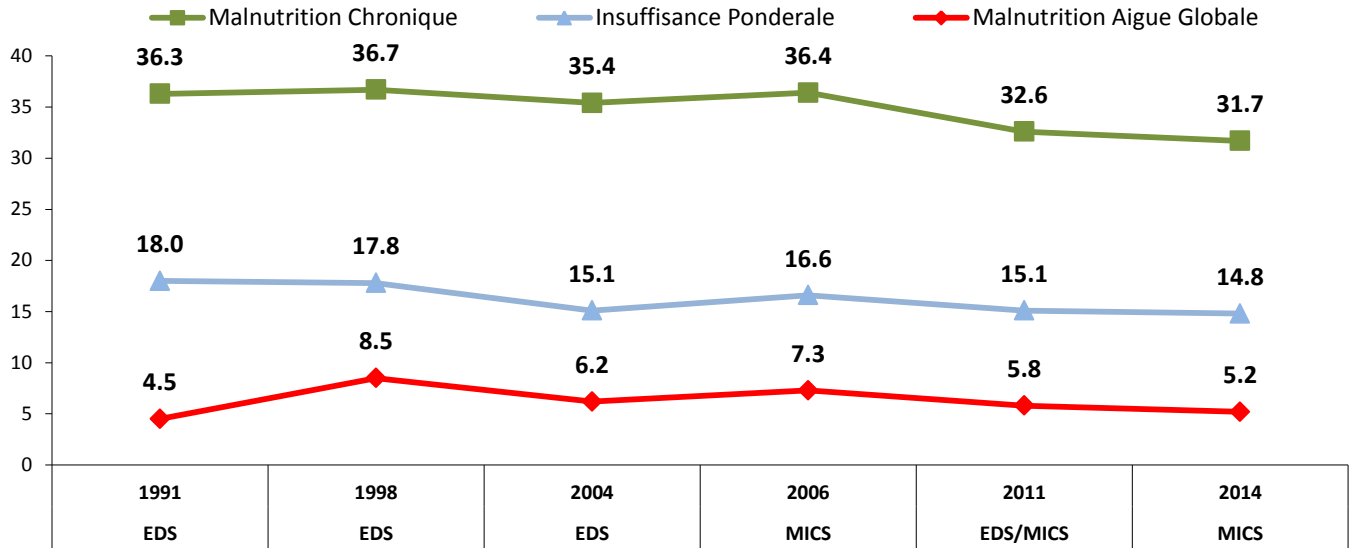


Figure 9: Trends in malnutrition prevalence in Cameroon between 1991 and 2014 (WHO 2006 Growth Standards)

4.1.2 SMART Methodology in Cameroon

The SMART Methodology has been used in Cameroon since 2007. The first SMART surveys were carried out on a small scale since they concerned only the Central African refugee population. In fact, following political turmoil in CAR leading to persecution, kidnappings, hostage-taking (adults and children), ransoms and the mutilation of different CAR populations, these same populations began migrating to the Adamaoua region in 2003 and to the East region starting in 2004. The flow of refugees increased continually between 2005 and 2008. The first regional SMART surveys of the Cameroonian population began in 2010. Table 8 below summarizes the main features of the surveys conducted between 2007 and 2012 and the rationale for conducting each of the surveys.

Table 8: Main features of SMART surveys conducted in Cameroon between 2007 and 2012, and rationale for implementation

	Small-scale SMART surveys 2007, 2008 and 2010	***Regional SMART surveys 2010 and 2011***	***Regional SMART surveys 2012***
Type of survey, target population and representation	**Nutrition and mortality survey** → Central African refugee populations → **East** and **Adamaoua** regions → Representative at the regional level	**Health and nutrition surveys** (2010) **Health, mortality and nutrition survey** (2011) → Host populations → **North and Far North** regions → Representative at the regional level	**Nutrition and mortality survey** → Host populations → **East, Adamaoua, North, Far North, South and North-West** regions → Representative at the regional level
Implementation and funding	✓ **Government and partners:** UNICEF, ACF (2007), Ministry of Health, UNICEF, UNHCR, Caritas, IRD (2008), Ministry of Health, UNICEF, UNHCR (2010)	✓ **Government and partners:** Ministry of Health, UNICEF, WFP, HKI (2010) ✓ **Funding:** ECHO	✓ **Government and partners:** Ministry of Health, UNICEF, WFP, HKI (2010) ✓ **Funding:** ECHO

	Small-scale SMART surveys 2007, 2008 and 2010	*Regional SMART surveys 2010 and 2011*	*Regional SMART surveys 2012*
Rationale	**2007**: Following exploratory missions to assess the health, food and nutrition situation of these populations. The analysis of the nutritional assessments of these missions demonstrated several shortcomings and inconsistencies that made it impossible to conclude with certainty on the nutrition situation, which might have seemed concerning or even critical. **2008 and 2010**: Monitoring of the nutrition situation and assessment of the impact of interventions carried out in these two regions	**2010**: Within the framework of nutrition surveillance following a joint MINADER, FAO and WFP mission showing a significant drop in cereal production. These data were necessary to monitor and evaluate food, nutrition and health programs implemented in this area. **2011:** Evaluate and assess the effects of food and nutrition assistance among recipient populations, six months after the start of the assistance, to better define response strategies.	**2012:** Food and nutrition crisis in the Sahel countries, including the North and Far North. These six regions also had the highest GAM prevalence rates according to the 2011 DHS/MICS (or chronic malnutrition for the Northwest region). → Provide baseline data in order to monitor malnutrition trends and evaluate IYCF practices to better define and target interventions.

4.1.3 SMART nutrition surveys conducted between 2013 and 2015

The process of conducting regional SMART surveys in Cameroon takes about four months (Figure 10). The planning phase lasts about one month, and the implementation phase (training of enumerators and supervisors, data collection, analysis and final reporting) takes about three months.

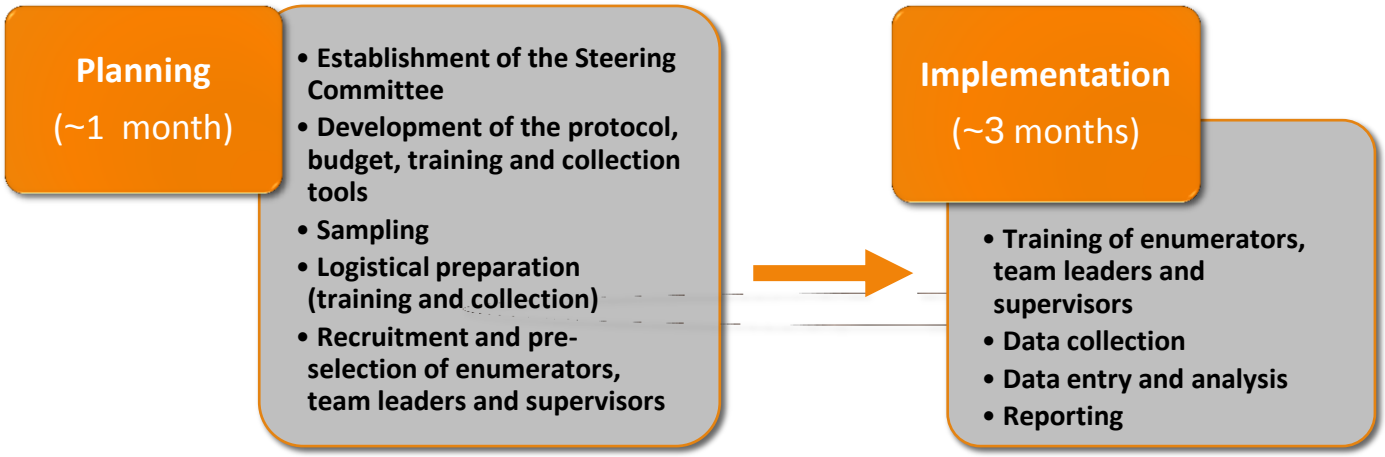


Figure 10: Summary of the different activities conducted to implement a SMART NNS in Cameroon

Regional SMART surveys were conducted each year between 2013 and 2015 by the Food and Nutrition Sub-department (Sous-Direction de l'Alimentation et de la Nutrition - SDAN), which is part of the Health Promotion Department (Direction de la Promotion de la Santé - DPS) at the Cameroonian Ministry of Health.

SDAN is responsible for coordinating the survey with UNICEF, which provides technical support for survey implementation by recruiting a SMART Survey Consultant. The nutritionist at the UNICEF Cameroon/Bertoua office (East and Adamaoua Regions) also coordinates all phases of the surveys in close collaboration with the SMART Survey Consultant and SDAN. The nutritionist at the UNICEF Cameroon/Maroua office (North and Far North Regions) also supports the coordination team during the training and collection phases.

To conduct the SMART surveys, a Steering Committee was established to help the survey coordination team with the general directions of the project and with strategic decision-making. The Steering Committee is comprised of representatives from the following institutions:

- ✓ Sous-Direction de l'Alimentation et de la Nutrition (SDAN)
- ✓ Bureau Central des Recensements et des Etudes sur la Population (BUCREP) [Central Bureau of Census and Population Studies]
- ✓ Institut National de la Statistique (INS) [National Statistics Institute]
- ✓ Ministère de l'Agriculture et du Développement Rural (MINADER) [Ministry of Agriculture and Rural Development]
- ✓ UNICEF Cameroon
- ✓ ECHO, OCHA, WFP, OWHOMS, UNHCR (2013), FAO
- ✓ IFRC, ACF, MSF, Organisation des Femmes pour la Santé, la Sécurité Alimentaire et le Développement (OFSAD) [Organization of Women for Health, Food Security and Development]

Table 9 below summarizes the different activities that were carried out during regional SMART survey implementation in Cameroon in 2013, 2014 and 2015, as well as the roles and responsibilities of each of the stakeholders in the planning, training, data collection, analysis and reporting processes, and in the dissemination of results.

Table 9: Summary of the different activities in the implementation of SMART NNS in 2013, 2014 and 2015, and roles and responsibilities of the government and nutrition partners

Steps	*Activities*	*Person(s) responsible*
Planning	✓ Development of the survey protocol, budget and training and collection tools ✓ Sampling (selection of clusters to be enumerated and printing of EA maps) (BUCREP) ✓ Preparation of logistics for training, data collection and entry/analysis of the data collected ✓ Identification of enumerators and supervisors ✓ Responsible for anthropometric equipment (scales and height boards) (UNICEF since 2013)	✓ Steering Committee ✓ 2 UNICEF coordinators: UNICEF Cameroon/Bertoua nutritionist and SMART Survey Consultant
Training	✓ Pre-training of supervisors (3 days)	✓ 3 UNICEF coordinators: UNICEF Cameroon (Bertoua/Maroua) Nutritionist and SMART Survey Consultant (trainers) ✓ SDAN ✓ Supervisors proposed by the different partners of the Steering Committee: nutrition focal points in the regions (regional health offices), SDAN, NGOs, WFP
	✓ Training of enumerators and team leaders (6 days) ✓ Standardization test ✓ ENA software training ✓ Pre-survey day ✓ Selection of enumerators based on the results of the pre- and post-tests and the standardization test ✓ Selection of team leaders based on a test on the use of computer equipment and the ENA software	✓ 3 UNICEF coordinators: UNICEF Cameroon (Bertoua/Maroua) Nutritionist and SMART Survey Consultant (trainers) ✓ SDAN (trainers) ✓ UNICEF (occasionally), BUCREP (Sampling) ✓ Supervisors (facilitators and trainers) ✓ Participants selected by SDAN and UNICEF from the pool of enumeration officers trained on SMART surveys

Steps	*Activities*	*Person(s) responsible*
Data Collection	Data collection: ✓ 1 day per cluster: - Estimation of the number of households and selection of households to be enumerated (systematic random) - Data collection and entry in ENA	✓ Enumerators and Supervisors ✓ 1 team leader and 2 measurers per team
	Field supervision: ✓ Supervision of survey teams ✓ Supervision visits	✓ 2 UNICEF coordinators: UNICEF Nutrition Information Specialist and SMART Survey Consultant ✓ UNICEF Maroua Nutrition ✓ Supervisors ✓ Supervision visits (UNICEF, WFP, UNHCR, IFRC)
	Awareness-raising and Communication ✓ Awareness-raising/communication about the survey to administrative and health authorities and the population (letters) ✓ Facilitation of team introductions in the regions/provinces (DRSP)	✓ Information cascaded down from SDAN ✓ DRSP via SDAN nutrition focal points
Data Entry & Analysis	✓ Data entry (dual entry) ✓ Use of ENA, EPI Data, CSPro and SPSS software	✓ Data entry officers from BUCREP ✓ SMART Survey Consultant and BUCREP (Supervision)
Final Reporting	✓ Writing of preliminary report ✓ Writing of the final report	✓ SMART Survey Consultant ✓ UNICEF ✓ SDAN (validation)
Dissemination of Results	✓ Presentation of preliminary results to the Steering Committee ✓ Dissemination of the results to all nutrition partners via the Nutrition Working Group ✓ Presentation of the results in the Regional Nutrition Working Groups through the regional health offices, with support from UNICEF ✓ Dissemination of an electronic version of the report to all report partners	✓ Steering Committee ✓ UNICEF ✓ Nutrition Working Group ✓ Regional Nutrition Working Groups ✓ Regional Health Offices

Overview of SMART surveys from 2013 to 2015

As the 2012 SMART surveys found no major nutrition problems in the South and North-West regions, it was considered unnecessary to repeat the surveys in these two regions the following years. Therefore, in 2013, 2014 and 2015, SMART regional surveys were conducted in four regions only: the Far North, the North, Adamaoua and the East. These surveys were managed by SDAN and UNICEF, in collaboration with the others partners of the Steering Committee. In 2013, a fifth stratum was created composed of the refugee population of the East and Adamaoua regions. In 2014 and 2015, areas in the Far North near the border with Nigeria were excluded from the survey due to security issues, as well as a few *arrondissements* in the East region due to the significant presence of Central African refugees.

In 2014, UNICEF conducted two multisector surveys using SMART Methodology at the Gado and Timangolo refugee camps, in close collaboration with the East regional health office and regional partners. These surveys were funded by the CDC.

Table 10 below summarizes the survey period, representation, indicators and cost, as well as the different financial partners of the SMART surveys conducted in Cameroon in 2013 to 2015.

Table 10: Survey period, representation, indicators, cost and funding of SMART surveys conducted in Cameroon between 2013 and 2015

	SMART survey July-Aug. 2013	***SMART Multisector Survey June 2014***	***SMART Multisector Survey Aug.-Sept. 2014***	***SMART survey Sept.-Oct. 2014***	***SMART Survey October 2015***
Survey period	Lean season	Lean season	Lean season	Post-lean season (harvest)	Post-lean season (harvest)
Representation	Regional and small-scale Cameroonian population → 4 regions (Far North, North, Adamaoua, East) Central African refugee population → 2 regions together (Adamaoua, East) → Nandoungué Site	Small-scale Central African refugee population → Gado Camp	Small-scale Central African refugee population → Timangolo Camp	Regional Cameroonian population → 4 regions (Far North, North, Adamaoua, East) → Exclusion of Far North border area → Exclusion of 9 arrondissements in the East region (refugee population)	Regional Cameroonian population → 4 regions (Far North, North, Adamaoua, East) → Exclusion of Far North border area → Exclusion of 9 *arrondissements* in the East region (refugee population)*
Indicators					
Acute Malnutrition	X	X	X	X	X
Chronic Malnutrition	X	X		X	X
Underweight	X			X	X
Morbidity (diarrhea and acute kidney failure)		X	X		
Caccination (measles, polio)		X	X		
Vitamin A Supplementation and/or Deworming		X	X		
Water, Hygiene and Sanitation		X	X		
Food aid, nutrition/health programs		X	X		
Non-food items (mosquito nets, etc.)		X	X		
Nutritional status of women (AC)	X			X	X
Food diversity and food profiles of women					X
Retrospective mortality	X	X	X	X	X
Funding**	ECHO, Japanese Fund	CDC	CDC	ECHO	ECHO
Total Cost (US$)**	**~USD$ 70,000-80,000**	**~ USD$15,000**	**~ USD$15,000**	**~USD$ 70,000-80,000**	**~USD$ 70,000-80,000**

X: Indicator included;

***** A SMART survey was conducted independently by UNICEF and different partners in the East region among the host population in August 2015 in these 9 *arrondissements* → the results were incorporated into the final survey report of October 2015.

** Source: UNICEF Cameroon

Budget and funding

The regional SMART surveys of 2013 to 2015 were conducted by SDAN and UNICEF, and were made possible by funding primarily from ECHO. Based on the 2015 SMART NNS, the average cost per stratum is

around USD $19,000, in addition to the cost of recruiting a SMART consultant (about USD $30,000-$40,000).

UNICEF financed purchasing of the anthropometric equipment used for these surveys (Seca scales and Shorr height boards - UNICEF Inputs Division). Since 2013, the equipment has been stored by UNICEF. UNICEF also supplied the anthropometric equipment to the INS to conduct the 2014 MICS.

Training
SDAN has a pool of enumerators in each of the regions enumerated. The regional health offices draw up a list of participants in collaboration with SDAN. Final selection of participants for enumerator training is made by SDAN in collaboration with UNICEF (Consultant). The enumerators selected for survey training for the most part have already participated in a SMART survey in the past.

Supervisor pre-training is organized before enumerators are trained. Supervisors are usually proposed by the various members of the Steering Committee. They might be the Ministry of Health's nutrition focal points, SDAN members or individuals working for NGOs in the regions enumerated. Supervisor pre-training lasts three days. During pre-training, the agenda for the enumerators' training is discussed so that supervisors are also facilitators for some of the enumerator training sessions. The survey methodology and ENA software are also covered briefly, and the data collection calendar is developed in order to best prepare the survey awareness-raising/communication phase.

Training of enumerators and team leaders is generally six days and, in addition to theory in the classroom, also includes practical sessions (standardization test, pre-survey day). Final selection of enumerators is based on the results of the pre- and post-tests and the standardization test. Team leaders are selected based on a computer and ENA software test. Training is given jointly by SDAN, UNICEF, the supervisors and some members of the Steering Committee.

In 2012, during the food and nutrition crisis that hit the Sahel countries, SMART Methodology training for government and UNICEF employees involved in conducting SMART surveys in the Sahel was organized by UNICEF and ACF, thereby allowing the participation of two members of DPS/SDAN and one person from UNICEF (UNICEF Bertoua Nutritionist). In August 2015, two people from UNHCR Cameroon participated in regional training on the SMART Methodology and SENS, in particular to implement SENS surveys at refugee camps.

4.1.4 Nutritional information systems in Cameroon and SMART Methodology

SMART regional surveys or surveys of the refugee population have been carried out regularly every year in Cameroon since 2010 as part of the country's nutrition surveillance program. The objective of these surveys is to obtain data on the monitoring of nutrition trends. This helps to give a better overview of the seasonality of malnutrition and to better define and target interventions.

In Cameroon, nutrition surveillance occurs primarily through the triangulation of the results of SMART, MICS and DHS surveys, in particular within the Nutrition Sector Group and Regional Nutrition Sector Groups. UNICEF also holds acute malnutrition screening days during which the arm circumference (MUAC) of children aged 6 to 59 months is measured. At the same time, MINADER, via the National Food Security Program (PNSA) and in collaboration with different partners (WFP, FAO), conducts various food security assessments. There is currently a high demand from technical and financial partners to implement the IPC or Harmonized Framework.

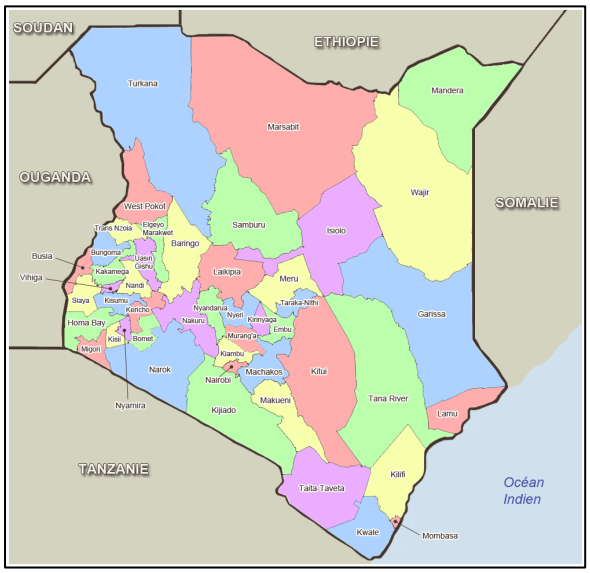
The operational capacities of the NHIS in Cameroon are still weak, and routine data from acute malnutrition support programs are currently managed primarily by the regions in another information system, where information is compiled monthly. Admissions to acute malnutrition support programs are also enumerated in the MAPE system of the WHO. This system conducts weekly checks of diseases with a high epidemic potential. The system is used especially in the Far North region. Data from the regions and from the MAPE are then triangulated. It would be a good idea to triangulate SMART survey results with this routine information and information from other surveys/assessments to be able to conduct more detailed and holistic joint analyses.

4.1.5 Dissemination and use of SMART survey results

The preliminary results of the survey are disseminated first to the Steering Committee in order to immediately identify a potential emergency. SDAN is responsible for validating and distributing the final survey report to all partners. SMART survey results are generally presented during meetings of the Nutrition Working Group (NWG) and in the regions through UNICEF and the regional NWGs. SMART NNS results are used for advocacy, in acute malnutrition support program planning and to assess the general impact of nutrition interventions and of the different action plans and humanitarian responses.

4.2 Kenya

4.2.1 Background and nutrition situation

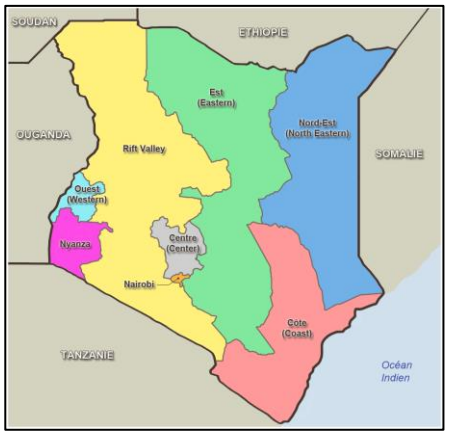


Background

Kenya is located in East Africa and shares borders with South Sudan and Ethiopia in the North, Somalia in the East, Uganda in the West and Tanzania in the Southwest. Its coastline is on the Indian Ocean to the Southeast. In 2013, it had a population of 44 million. In September 2014, Kenya was reclassified from a low-income economy to a lower-middle-income economy. Kenya ranked 145th out of 188 countries on the UNDP HDI of 2014.

Roughly 80% of Kenya's land is arid or semi-arid; consequently, it has limited agricultural potential. However, farming is still the country's main economic engine, even though the country is not self-sufficient from a food standpoint. Vast socioeconomic disparities still exist in Kenya, with 43% of the population living on less than USD $1.25 per day. This means that many households do not have access to quality food. Kenya is also currently hosting 500,000 refugees in the Dadaab and Kakuma camps. These camps are located in two of the counties most affected by food insecurity (Garissa and Turkana).

After the constitutional reform of 2010 and then legislative elections in 2013, Kenya was divided into seven provinces, with the Nairobi area not being included in any province or district. The provinces were then subdivided into districts (or *wilaya*). Now, 47 counties (see map above) have replaced the seven provinces and the Nairobi area. Allocating a larger share of resources and responsibilities to the country's counties could be one way to more effectively combat the problems of access and quality of the various services in the country.



Nutrition situation

The data from the last DHS in 2014 (presented in Figure 11 below) show a national GAM prevalence of 4.0%, including 0.9% SAM. These acute malnutrition rates mean the country's situation is "acceptable" according to the WHO. That said, there are significant disparities between the different counties, especially in arid regions where the GAM prevalence is above the emergency threshold. The prevalence of GAM in Kenya ranges from 0.2% (Siaya County) to 22.0% (Turkana County). The national chronic malnutrition rate is 26.0%. Children suffering from severe chronic malnutrition account for 31.2% of the children suffering from stunting. The underweight prevalence was 11.0%.

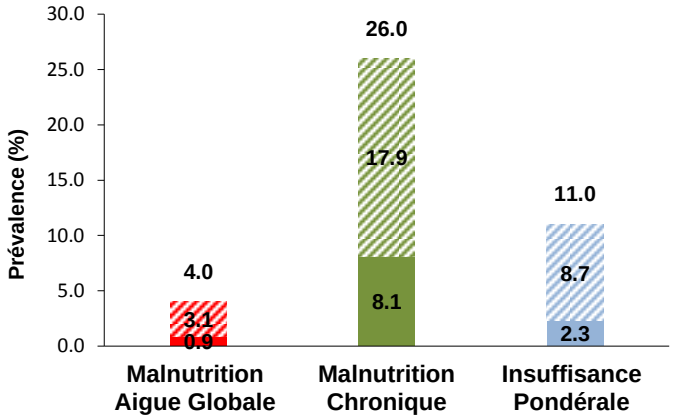


Figure 11: Nutritional status of children under the age of 5 in Kenya (2014 SMART survey, WHO 2006 Growth Standards)

As concerns the malnutrition prevalence trends (Figure 12 below), Kenya has made significant progress in recent years. Between 2008 and 2014, the GAM prevalence dropped below the 5% threshold, after having stagnated at around 7% for almost 15 years. The chronic malnutrition prevalence went from 40.2% (very high) to 26.0% in 2014. The underweight prevalence was reduced by 10% in almost 20 years, going from 20.1% in 1993 to 11.0% in 2014.

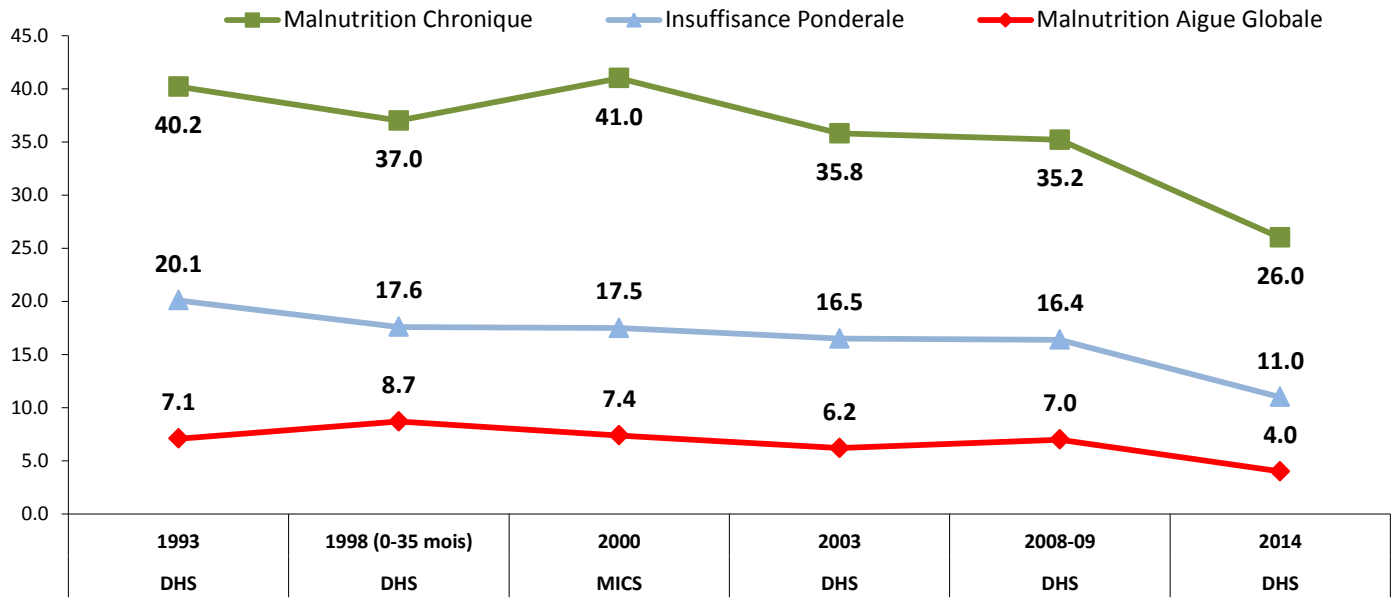


Figure 12: Trends in malnutrition prevalence in Kenya between 1993 and 2014 (WHO 2006 Growth Standards)

4.2.2 Introduction of the SMART Methodology in Kenya

The first SMART surveys as well as the first SMART Methodology training sessions took place in 2008. The training and surveys were conducted by ACF in close collaboration with the Ministry of Health.
Like Senegal, by virtue of its position in the region, several SMART Methodology training sessions were organized in Kenya. Between 2008 and 2016, six training sessions for survey supervisors, three sessions for field staff and two sessions to become SMART Methodology trainers were organized in Nairobi in collaboration with ACF-Canada. In Kenya, about 150 people were trained from the Ministry of Health, the Kenya National Bureau of Statistics (KNBS) and the University of Kenyatta, from the government, UN agencies (UNICEF, WFP, UNHCR), funders (ECHO) or local and international NGOs (IMC, IRV, SCI, ACF, FELTP, Merlin, Worldvision, Mercy Corps, MSF, Terre des Hommes, Concern Worldwide, etc.).

4.2.3 SMART survey implementation process in Kenya

In Kenya, the country's division into counties requires a two-pronged planning and implementation approach for surveys in general and for the SMART survey specifically: at the national level and at the county level.

At the national level

The primary actor is the Nutrition Information Technical Working Group (NITWG), established in 2009 and chaired by a nutrition partner for one year on a rotating basis. The NITWG is administered by the Ministry of Health's Nutrition Unit. The NITWG is a sub-group of the Nutrition Technical Forum (NTF), which is chaired by the Director of the Nutrition Unit in the Ministry of Health. The NTF is administered by UNICEF.

The role of the NITWG is to support the government in achieving one of the strategic objectives of the National Nutrition Action Plan 2012-2017: "To strengthen the nutrition surveillance, monitoring and evaluation systems" in Kenya, in the counties and nationally. Table 11 below presents the different government and partner members of the NITWG and the roles and responsibilities of the NITWG.

Table 11: Members of the NITWG (2015-2016) and roles and responsibilities

NITWG members (2015-2016)	***NITWG roles and responsibilities***
<u>Government:</u> ✓ Ministry of Health – Nutrition, Monitoring and Evaluation Unit (MoH - Nutrition M&E Unit) ✓ National Drought Management Authority (NDMA) ✓ Kenya National Bureau of Statistics (KNBS) ✓ Ministry of Agriculture ✓ Academic institutions, universities, colleges ✓ NASCOP (Nutrition Unit) ✓ Kenya Medical Research Institute (KEMRI) <u>Partners:</u> ✓ UNICEF ✓ ACF ✓ WFP ✓ Concern Worldwide ✓ Save The Children ✓ Mercy USA ✓ World Vision ✓ Islamic Relief ✓ IMC ✓ IRC ✓ FAO ✓ FEWS NET ✓ Feed the Children ✓ GAIN ✓ Micronutrient Initiative ✓ WHO ✓ OCHA ✓ Food for the Hungry ✓ Kenyan Red Cross ✓ APHRC ✓ APHIA II ✓ Independent Consultants	✓ Development of standard tools to conduct SMART surveys (protocol, standard indicators to be collected, collection tools, questionnaires, survey report); → These tools are designed to strengthen nutrition information systems and guarantee an acceptable level of quality of nutrition information; ✓ Review of nutrition data to continually harmonize the different indicators included in the different nutrition information systems (choice of indicators to be collected, collection technique for those indicators, analysis and presentation of these indicators) (1 to 2 times per year); ✓ Development of a standard national protocol for conducting nutrition surveys in Kenya; ✓ Development of a nutrition information platform that groups all survey reports and all databases[13]; ✓ Development of a plan at the start of every year with an inventory of all surveys and evaluations/studies planned for the coming year (SMART and coverage surveys, KAP, IYCF, operational research, etc.); ✓ Review and validation of all SMART survey protocols developed in the counties (choice of indicators, sampling and collection tools); ✓ Technical support during the SMART survey personnel training phase, if required; ✓ Final validation of SMART survey results via a thorough review of final databases and the final survey report.

The NITWG meets twice a month. There is a meeting the first Tuesday of every month to validate survey protocols and/or the results of these surveys. The second meeting is on the last Thursday of every month. As such, the country's nutrition situation is updated every month and quarterly during these NITWG meetings and through newsletters.

[13] Currently, SMART survey reports are available on the website of the Ministry of Health http://nutritionhealth.or.ke/reports-and-publications

The NIWG was also very involved in the DHS survey implementation process in 2014. It provided support during the fundraising phase, helped with the development of survey manuals and tools for the nutrition modules, assisted with supervisor and enumerator training in particular by organizing specific anthropometric training and running the standardization test, and offered technical support during the data collection phases through the use of the ENA software, during the analysis and reporting phase.

At the county level
Each county has a County Nutrition Technical Forum (CNTF), with the level of activity varying by county. The CNTF generally has a nutritionist (County Nutrition Officer - CNO) and, for some counties, a UNICEF Nutrition Focal Point (Nutrition Support Officer – NSO); there are currently 12 NSOs in place. The CNOs and NSOs have all been trained on the SMART Methodology.

The SMART survey protocols are developed in the counties, whether by members of government or by the nutrition partners working in the county. The CNTF is responsible for validating the survey protocol before it is presented to the NITWG. The survey protocol is only presented to the NITWG if the recommendations listed in the final report of the last survey have been implemented. Once the CNTF validates the survey protocol, a Ministry of Health representative from the county, or the NSO, presents the survey protocol to the NITWG for validation (sampling, indicators, etc.).

Training of enumerators is generally given by the CNO, in collaboration with the NSO and the different nutrition partners in the county. The NITWG may provide technical support during training if needed. Enumerators are generally students or NDMA field officers. Surveys are generally coordinated and supervised by CNOs, NSOs and by members of government working in nutrition, food security, agriculture, etc. The data are generally input by data entry operators who work in close collaboration with the teams of enumerators. They are also responsible for inputting data from the standardization test, the pilot test and for duplicate data entry. The SMART survey data are analyzed by the CNTF during a two-day workshop that brings together all nutrition partners (CNOs, NSOs, NGOs), but also partners in the Agriculture, Water, Hygiene and Sanitation, Food Security, etc. sectors. The preliminary results are therefore validated at the CNTF level. Validation of the final survey report and all results is the responsibility of the NITWG. Once the NITWG has validated the survey results, the final report is distributed in the county and across the country.

4.2.4 SMART nutrition surveys conducted between 2013 and 2015

In Kenya, the ability to conduct SMART surveys depends on livelihood zones. The various counties are divided into two categories:

- ✓ 33 counties in arid or semi-arid lands (ASAL)
- ✓ 14 non-ASAL counties

ASAL counties
SMART surveys generally take place in ASAL counties in two separate periods in order to account for the seasonality of malnutrition and the farming season:

- ✓ In February, during the short rainy season (3 counties)
- ✓ In June/July, during the long rainy season (30 counties)

In 2011 and 2012, SMART surveys were conducted biannually in these counties. Since 2013, SMART surveys have been conducted once a year, mainly because of the relative stability of GAM prevalence rates. The implementation of surveys in the ASAL counties also depends on the annual survey implementation plan. If the nutritional and/or food situation is considered to be stable, it is not always necessary to conduct a SMART survey in certain ASAL counties or districts. In total, 17 SMART surveys are currently planned for 2016.

Non-ASAL counties
Conducting SMART surveys in non-ASAL counties depends on the results of the national nutrition surveys such as the DHS or KIHBS, but also on the data from the Health Information System (HIS) such as admission rates to acute malnutrition treatment programs.

Table 12 below summarizes the total number of SMART surveys conducted each year between 2013 and 2015 in the counties, the representation and indicators, SMART surveys conducted in 2013, 2014 and 2015 in Kenya.

Table 12: Total number of SMART surveys conducted per year, representation and indicators of SMART surveys conducted in 2013, 2014 and 2015 in Kenya

	SMART Survey 2013	***SMART Survey 2014***	***SMART Survey 2015***
Number of SMART surveys conducted	30	16	9
Representation	Counties and small-scale → Counties and Districts or Livelihood Zones	Counties and small-scale → Counties and Districts	Counties and small-scale → Counties and Districts
Indicators			
Acute Malnutrition	X	X	X
Chronic Malnutrition	X	X	X
Underweight	X	X	X
IYCF Practices	X		
Zinc, deworming and vitamin A supplementation	X	X	X
MNP coverage			X
Vaccination (measles, polio)		X	X
Morbidity	X	X	X
Nutritional status of women (BMI)			
Nutritional status of pregnant and/or breastfeeding women (MUAC)	X	X	X
Folic acid, iron supplementation	X	X	X
Retrospective mortality	X		
Water and Sanitation	X	X	X
Food Security and Livelihood	X	X	X

X: Indicator included;

Funding

Funding for SMART surveys is generally provided by UNICEF and ECHO. That said, financial resources are generally raised jointly by the government and/or the different partners in the counties. As such, different donors may be involved in addition to UNICEF and ECHO.

Depending on the size and geographic issues of the counties or survey representation (small surveys within the same county by Livelihood Zone), the cost to conduct a SMART varies (Table 12).

Table 12: Estimated average cost to conduct a SMART survey, by county (Source: Ministry of Health - 2015)

Majority of SMART surveys		***Maximum cost of SMART surveys***	
Total Cost (KES)	Between 1 and 1.2 million	**Total Cost (KES)**	Between 5.5 and 6 million
Total Cost (USD$)*	Between $9,900 and $11,800	**Total Cost (USD$)**	Between $54,000 and $59,000

* The conversion rate used between the Kenyan Shilling (KES) and the U.S. Dollar (USD) was taken on April 1, 2016.

4.2.5 Nutritional information systems in Kenya and SMART Methodology

The following nutrition information systems are in place in Kenya:

Integrated Food Security Phase Classification – IPC

The IPC analysis phases took place in the same period as the SMART surveys in the ASAL counties, i.e., in February and July, in order to incorporate the acute malnutrition prevalence results and mortality rates, indicators of maternal nutrition and newborn and young child nutrition, and food security data. Each county is responsible for compiling this information using a check-list designed for this purpose.

Sentinel sites – NDMA
Sentinel sites were put in place in each of the ASAL counties by the National Drought Management Authority (NDMA). A newsletter is distributed each month for each of the counties. The arm circumference measurements of children aged 6 to 59 months are taken at these sites. The rate of admission to the different acute malnutrition support programs is also recorded. These figures come from the HIS.

Routine Health and Nutrition Information System – HIS
As part of routine surveillance, information from health and nutrition programs are grouped in an information system. Admission rates to acute malnutrition treatment programs are used to potentially initiate a SMART survey in non-ASAL counties.

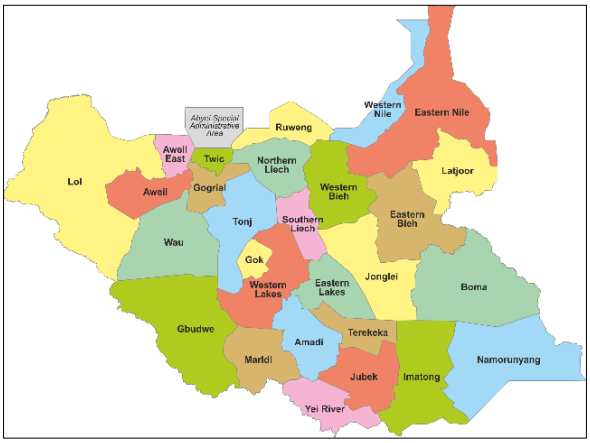
If the HIS or the information system of the NDMA has any gaps for one or more ASAL counties, small-scale SMART surveys would then be carried out approximately every three months between integrated SMART surveys, which collect many indicators and generally take place once a year. Small-scale surveys are simple and only collect the basic indicators of a SMART survey (age, sex, weight, height, MUAC, bilateral edema and morbidity (fever, acute kidney failure and diarrhea).

4.2.6 Dissemination and use of SMART survey results

SMART survey results are disseminated via the NITWG nationally, and within the counties enumerated. As part of acute malnutrition management, malnutrition prevalence rates are used to calculate the number of severely and moderately acute malnourished children to be treated each year, and thereby better tailor the needs of nutrition support programs and preventive programs. In Kenya, the number of children requiring support is calculated twice, depending on malnutrition seasonality, as for the IPC analysis phases. In order to track national malnutrition prevalence trends in Kenya, meta-analyses of all SMART surveys are conducted.

4.3 South Sudan

4.3.1 Background and nutrition situation



Background
South Sudan was established in July 2011 from the three southern provinces of the Republic of Sudan (Bahr el Ghazal, Equatoria and Upper Nile). Despite immediate recognition of the State by the international community, there are still disputes to this day on its definitive borders.

Since the end of 2013, South Sudan has been foundering in a particularly bloody civil war, causing the displacement of over 2 million people within the country and to neighbouring countries. In August 2015, the parties to the conflict signed a peace agreement that was considered a crucial step in ending the conflict. Even before the recent conflicts, South Sudan had already been grappling with several decades of continuous war. The country has among the lowest socioeconomic indicators in the world, and has not achieved a single MDG. The country ranks 169th out of 188 countries on the HDI, and only 1% of its GDP is allocated to the health sector. Despite vast swaths of arable land, unexploited water resources and significant animal stock (cattle, fish), the general lack of basic infrastructure and roads, market integration and poor investments in agriculture and weak harvests have driven the country into a situation of generalized food insecurity. The rainy season, which is generally from May to October, also contributes to further decreasing individuals' ability to access basic services. Due to the ongoing conflicts, the humanitarian response to the crisis, through a wide range of health and nutrition interventions, among others, remains a challenge.

South Sudan is a federal State comprising 26 states since October 2015 (see map above). Each state is subdivided into counties, which themselves are subdivided into districts, and then “boumas”. South Sudan has 86 counties. Prior to October 2015, the country had only 10 federal states.

Nutrition situation

In South Sudan, the most recent national prevalence rates of the different types of malnutrition are those from the 2010 MICS survey. The survey found alarming GAM rates of over 20%, as shown in Figure 13 below. The prevalence of chronic malnutrition was also above 30%, the threshold considered to be “serious” by WHO. The underweight prevalence was 27.6% in 2010. In early 2015, the nutrition situation in the country’s various states and shown on the map produced in the IPC analysis in Figure 14 below, indicated GAM prevalence rates that were still very high, above the critical level of 15% (and sometimes even above 20%-25%), primarily in the country’s northern states (Jonglei, Unity and Upper Nile, Northern Bahr el Ghazal Nord and Warrap).

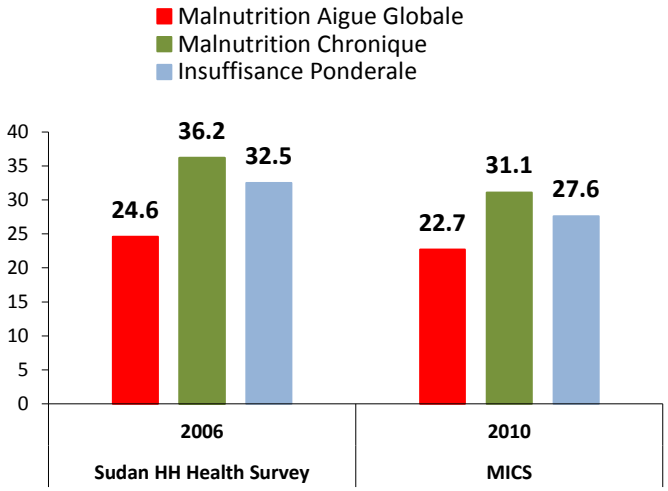


Figure 13: Trends in malnutrition prevalence in South Sudan between 2006 and 2010 (WHO 2006 Growth Standards)

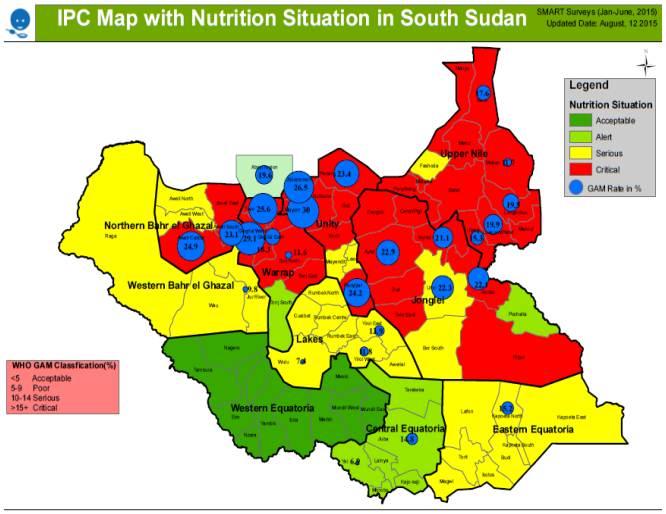


Figure 14: Map of the nutrition situation of South Sudan, early 2015 (IPC analyses)

4.3.2 Introduction of the SMART Methodology in South Sudan

The first SMART surveys took place in 2008 and were conducted by nutrition partners (mainly NGOs) working in the southern region of the Republic of Sudan, before South Sudan had been established as a country in 2011.

The crises and emergencies in South Sudan in recent years, but even before, in the republic’s southern region led to the activation of the Nutrition Cluster in 2010. The Nutrition Cluster is chaired jointly by the Department of Nutrition in the Ministry of Health and by UNICEF. Three working groups were created within the Nutrition Cluster, including the Nutrition Information Working Group (NIWG).

Prior to 2013, nutrition information in South Sudan was collected in multiple different ways by the various stakeholders, making it impossible to achieve true consensus on the nutrition situation. The nutrition information management capacities and the ability to implement quality nutritional assessments such as SMART surveys were also limited in the government and the Ministry of Health, as among the various partners (mainly because of high staff turnover). SMART nutrition surveys were conducted at different times in the year, making it difficult to track malnutrition prevalence trends. During the 2013 crisis, this led to the implementation of non-coordinated responses that were sometimes duplicated, and information on the nutrition situation of the country that was challenged, consequently not facilitating reasoned decision-making. The need to respond more effectively and more appropriately to the crisis required a better performing information system. Since 2013, the nutrition situation has been working in close collaboration

with UNICEF on developing a nutrition information system and building the capacities of the country's stakeholders in the area of nutrition situation assessment. In 2014, UNICEF commissioned a review of the survey validation system. This helps to strengthen the nutrition information system in general through the implementation of a nutritional information management system based on a system similar to the one currently used in Kenya. Starting in June 2014, the NIWG began developing a new SMART survey validation system, relying on external support and assistance from the SMART team (ACF-Canada and CDC) via the SET (Surveillance and Evaluation Team) project conducted by ACF-USA, and funded by OFDA-USAID, thereby permitting a review of the quality of the surveys conducted in South Sudan and capacity-building for NIWG members.

At the same time, status forecasts of the IPC analyses of May 2014 indicated a sharp decline in the food and nutrition situation, especially in the states of Jongley, Unity and Upper Nile, which alone are home to roughly 56% of the population in a food insecurity situation. Faced with the need for data to describe and monitor the constantly changing nutrition situation, the Nutrition Cluster, in collaboration with all partners, identified the 10 most affected counties (out of 28) in which to conduct nutrition surveys. The selected counties were those that had no recent data on the nutrition situation. Selection also depended on security conditions, access to the areas to be enumerated, and flooding. The SMART/ACF-USA team then launched the second component of the SET project to support the Nutrition Cluster in collecting nutrition information in those states, and to build the capacities of partners in conducting Rapid SMART surveys[14]. This survey methodology was validated in 2014 with the aim of conducting quality nutrition surveys in a minimum period of time in emergency situations with high levels of insecurity and, consequently, limited access to survey areas. Rapid SMART surveys were carried out in several rounds in 3 of the 10 states identified by the Nutrition Cluster (Leer, Fashoda and Mayendit) to also determine the nutrition situation and track trends: the first round was in June during the pre-harvest lean season; rounds 2 and 3 took place in the post-harvest period, during the rainy season. The various rounds of the surveys were about two months apart. The relatively high frequency of the surveys was based on the key lessons learned from the famine in Somalia, namely a possible extremely rapid decline in the situation for already vulnerable populations. In total, eight Rapid SMART surveys were conducted in those three states.

Between 2014 and 2015, ACF-Canada organized several SMART Methodology training sessions funded by ACF-Canada and UNICEF to build the capacities of NIWG members in the validation of SMART survey protocols and results, evaluation of the quality of the data collected and in the interpretation of survey results and standardization of general implementation methods, in particular in the collection period. The Rapid SMART survey methodology was also covered. In total, four national training sessions were given: two sessions for survey coordinators and two sessions for field staff. In total, 75 people were trained. From the government, only two people from the National Bureau of Statistics (NBS) and three people from the Ministry of Health were trained. Of the partners, representatives from United Nations Agencies (UNICEF, WFP, FAO and UNHCR), and local and international NGOs (ACF, WorldVision, GOAL, IMC, Medair, Samaritan Purse, IRC, COSV, BRAC, CWW, PSI, etc.) were trained. Between 2013 and 2016, 12 people working in South Sudan (1 person from the Ministry of Health, 9 people working for NGOs, 1 person from UNICEF and 1 person from WFP) also participated in regional SMART training organized by ACF-Canada in Nairobi.

Despite the implementation of these various projects and training sessions, requests for more SMART capacity-building projects are still received from the NIWG and members of the Nutrition Cluster.

4.3.3 SMART survey implementation process in South Sudan

Nutrition Information Working Group

The main stakeholder is the NIWG, a group comprising representatives of the Ministry of Health, UN agencies and local and international NGOs working in the field of nutrition in South Sudan. The NIWG is chaired by the Nutrition Cluster's Nutrition Information Specialist. The NIWG reports directly to the Nutrition Cluster. The role of the NIWG is to support the government in its nutrition information management functions and to strengthen nutrition surveillance via the development of a performing nutrition information system, including quality SMART nutrition and mortality surveys. The aim is to enable better monitoring and better assessment of the nutrition situation in the states and counties of South Sudan. Table 14 below presents the different members of the NIWG and its roles and responsibilities.

[14] http://smartmethodology.org/survey-planning-tools/smart-methodology

Table 14: Members of the NIWG (2015-2016) and roles and responsibilities of the NIWG

NIWG members (2015-2016)	*NIWG roles and responsibilities*
Government: ✓ Ministry of Health – Department of Nutrition (MoH - Nutrition M&E Unit) ✓ National Bureau of Statistics (NBS) Partners: ✓ UNICEF ✓ FAO ✓ WFP ✓ WHO ✓ Care, ACF, CWW, SCI, IMC, MEDAIR, etc. ✓ FEWS NET ✓ (CDC)	✓ Review and validation of the SMART survey overall planning and implementation process; ✓ Validation of SMART survey protocols developed by partners (choice of indicators, sampling and collection tools); ✓ Final validation of SMART survey results via a thorough review of final databases and the final survey report; ✓ Compilation of all SMART survey results in an Excel spreadsheet; ✓ Triangulation of nutrition information (SMART surveys, routine data and other assessments with a nutrition component) via the Nutrition Information System (NIS) ✓ Responsible for the nutrition component of IPC analyses ✓ Development of standard tools and protocols for SMART surveys, IYCF surveys, and their validation. Routine data collection tools via the NIS were also standardized → These tools are designed to strengthen nutrition information systems and guarantee an acceptable level of quality for nutrition information; ✓ Development of an annual plan for SMART surveys to be conducted, and development of a prioritization plan (depending on population movements, screening, IPC analyses, conflicts, etc.)

The survey review process is as follows: the partners share their SMART survey protocols (Word document and Power Point presentation) with the NIWG. The NIWG reviews and makes observations on the protocols and then provides final validation. This validation process generally takes less than two weeks. Once the survey protocol has been validated, the partner can conduct the survey. The preliminary results and final databases are then shared with the NIWG for review and comment. Final validation of results occurs during a presentation by the partner (or its consultant) to the NIWG members. The comments or changes suggested by the NIWG should be incorporated into the final survey report. The entire validation process can take up to four weeks. External support from ACF-Canada is provided only if requested by the NIWG, and is no longer systematically included in the survey review and validation process.

In 2014, each nutrition partner was encouraged to appoint one focal point contact with nutrition assessment capacities to participate in NIWG meetings. An annual schedule of meetings was developed to allow the various members of the NIWG to attend more frequently.

4.3.4 SMART nutrition surveys conducted between 2013 and 2015

In South Sudan, several types of assessments are conducted to assess the country's nutrition situation:

SMART surveys
Nutrition and mortality surveys using the SMART Methodology (or Rapid SMART[15]) are conducted primarily in the country's Northern states, which have the highest GAM prevalence rates: Jonglei, Warap, Unity, Northern Barh el Ghazal, Central Equatoria and Lakes. SMART surveys are conducted in the counties of the states most affected by acute malnutrition and food insecurity according to an annual plan and prioritization plan. A plan identifying all SMART surveys to be conducted for the year is developed by nutrition partners wishing to undertake a SMART survey. The plan is then reviewed by the NIWG so that SMART surveys are carried out in priority areas first (critical areas according to IPC analyses, conflict zones, areas of population displacement, etc.). SMART surveys generally take place at two different periods in the year: before the harvest, in the lean season (April to July) and in the post-harvest period (October to December). SMART surveys are carried out primarily by the nutrition partners working in the

[15] http://smartmethodology.org/survey-planning-tools/smart-methodology

different states or counties. Some of these surveys also receive technical support through the recruitment of a SMART Survey Consultant by some partners. For 2016, 65 surveys using the SMART Methodology are planned. These surveys have been conducted since March 2016 to take the earlier lean season this year into account. As of early May, 12 SMART surveys had already been conducted, and 15 are currently in progress.

Table 15 below summarizes the total number of SMART surveys conducted each year, the representation and indicators of SMART surveys conducted in 2013, 2014 and 2015 in South Sudan.

Table 15: Total number of SMART surveys conducted per year, representation and indicators of SMART surveys conducted in 2013, 2014 and 2015 in South Sudan

	SMART Survey 2013	***SMART Survey 2014***	***SMART Survey 2015***
Number of SMART surveys conducted	43	51	59 (57 validated)
Representation	Small-scale → Counties in the following states: Jonglei, Northern Bahr El Ghazal, Eastern Equatorial, Lakes, Upper Nile, Unity and Warap	Small-scale → Counties in the following states: Jonglei, Northern Bahr El Ghazal, Eastern Equatorial, Lakes, Upper Nile, Unity, Warap, Western Barh El Ghazal	Small-scale → Counties in the following states: Jonglei, Northern Bahr El Ghazal, Eastern Equatorial, Lakes, Upper Nile, Unity, Warap, Western Barh El Ghazal and Abyei
Indicators			
Acute Malnutrition	X	X	X
Chronic Malnutrition	X	X	X
Underweight	X	X	X
Retrospective mortality	X	X	X
Vitamin A Supplementation and Deworming	X	X	X
Vaccination (measles)	X	X	X
Morbidity (sick, fever, diarrhea, cough)	X	X	X
Food Security	(X)	(X)	(X)
Water, Hygiene and Sanitation	(X)	(X)	(X)
Nutritional status of pregnant and breastfeeding women	(X)	(X)	(X)
IYCF Practices	(X)	(X)	(X)

X: Indicator included; (X): Indicator not systematically included

Funding for SMART surveys is mostly provided by UNICEF (60%) and a few other partners (OFDA, ECHO, DFID, etc.). According to information provided by UNICEF South Sudan, in 2013 the average cost of conducting a SMART survey was between USD $10,000 and $15,000. In 2014, the average cost of conducting a SMART survey was between USD $15,000 and $20,000. In 2015, the average cost rose to approximately USD $30,000 per survey. This is mainly due to the cost of transportation for teams during data collection in the survey areas and the transportation means used (i.e., boat, helicopter), as well as the crash in the value of the South Sudanese Pound. Given the number of SMART surveys conducted each year in South Sudan, the cost of conducting these surveys in a given year is extremely high.

Food Security and Nutrition Monitoring System (FSNMS)

The FSNMS surveys are a collaborative effort between WFP, FAO and UNICEF. These surveys collect information on food security as well as data on the MUAC, weight and size of children under 5, and are representative of all states. They take place twice a year (May-June and November-December) and are funded jointly by UNICEF, WFP and FAO. The NIWG provides technical support during the implementation of these surveys, particularly during the planning, implementation and analysis stages for the nutrition part. In early 2015, the FSNMS focal points were trained by UNICEF to enhance the quality of data from the FSNMS. It was a training-of-trainers session covering many topics including the SMART Methodology and the anthropometric measurement standardization test. The government (Ministry of Agriculture, Ministry of Health, Relief and Rehabilitation Commission (RRC) and the Bureau of Statistics) is highly involved in these surveys to ensure ownership of the activity. The Ministry of Health focal points in each state are all involved in the training and data collection phase, and during analysis.

Active screening
Within the framework of the implementation of the Rapid Nutrition Response, screening of children suffering from acute malnutrition is conducted during missions carried out by UNICEF and other partners (NGOs). These screening days are usually associated with other health, nutrition and other activities. Between January and December 2015, more than 145,000 children were screened.

4.3.5 Nutrition information systems in South Sudan and SMART Methodology

Nutrition Information System (NIS)
This system was implemented in July 2011. However, routine data from the nutrition programs implemented in South Sudan were collected separately, and each partner had its own system. This contributed to creating confusion in the Nutrition Cluster on the exact number of beneficiaries. The partners then agreed on the need for a single nutrition information system for data from malnutrition support and prevention programs. To achieve this, strategic collaboration was established between the Nutrition Cluster, UNICEF and WFP. The NIWG oversaw the process and, in conjunction with all partners, developed tools to collect routine data and set up a new nutrition information system for program data (performance indicators, coverage, IYCF data, micronutrient interventions, etc.) in July 2014. This is to enable partners to improve the quality of nutrition programs and to monitor indicators of the strategic response plan. Routine data can therefore now be entered directly online by the various partners with a flexible information submission period of two weeks. Once all the data has been submitted, the information reports are sent simultaneously to the Ministry of Health, the Nutrition Cluster, UNICEF and WFP. The Nutrition Cluster analyzes this data and triangulates it with other assessments to then send an analysis to the Ministry of Health, before sharing with partners and members of the Nutrition Cluster. Monthly statistics are presented once a month at meetings of the Nutrition Cluster. In August 2015, more than 60 people representing 37 different partners (NGOs and UN agencies) were trained in the use of the new nutrition information system. In May 2015, the information system was launched in a number of counties with the support of NGOs (in October 2015, a total of 520 OTP sites and 460 TSFP sites were included).

In the future, the plan is to integrate the results for SMART surveys in this system and no longer use the Excel spreadsheet to compile SMART information.

District Health Information System (DHIS)
This system managed by the Ministry of Health had only very few nutrition indicators (MUAC measurements and vitamin A supplementation) before it was revised last year. The system was strengthened in order to obtain monthly data to assess the effectiveness of malnutrition support programs and basic nutrition services, as well as to assess needs. This system includes screening data and performance indicators of support programs for children under 5 and pregnant and breastfeeding women.

Integrated Food Security Phase Classification (IPC)
The IPC was introduced in 2007 and has been used since 2008 to assess the food security situation at the national and state levels. Analyses are conducted four times a year (two main analyses and two updated analyses/forecasts). The IPC is institutionalized and has been adopted by the government as a reliable early warning and decision-making tool. The IPC is hosted within the National Bureau of Statistics and the Technical Working Group (TWG) is chaired by the Ministry of Agriculture. The national TWG is composed of the Ministry of Agriculture, Ministry of Health and different partners (UN agencies and NGOs). The Ministry of Agriculture is responsible for the food security component, and the NIWG is responsible for the nutrition component. Analyses for the nutrition component use either data from the SMART surveys or data from the FSNMS surveys. Initially, only the AC measurement was one of the nutrition indicators in the IPC. Following advocacy efforts by the NIWG, weight and height measurements are now also collected, allowing the inclusion of acute malnutrition prevalence in the IPC analysis through the use of the results of SMART surveys or FSNMS surveys. IPC results validation workshops are also organized. Maps showing the food and nutrition situation of the country, across states and counties, are then developed (Figure 15 below).

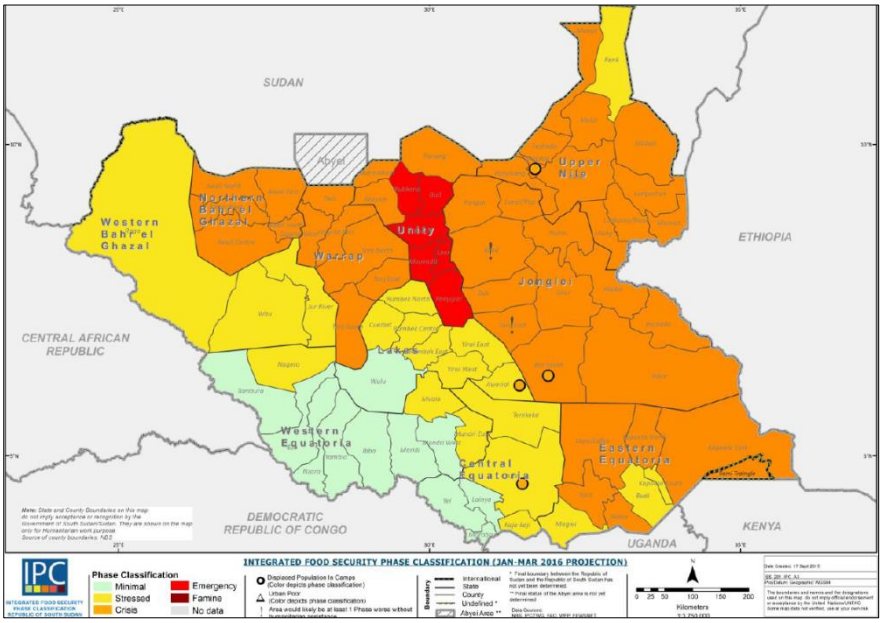


Figure 15: Updated IPC classification of acute food insecurity for the period January-March 2016

4.3.6 Dissemination and use of SMART survey results

The results of SMART nutrition surveys conducted in South Sudan are presented at meetings of the Nutrition Cluster that take place every two weeks. The results and reports are also posted on the Nutrition Cluster website to be shared more widely[16]. The results of SMART surveys, via IPC analyses, are used to coordinate and possibly redirect responses to the crisis. The IPC analysis was included in the humanitarian appeal of October 2012. The analyses in early 2016 pushed humanitarian partners and the global IPC team to call for immediate humanitarian action to assess the risk of famine in the state of Unity.

In South Sudan, SMART and IPC surveys from two years ago became the benchmark for deciding on the geographic location and extent of emergency responses. These surveys make it possible to accurately map the situation in almost every county. The different nutrition partners can also rely on the results of SMART and IPC analysis surveys to reassess their financial needs, to advocate for the mobilization of resources and to update the various response plans and strategies. Like the other countries described earlier in this report, survey results are also used to calculate the number of severely acute malnourished and moderately acute malnourished children to support each year.

4.4 Democratic Republic of Congo (DRC)

4.4.1 Background and nutrition situation

Background

The DRC is in Central Africa and is the fourth most populous country on the continent (74.9 million) and the second largest African country in area. Forests account for approximately 70% of the territory, compared to just 11% for agricultural areas. This shortage of arable land is one of the underlying factors of the food production deficit, estimated at between 30% and 40%. The DRC is 176th out of 188 countries as ranked by the UNDP HDI for 2015, and 63.6% of its population lives below the poverty line and has no access to adequate food. The mortality rates of children in the DRC are among the highest in the world. Although the DRC has significant mineral resources, decades of war and mismanagement have led to economic stagnation and a deterioration of basic infrastructures. Since independence in 1960, the population has suffered many political upheavals, corruption, a coup, two wars and many more localized armed conflicts, many of which are still ongoing. The country's situation remains precarious owing to negligence dating back to the Mobutu regime and the

[16] 2015 SMART surveys database. https://www.humanitarianresponse.info/en/operations/south-sudan/document/smart-surveys-database-2015

ensuing decades of conflict. Very few Congolese or foreign civilians living in DRC have managed to escape the violence (murders, mutilations, rape, forced displacement, looting, destruction of property or violations of economic and social rights). The kidnapping and recruitment of children into armed groups, widespread sexual violence and other abuses against civilians continue at present.

As of 2016, the conflict is still ongoing in the eastern provinces of Maniema, North, South Kivu and Katanga province in the southeast, with tens of thousands of newly displaced persons. In January 2016, humanitarian aid workers estimated that 7.5 million people, or 9% of the population, needed food and other humanitarian aid. The DRC currently has about 1.6 million internally displaced persons (IDP) within the country, and between 40 and 70 armed groups continue to drive people from their homes. More than 900,000 former IDPs have returned to their homes over the past 18 months, often to find their homes and belongings have been destroyed or looted. On top of widespread extreme poverty, the prolonged and complex emergency caused by the many conflicts in the eastern provinces of the country (4.5 million people are currently considered to be in a situation of acute crisis) is the political crises in neighbouring countries (CAR, Burundi and South Sudan), as well as internal tensions over the presidential elections scheduled for November 2016. An estimated 250,000 refugees currently live in the DRC, of which more than 105,000 are from CAR and about 18,000 from Burundi.

The DRC has recently changed its administrative division. Prior to June 2015, the DRC had 11 large regions called provinces; it now has 26. The subdivision levels after the province are the territory or municipality, the community (sector or chiefdom) and group.

Nutrition situation

Data from the latest Demographic and Health Survey (DHS) of 2013 to 2014, presented in Figure 16 below, indicate a very precarious nutrition situation in the DRC. The national prevalence of GAM is 8.1% including 2.8% SAM. This SAM rate, above the 2% threshold, places the country in a rather worrying situation. Some territories have GAM rates above the emergency threshold of 15%. The national prevalence of chronic malnutrition is also very critical since it exceeds the 40% threshold (42.6%). More than half of children with stunting are affected by severe chronic malnutrition. The prevalence of underweight is, therefore, rather high, with a national prevalence of 23.4%, placing the country in a serious situation.

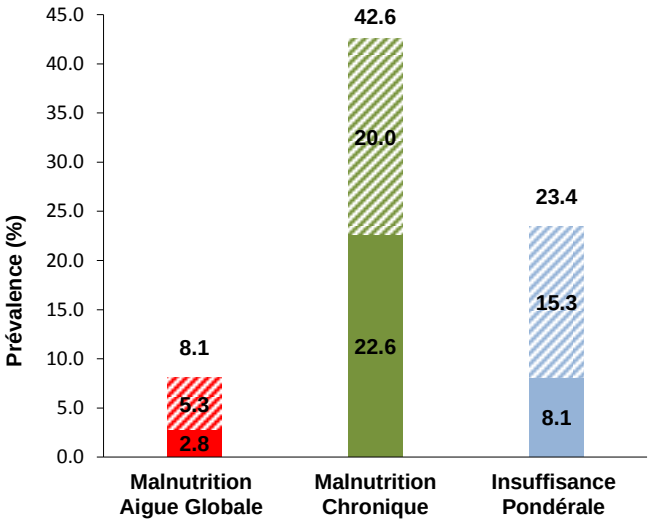


Figure 16: Nutritional status of children under the age of 5 in DRC (2013-14 SMART survey, WHO 2006 Growth Standards)

Despite a still precarious nutrition situation, the DRC has made progress in improving the nutritional status of children under 5 years of age in recent years, as shown by the trends in malnutrition prevalence in Figure 17 below. Between 1995 and 2013-14, the prevalence of GAM dropped below the 10% threshold, after hitting more than 20% in 2001. The prevalence of chronic malnutrition fell from 51.0% in 1995 to 42.6% in 2013-14. The prevalence of underweight was reduced by almost 10% in 20 years, from 30.7% in 1995 to 23.4% in 2013-2014.

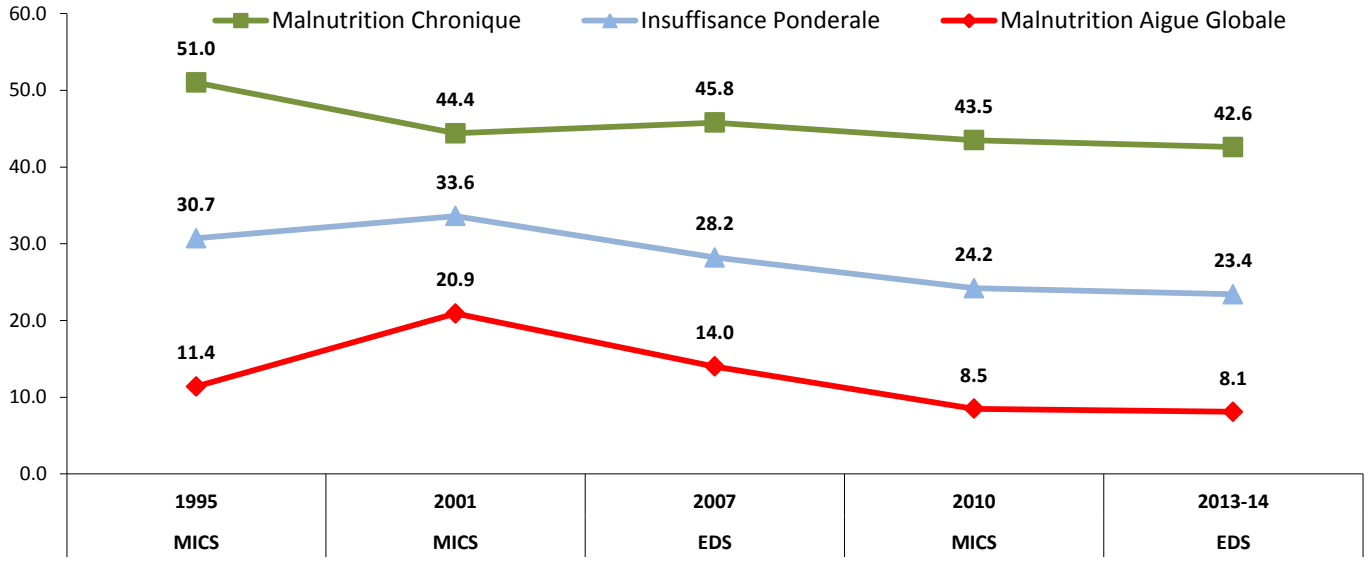


Figure 17: Trends in malnutrition prevalence in DRC between 1995 and 2013-14 (WHO 2006 Growth Standards)

4.4.2 Introduction of the SMART Methodology in the DRC

The first SMART surveys took place in 2007. These surveys were conducted within the framework of mapping the food and nutrition situation in the provinces most affected by acute malnutrition (GAM>10%) according to the provincial data from the 2007 DHS: Katanga, Equateur, Kasai Oriental and Kasai Occidental. WFP and UNICEF had proposed conducting nutritional and food security surveys in all the territories of the four aforementioned provinces to better direct their nutrition and food safety interventions. Conducting surveys in each of the Health Zones (HZ) was originally proposed, but the high cost of such representation forced all partners to conduct representative SMART surveys for the territories of these provinces. These surveys were mainly conducted by the country's nutrition partners in close collaboration with the Ministry of Health and the National Nutrition Programme (PRONANUT) responsible for the implementation of nutrition surveys and nutrition surveillance in the DRC.

In 2010, six provinces were finally covered by SMART surveys: Kasai Oriental, Kasai Occidental, Katanga, Equateur, Maniema and Bandundu. Within these six provinces, the results showed that several territorial entities had GAM prevalence above the 10% threshold. It is in this context that a nutritional surveillance, food security and early warning pilot project was launched in Katanga to prevent the situation from deteriorating in the territories where the prevalence of GAM was below 10% but with signs of food insecurity. In 2011, SMART surveys had also been implemented in South Kivu, North Kivu and Kinshasa.
To help countries obtain quality nutritional data and establish effective monitoring systems, United Nations agencies and international NGOs developed the Health and Nutrition Tracking Service (HNTS), enabling the establishment of technical support for countries and humanitarian organizations in charge of health and nutrition issues in crisis situations. The HNTS was established in the DRC in 2009 and has enabled a review of the quality of SMART surveys conducted in 2009 and 2010. This analysis showed that the quality of SMART surveys was not optimal. Following the recommendations of the HNTS team, training on the SMART Methodology designed for survey coordinators was organized in 2013, helping to further build the capacities of 22 people from the DRC. Nine people from PRONANUT in the Ministry of Health were trained on the government side. As for partners, individuals from United Nations agencies (UNICEF and WFP) and local and international NGOs (ACF ALIMA, Caritas, COOPI, UNICEF, WFP and MAGNA) were trained.

4.4.3 SMART nutrition surveys conducted between 2013 and 2015

The recent crises and emergencies in the DRC led to the establishment of the Nutrition Cluster in 2006. The Nutrition Cluster is chaired jointly by UNICEF and one nutrition partner (ACF from 2006 to 2012 and then COOPI since 2012). PRONANUT is a very active member of the Nutrition Cluster, and the government co-chairs the cluster in all provinces except Kinshasa, where there is no provincial cluster. The general objective of the Nutrition Cluster is to bring the GAM prevalence below the 10% threshold of intervention ("precarious") and reduce under-5 child mortality to fewer than 2 deaths per 10,000 children per day. To help achieve this goal, the Nutrition Cluster is actively working on establishing a nutrition surveillance and early warning system in the Health Zones.

In the DRC, SMART surveys are conducted on a small scale and in the Health Zones (HZ) declared to be on alert by the Nutrition Surveillance, Food Security and Early Warning System (SNSAP). The SNSAP has been active in each of the 26 new provinces of the country since 2015.

During the implementation of SMART surveys in the DRC, the Survey Committee, set up by the Nutrition Cluster, is responsible for validating survey protocols before their implementation, and validating the results of such surveys. The Survey Committee, overseen by PRONANUT, is also responsible for the implementation of SMART surveys in collaboration with several partners:

- ✓ Institut National de la Statistique (INS) [National Statistics Institute]
- ✓ UNICEF, WFP, FAO, WHO, NGOs (ACF, Première Urgence, COOPI, etc.)
- ✓ Service National des Statistiques Agricoles (SNSA) [National Agricultural Statistics Service] (occasionally)
- ✓ Institut Supérieur des Techniques Médicales (ISTM) [Higher Institute of Medical Technology] (occasionally)
- ✓ The Population Science Department of the University of Kinshasa (occasionally)

SMART survey steering groups were established at the national level and in the administrative centres of the provinces, but the planning and implementation of SMART alert surveys are general initiatives centrally managed through PRONANUT and the Survey Committee.

Table 16 below summarizes the different activities that were carried out during SMART survey implementation in the DRC, as well as the roles and responsibilities of each of the stakeholders in the planning, training, data collection, analysis and reporting processes, and in the dissemination of results.

Table 16: Summary of the different activities in the implementation of SMART surveys in 2013, 2014 and 2015, and roles and responsibilities of the government and nutrition partners

Steps	*Activities*	*Person(s) responsible*
Planning	✓ Review and validation of SMART survey protocols and training and collection tools ✓ Sampling (selection of clusters to be enumerated and printing of EA maps) (INS) ✓ Preparation of logistics for training, data collection and entry/analysis of the data collected ✓ Anthropometric equipment (scales and height boards) supplied by UNICEF and sometimes by other partners	✓ Survey Committee ✓ Technical partners
Training	✓ Identification of enumerators and supervisors	✓ PRONANUT ✓ Zone chief physicians (HZ on alert) ✓ Technical partners
	✓ Training of enumerators and supervisors (4-5 days) ✓ Standardization test	✓ PRONANUT (trainers) ✓ Technical partners (trainers) ✓ Zone chief physicians (facilitators)
Data Collection	<u>Data collection:</u> ✓ 1 day per cluster: - Estimation of the number of households and selection of households to be enumerated (systematic random) - Data collection and entry in ENA	✓ Enumerators and Supervisors ✓ 1 team leader and 2 measurers per team
	<u>Field supervision:</u> ✓ Supervision of survey teams	✓ PRONANUT ✓ Technical partners ✓ Zone/Area chief physicians (facilitators)

Steps	*Activities*	*Person(s) responsible*
	Awareness-raising and Communication ✓ Communication around the survey with administrative and health authorities of the HZ and the population (letters)	✓ Information cascaded down from PRONANUT ✓ Technical partners ✓ Zone/Area chief physicians
Data Entry & Analysis	✓ Data entry (dual entry) ✓ Use of ENA, EPI Info and SPSS software	✓ PRONANUT and/or technical partners
Writing of the final report	✓ Writing of a preliminary report ✓ Writing of the final report ✓ Validation of results by the Survey Committee	✓ PRONANUT and/or technical partners ✓ Survey Committee
Dissemination of Results	✓ Presentation of SMART survey results at Nutrition Cluster meetings ✓ Dissemination of results to all nutrition partners (survey reports and SNSAP newsletter) ✓ Posting of survey reports on the PRONANUT website[17] ✓ Presentation of results in the surveyed HZ	✓ Survey Committee ✓ Technical partners ✓ Nutrition Cluster ✓ PRONANUT ✓ Zone/Area chief physicians

Nutritional screening is sometimes done by NGOs in Health Zones on alert in addition to SMART surveys, primarily because the Survey Committee and the SNSAP team lack speed in the analysis and dissemination of nutrition information. In December 2015, a workshop on strengthening the nutrition information system was organized to identify the strengths and weaknesses of the current system and develop recommendations for its improvement. A MICS survey to obtain nutritional data at the national level and for the 26 provinces in the country is being planned.

Funding

Funding for SMART surveys is generally provided by UNICEF and ACF primarily via ECHO funds. Other partners working with PRONANUT and/or implementing SMART surveys also contribute funding (WFP, other NGOs).

According to UNICEF DRC, the average cost of conducting a SMART alert survey in a HZ is between USD $7,000 and $15,000. These surveys are relatively costly for small-scale surveys. This is mainly because the central PRONANUT team travels to teh HZs to conduct the surveys in the training and data collection phases.

Table 17 below summarizes the total number of SMART surveys conducted each year between 2013 and 2015 in the provinces, the representation and indicators of SMART surveys conducted in 2013, 2014 and 2015 in the DRC.

[17] http://www.pronanut-rdc.org/telechargements/rapport-d-enquetes-etudes.html

Table 17: Total number of SMART surveys conducted per year, representation and indicators of SMART surveys conducted in 2013, 2014 and 2015 in the DRC

	SMART surveys Nov. 2012 – Oct. 2013	***SMART Survey Nov. 2013 – Oct. 2014***	***SMART Survey Nov. 2014 – Oct. 2015***
Number of SMART surveys conducted	12	24	16 by early August 2015
Representation	Provinces and small-scale → Health zones on alert	Provinces and small-scale → Health zones on alert	Provinces and small-scale → Health zones on alert
Indicators			
Acute Malnutrition	X	X	X
Chronic Malnutrition	X	X	X
Underweight	X	X	X
Vitamin A Supplementation and Deworming	X	X	X
Vaccination (measles)	X	X	X
Retrospective mortality	X	X	X
IYCF Practices	(X)	(X)	(X)
Food Security	X	X	X
Nutritional status of pregnant and breastfeeding women	(X)	(X)	(X)

X: Indicator included; (X): Indicator not systematically included

The country is currently preparing the next MICS, with collection planned for late 2016.

4.4.4 Nutritional information systems in the DRC and SMART Methodology

The DRC has the following nutrition information systems:

Nutritional Surveillance, Food Security and Early Warning System (SNSAP)
This system was established in 2009 originally in the provinces of Katanga and Kasai Oriental. Since then, the SNSAP has grown to cover 511 HZs in October 2015 (national coverage). The SNSAP is based on indicators derived from data collected at the sentinel sites in the health zones, triangulated with data from other sectors. Sentinel sites are an area within a Health Zone and are randomly chosen from preselected areas. Triangulation addresses recent key data on diseases (measles, diarrhea, cholera), basic commodity prices, agricultural production, data from food consumption surveys and data on hygiene and sanitation. Regarding nutrition data, only the MUAC data of children and pregnant and breastfeeding women are collected. Once the data has been triangulated, the HZs are classified according to four categories: HZ under control, HZ to be closely monitored, HZ on alert and silent HZ. A HZ is declared on alert if nutrition indicators or triangulation indicators are on alert status for three consecutive months. A checkup SMART survey can then be conducted within the EA on alert to confirm whether there is a decline in the nutritional and/or food situation. The SNSAP also collects routine data from acute malnutrition support programs (admissions and performance indicators). The SNSAP distributes quarterly newsletters.

Table 18: Total number of alerts issued by SNAP, total number of SMART surveys conducted and total number of confirmed alerts between November 2012 and October 2015

	SMART surveys Nov. 2012-Oct. 2013	***SMART Survey Nov. 2013-Oct. 2014***	***SMART Survey Nov. 2014-Oct. 2015***
Number of alerts issued	40	55	81
Number of SMART surveys conducted	12	24	16 in August 2015
Number of confirmed alerts	12	22	11 in August 2015

Nutritional screening is sometimes done by NGOs in Health Zones on alert, in addition to SMART surveys, primarily because the Survey Committee and the SNSAP team lack speed in the analysis and dissemination of nutritional information. The alert validation process is lengthy since indicators must be on alert status for three consecutive months.

Integrated Food Security Phase Classification (IPC)

The IPC was introduced in 2007 and has been used since 2008 to assess the food security situation at the national level and in the provinces and areas of intervention. Analyses are conducted twice a year. Version 2.0 of the IPC manual was introduced in 2012, and 45 people, members of the Technical Working Group (TWG) responsible for the analysis, were trained. The IPC is hosted within the National Department of Statistics of the Ministry of Agriculture, with administration provided by FAO. The National TWG is composed of the Ministry of Agriculture, Ministry of Health, Ministry of Planning, United Nations agencies (FAO, WFP, UNICEF and OCHA) and national and international NGOs. The analyses use data from the SMART surveys and from SNSAP, data from the FSMS (Food Security Monitoring System) surveys carried out by WFP and other health statistics and/or results from various assessments. Maps showing the food and nutrition situation of the country, across provinces and municipalities, are then developed (Figure 18 opposite).

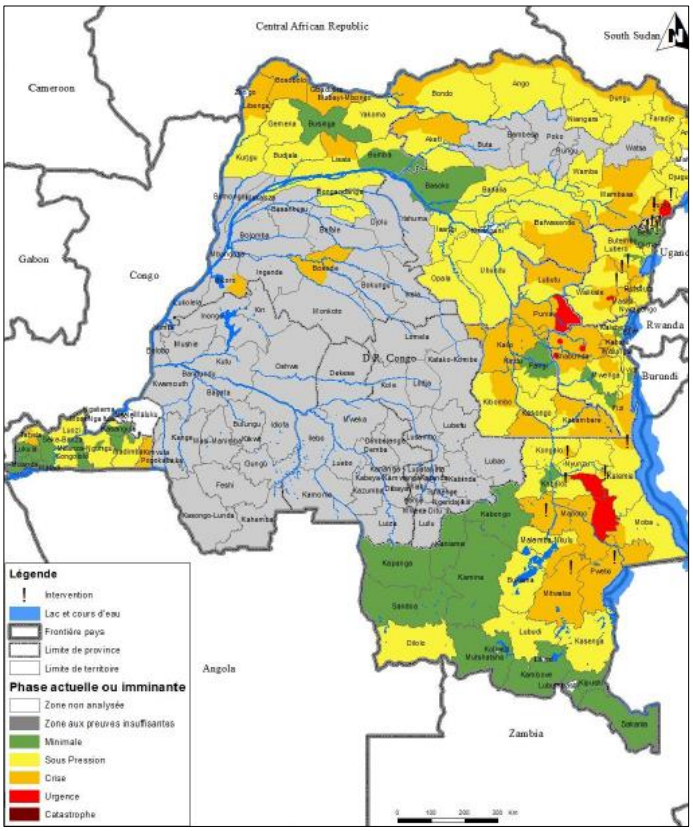


Figure 18: Updated IPC classification of acute food insecurity for the period September 2015-March 2016

National Health Information System (NHIS)

A National Health Information System was established in the DRC, providing primarily routine data on acute malnutrition support programs and IYCF practices. Some of these data are reported in SNSAP bulletins (admissions, performance indicators).

4.4.5 Dissemination and use of SMART survey results

The results of SMART surveys are presented at meetings of the Nutrition Cluster, distributed to all partners via nutrition survey reports and quarterly newsletters produced by the SNSAP. The results are also returned to the HZ concerned. This helps to identify the geographic areas where populations are most affected by food and nutritional security, to prioritize actions in acute crises and to maximize the impact (number of people assisted, cost/efficiency). As part of acute malnutrition support, SMART survey results are used to calculate the number of severely and moderately acute malnourished children to be treated each year, and thereby better tailor the needs of nutrition programs to treat them and the preventive programs. They also serve as advocacy tools for fundraising.

4.5 Madagascar

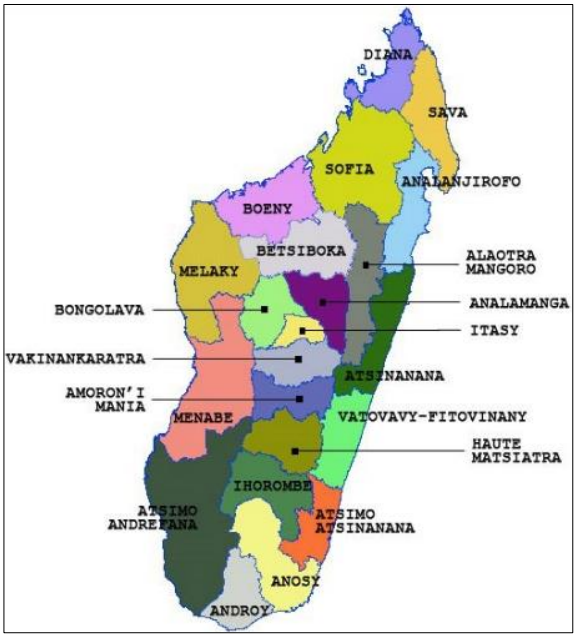
4.5.1 Background and nutrition situation

Background

Madagascar is a large island nation in the Indian Ocean separated from the rest of Africa by the Mozambique Channel. Madagascar remains one of the poorest countries in the world and is ranked 154th out of 188 according to the UNDP HDI for 2015. More than 80% of its population lives below the poverty line. The country is one of the few in the world to have experienced over the past few decades stagnation of per-capita income coupled with an increase in absolute poverty. Madagascar is also one of the 10 countries in the world that are most vulnerable to natural disasters (hurricanes, flooding and droughts). A quarter of Madagascar's population, about five million people, live in areas vulnerable to natural disasters. Climate change and environmental degradation exacerbate these risks and increase household vulnerability. Moreover, the increasing fragility of the ecosystem due to deforestation and poor land

management intensifies vulnerability to shocks and related food insecurity. According to the results of an assessment of 21 districts in 2015, 1.9 million people suffer from food insecurity. The highest levels of food insecurity are in the south of the country, which is hit by recurrent droughts. In these areas, 390,000 people are considered to have serious food insecurity.

Madagascar had a lengthy political crisis from 2009 to 2013 that negatively affected the government's institutional capacity, economic growth and development efforts at the time. Public expenditures in education and health have decreased significantly and have resulted in higher costs, particularly in education. The school dropout rate has risen because of poverty, with more than 1.6 million school-age children not in school. Budget cuts also forced the government to close more than 260 rural health centres. The country has not yet come out of the political crisis into which it was plunged following the 2009 coup, which has resulted in the suspension of the majority of foreign aid. Although some development partners re-committed in 2012, the volume of aid is insufficient. This has a severe impact on the provision of basic social services to an already vulnerable population. Some donors have maintained funding to social sectors since the beginning of the political crisis, but this has encouraged the creation of a parallel system through non-governmental organizations (NGOs), leading to the erosion of national capacities and, therefore, a significant decrease in the effectiveness of aid.



Since 2007, Madagascar has been divided administratively into 22 regions. These regions are the result of the re-zoning of the former six provinces. Each region is divided into districts, also called departments (Madagascar has 112 departments).

Nutrition situation

The rates of national malnutrition prevalence in Madagascar come from the 2012 Millennium Development Goals National Monitoring Survey (ENSOMD). Figure 19 (below) shows a GAM prevalence of 8.2%, including 1.0% SAM. These acute malnutrition rates mean the country's situation is "precarious" according to the WHO classification. The chronic malnutrition rate is 47.3%. Nearly half of children with chronic malnutrition suffer from its severe form (18.1%). With almost half of children under 5 affected, Madagascar has the fourth highest rate of chronic malnutrition in the world. The underweight prevalence was 32.4%.

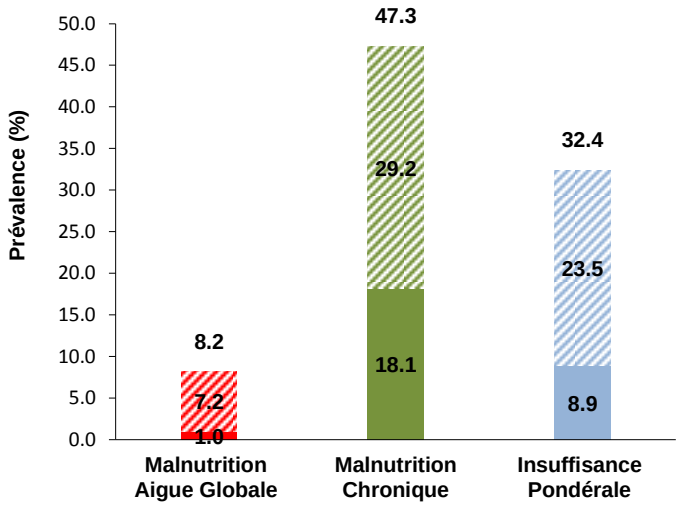


Figure 19: Nutritional status of children under the age of 5 in Madagascar (2012-13 ENSOMD survey, WHO 2006 Growth Standards)

As for the trend in the nutritional status of children (Figure 20 below), it is noted that chronic malnutrition dropped by more than 10% between 1992 and 2012-13, going from 60.9% to 47.3%. However, Madagascar remains one of the countries most affected by chronic malnutrition. The prevalence rates of acute malnutrition and underweight from the 2008-09 DHS were not been validated. That said, these malnutrition prevalence rates show similar trends between 1992 and 2012-2013, but show no real improvement in the nutrition situation. The prevalence of GAM, however, appears to have gone back below the 10% threshold to 8.2% in 2012-2013. Underweight dropped by only three points between 1992 (35.5%) and 2012-2013 (32.4%) and remains far from the target set for the achievement of MDG 1 and the reduction by half of the underweight prevalence (19%).

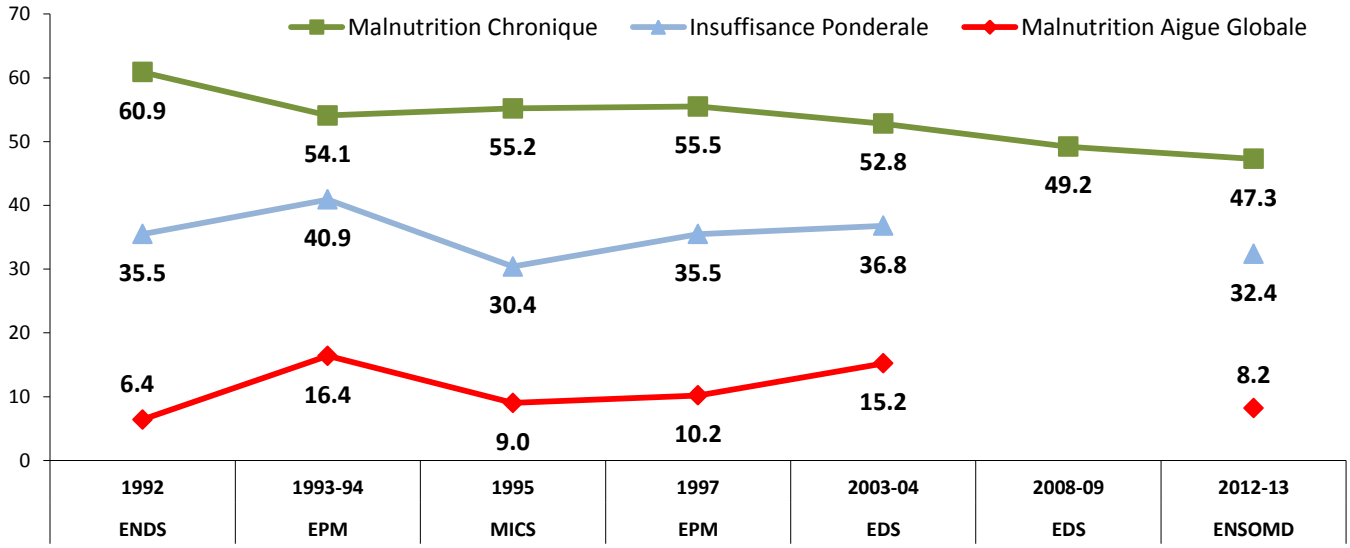


Figure 20: Trends in malnutrition prevalence in Madagascar between 1992 and 20012-13 (WHO 2006 Growth Standards)

4.5.2 Introduction of the SMART Methodology in Madagascar

SMART nutrition and/or mortality surveys have been carried out in Madagascar since 2006. SMART surveys are localized to certain districts in the Southern regions, generally corresponding to the areas of intervention of nutrition partners (NGOs). The National Nutrition Office (ONN), in collaboration especially with UNICEF and other nutrition partners, supports and/or implements a few SMART surveys. SMART surveys are mainly carried out in the South and sometimes in cities. Nutrition and/or retrospective mortality surveys using the SMART Methodology generally collect some health and nutrition indicators (nutrition program coverage, vitamin supplementation A and deworming, morbidity, measles vaccination), in addition to baseline data (sex, age, weight, height and MUAC).

4.5.3 SMART nutrition surveys conducted between 2013 and 2015

After joining the SUN movement in February 2012, Madagascar established the National Nutrition Council (CNN). This is a multisector nutrition platform chaired by the Prime Minister and composed of several ministries and Members of Parliament, donors, technical and financial partners and NGOs. The CNN oversees the National Nutrition Office (ONN). The ONN is responsible for defining, coordinating and monitoring the implementation of interventions to curb malnutrition. Regional Nutrition Offices (ORN in French) have been set up in 22 regions in Madagascar. The ONN also co-chairs the Nutrition Cluster with UNICEF. The ONN, in collaboration with the Department of Nutrition of the Ministry of Health, the National Institute of Statistics (INSTAT) and the various technical and financial partners, carries out different types of nutritional assessments in Madagascar.

National surveys

As previously indicated, the underweight and GAM prevalence rates on the 2008-2009 DHS had not been validated. The MICS survey conducted in 2012 had also not collected the anthropometric measurements of children under 5 years. It was therefore necessary to conduct a national survey that included anthropometric data of children under 5 years to update the national nutrition situation, which had last been done in 2003-04 for acute malnutrition and underweight, and to monitor Madagascar's progress in

achieving the MDGs in a context of prolonged political crisis. A National Survey on Monitoring the Millennium Development Goals (ENSOMD) was carried out by INSTAT in collaboration with UNFPA, the ONN, different government institutions and the various technical and financial partners. The quality of the anthropometric data collected in this survey was assessed using the ENA software, and analysis of the overall quality score from the plausibility report automatically generated by the software.

Rapid nutrition assessments (screening and/or SMART surveys)
Since 2015, rapid nutrition assessments based on MUAC measurements have helped identify children suffering from acute malnutrition in the districts most affected by drought in the South. Two rapid nutrition assessments were conducted in 2015 (April and October) and one in February 2016. Due to the continuing drought and thus increased vulnerability of the most affected populations, rapid nutrition assessments are now put in place every month. These assessments are carried out by the Department of Nutrition through community health workers, with technical and financial support from UNICEF. They concern all children aged 6 to 59 months and are, therefore, thorough for the Health Districts (DS) concerned. The DS affected by these rapid assessments are: 4 DS in the region of Androy, 2 DS in the region of Atsimo and 2 DS in the region of Anosi.

A study is currently being conducted by UNICEF and several nutrition partners in the country on the implementation of SMART nutrition surveys in the Southern districts affected by the crisis following questions on the quality of MUAC measurements during these rapid nutrition assessments. These SMART nutrition surveys could potentially be coupled with retrospective mortality surveys.

UNICEF also holds acute malnutrition screening sessions during which the arm circumference of children aged 6 to 59 months is measured during national children's health days.

Comprehensive Food Security and Vulnerability Analysis - CFSVA
Food security surveys (CFSVA) and/or joint assessments (CFSAM) are also conducted regularly (1-2 times a year) by WFP and FAO in collaboration with different partners. Some of these surveys collect nutrition indicators including MUAC among children under 5. The CFSVA of September 2014 used the nutrition data from the ENSOMD survey.

4.5.4 Nutrition information systems in Madagascar and SMART Methodology

Madagascar has the following nutrition information systems:

Early Warning System (EWS)
In 1996, a dietary risk Early Warning System (EWS) was implemented in southern Madagascar by the European Agency for Development and Health (AEDES) to prevent food crises. This system was funded by the European Commission until June 2004. In December 2004, the EWS was incorporated into the Rural and Food Security Information System (SIRSA), also funded by the European Commission and implemented by AEDES. The aim of SIRSA was to establish an information system in 8 regions. This system planned to gather, expand and integrate the various existing sources of socio-economic data (including the EWS), while improving their quality. The EWS was subsequently managed by the Food Security Cluster in order to provide information on nutritional status and food security conditions. Nutrition information was coordinated by the ORNs and various NGOs present in the southern regions. In terms of nutrition indicators, the prevalence of underweight was reported. Weight and age data came from the Community Nutrition Program implemented by the ONN to monitor and promote growth. The EWS was stopped in 2012 mainly because it was hosted by the WFP and not by the Malagasy government. There are currently discussions between the various partners and the government to restart the EWS, this time with an institutional foothold.

Integrated Food Security Phase Classification (IPC)
A food security IPC analysis is conducted by FEWS NET in partnership with the Food Security Cluster, the government and other partners. Discussions are underway to conduct IPC analyses that include more of a nutrition component (Figure 21 below).

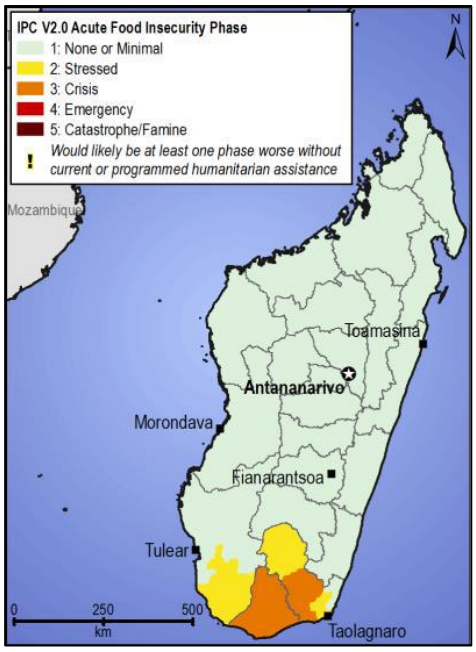


Figure 21: Updated IPC ranking of acute food insecurity for the period April-May 2016

Nutrition Information System (SINut)
This system is hosted by the Department of Nutrition of the Ministry of Health, also responsible for screening data during rapid nutrition assessments. Routine data is reported by Health Centres through SMS messages. However, this system remains quite weak and has low coverage.

Nutrition information from SINut, rapid nutrition assessments and SMART surveys conducted by partners are then triangulated in the Nutrition Cluster to get a picture of the nutrition situation. This information is then disseminated via newsletters.

4.5.5 Dissemination and use of SMART survey results

The results of rapid nutrition assessments and SMART surveys conducted by NGOs in southern health districts are presented at meetings of the Nutrition Cluster and the ONN.

In February 2012, Madagascar joined the SUN Movement. At that time, nutrition had already been identified in Madagascar as one of the priority areas for anti-poverty development strategies. The 2004 National Nutrition Policy coordinated by the CNN was broken down into National Action Plans for Nutrition (PNAN I for 2004-2009 and PNAN II for 2012-2015). PNAN II covers the period 2012-2015 but is currently still valid. In order to develop PNAN III, the country needs updated nutritional data. At present there are no future national surveys (MICS or DHS) planned because the government would first like to carry out a general census of the population, since the last census was in 2004. The current study on the implementation of SMART surveys could also include the possibility of conducting a national nutrition survey using the SMART Methodology, representative for each of the 22 regions. Some food security as well as water and sanitation indicators could also be collected
.

4.6 Summary of countries in Category 2

The table below presents the lessons learned for the countries in Category 2. These are lessons learned from the analysis of the secondary information collected, and are based on discussions with the various contributors to this report for countries in Category 2.

Activities	*Lessons learned*
Mechanisms of coordination between government and partners in the implementation of SMART surveys	**Strengths** ▪ SMART NNS coordinated by the government (Ministry of Health and/or Institute of Statistics, other State structures) and technical and financial partners; ▪ Coordination of nutrition information facilitated and enhanced through the establishment of nutrition information working groups (Kenya, South Sudan); ▪ All the countries in this category demonstrate a strong interest in SMART surveys. Development partners (NGOs, donors, UN agencies) consider the results to be nutrition benchmarks; ▪ Support from UNICEF (technical support, consultant recruitment, anthropometric equipment, training) and ACF-Canada (training) is decisive in the implementation of SMART surveys; ▪ The implementation of SMART surveys is widely supported by UNICEF through of lobbying governments and major technical and financial partners and/or via technical support work. UNICEF can be considered the government's top partner in carrying out SMART surveys; **Needs improvement** ▪ No SMART trainings have been regularly conducted for survey managers to continuously enhance the capacity of members responsible for the management and implementation of SMART surveys (government and/or partners) and thereby increase their empowerment in the implementation process (Cameroon, DRC, Madagascar); ▪ Need to continue technical support (e.g. via the recruitment of a SMART survey consultant and/or support from UNICEF and ACF-Canada particularly for Kenya and South Sudan) to support use of data from SMART surveys in the nutrition information system; ▪ Need to improve coordination between UNICEF and UNHCR to conduct surveys at refugee camps and/or provinces with high concentrations of refugee populations (Cameroon).
Frequency and implementation period of SMART surveys	**Strengths** ▪ Joint planning of small-scale SMART surveys through the development of an annual SMART survey plan in areas of food and/or nutrition insecurity. The implementation of surveys then depends on a prioritization plan (South Sudan, Kenya); ▪ Establishment of regional and/or small-scale SMART surveys in priority areas in terms of nutritional or dietary issues or others (Cameroon, DRC, Madagascar).

Activities	*Lessons learned*
	Needs improvement ▪ Since 2013, the number of SMART surveys conducted in South Sudan annually has consistently increased (43 SMART surveys in 2013, 59 surveys in 2015 and 65 surveys scheduled for 2016). The relevance and sustainability of conducting so many SMART surveys at the second administrative level (or smaller) each year remains unclear, especially when considering the need for nutrition information, the current humanitarian response, and the costs of implementation.
Representation of SMART surveys	**Strengths** ▪ SMART surveys implemented at the first administrative level (Cameroon) or second administrative level (Kenya, South Sudan) or smaller scale (Cameroon, Kenya, South Sudan, DRC, Madagascar) in priority nutrition and/or food issue zones. **Needs improvement** ▪ Need to reflect on the relevance of conducting SMART surveys for the health zones (DRC).
SMART survey financial partners and budget	**Strengths** ▪ Continued interest of financial partners in SMART surveys, considering the results (in particular malnutrition prevalence) as benchmark nutrition data; ▪ Use of quality anthropometric equipment supplied by UNICEF. **Needs improvement** ▪ The average cost of regional and small-scale SMART surveys is high in Cameroon and South Sudan compared to Kenya and the DRC: ~USD $19,000 in Cameroon, not taking consultant recruiting costs into account, and USD $30,000 in South Sudan versus ~USD $10,000 for DRC and Kenya. The average cost should be a maximum of USD $10,000[18] to guarantee the sustainability of the activity and to more easily mobilize resources. In Kenya, the majority of SMART surveys cost roughly USD $10,000, but this budget is sometimes surpassed by far in counties that are difficult to access and/or when the counties are subdivided into several strata/livelihood zones; ▪ According to the UNICEF Cameroon and DRC offices, the funds allocated to conducting SMART surveys are constantly being cut, resulting in greater difficulties securing funds to conduct these surveys; ▪ The security conditions and cost of transportation used during data collection contribute to the sharp increase in SMART survey budgets in South Sudan. The crash of the South Sudanese pound against the US dollar also has contributed to this sharp increase in the survey budget since the crisis. Through the NIWG and UNICEF, South Sudan is currently reviewing the budget of the latest SMART surveys conducted by parnters to determine the average cost of SMART surveys and think about how this could be improved.

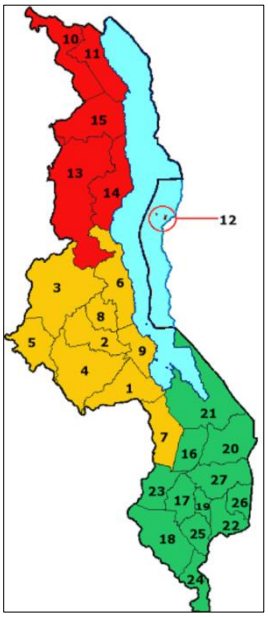
[18] Source: UNICEF WCARO

Activities	*Lessons learned*
Integration of SMART survey results in nutrition information systems	**Strengths** ▪ The establishment of a nutrition information working group significantly contributes to strengthening nutrition information systems; ▪ The quality of the data collected through surveys that used the SMART Methodology correctly contributed to the development of a nutrition component in different information and/or early warning systems; ▪ Triangulation of data from SMART surveys with food security data and routine data (nutrition information systems, IPC, EWS, etc.). **Needs improvement** ▪ Need to strengthen nutrition information systems for better triangulation between routine, screening and nutritional assessment data; ▪ Need to strengthen the capacities of SNSAP and PRONANUT in the DRC in terms of the speed of conducting SMART surveys, the analysis of results and dissemination of information to the different stakeholders to enhance the effectiveness of the early warning system, which is crucial in emergency situations. This would avoid having some NGOs carry out screening because of a lack of up-to-date data for their area of intervention.
Use of SMART survey results	**Strengths** ▪ The results of SMART surveys serve as a benchmark to calculate the expected number of acutely malnourished children to be supported; ▪ The results of SMART surveys are used to assess the impact of nutrition programs (survey at the start and end of nutrition interventions), redirect nutrition strategies and action plans and to identify priority areas for the implementation of nutrition interventions; ▪ Use of results as an advocacy tool to raise funds for nutrition; ▪ In a crisis, SMART survey results can strengthen/redirect the response to needs, assess the effectiveness of nutrition programs, and/or inform national early warning systems to identify/declare an emergency; ▪ In Cameroon, Kenya and, depending on the survey, in South Sudan and the DRC, data on women of childbearing age are collected, thereby helping to highlight the nutritional transition underway in developing nations. **Needs improvement** ▪ Need for updated nutrition data for the development of future nutrition action plans (Madagascar).

5. Countries in Category 3

5.1 Malawi

5.1.1 Background and nutrition situation



Background

Malawi is located in southern Africa between Mozambique, Zambia and Tanzania. This landlocked nation is bathed by Lake Malawi, the third largest lake in Africa, covering about a fifth of the country's land area. Malawi's population is over 16 million and it has one of the highest rates of population growth in Africa, with more than 3% per year. The country ranks 173rd class out of 188 countries according to the UNDP HDI for 2015, a spot the country has held for more than 5 years.

Since 2012, the country has suffered several economic shocks contributing to a significant increase in the cost of living. Malawi's economy is considered one of the least efficient in the world according to the 2014-2015 Global Competitiveness Report. The quality of social services has also declined sharply in recent years with the suspension of aid from donors following the financial scandals of 2013 and 2014.

Malawian farms are generally small and densely cultivated, leading to over-farming and land degradation in productivity. Over 80% of Malawians live off of farming. They own an average of 0.23 hectares of arable land, which is well below the average of 0.40 hectares for Sub-Saharan Africa. Thus, the population is mainly dependent on farming for its livelihood, and natural disasters such as flooding and droughts that recurrently affect the country worsen an already precarious situation for the most vulnerable households. Added to this is a high prevalence of HIV/AIDS, estimated at 11% - the ninth highest prevalence rate in the world. Malawi is also dealing with a steady influx of refugees, mainly from the DRC, Rwanda and Burundi.

Malawi is divided administratively into three regions, each subdivided into districts. There are 27 districts in Malawi.

Nutrition situation

Data from the latest national survey, i.e. the 2013-2014 MICS, presented in Figure 22 opposite, shows a low GAM prevalence of 3.8%, "acceptable" according to the WHO classification (GAM <5%). Severe acute malnutrition meanwhile had a prevalence of 1.1%.

Chronic malnutrition prevalence is itself alarming, with 42.4% of children under 5 having stunting, 16.3% of which is in its most severe form. The underweight prevalence was 16.7%.

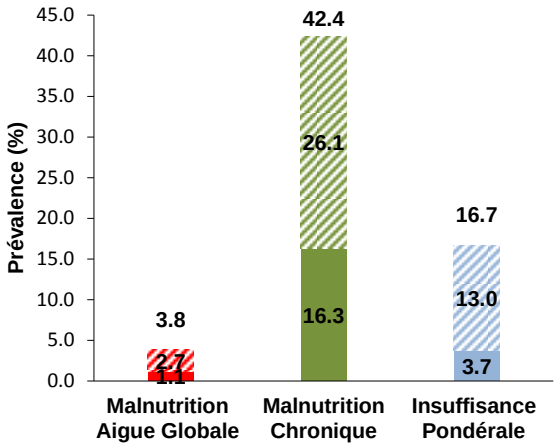


Figure 22: Nutritional status of children under the age of 5 in Malawi (2013-14 MICS survey, WHO 2006 Growth Standards)

As regards the trend in the nutritional status of children in Malawi over the last 20 years (Figure 23), it is noted that chronic malnutrition decreased only slightly between 1992 and 2013-14, from 55.8% to 42.4%.

The stunting prevalence still remains above the "critical" threshold of 40%. Since the mid 2000s, the prevalence of acute malnutrition has dropped below the 5% threshold nationally. Underweight decreased by 8% between 1992 and 2013-14.

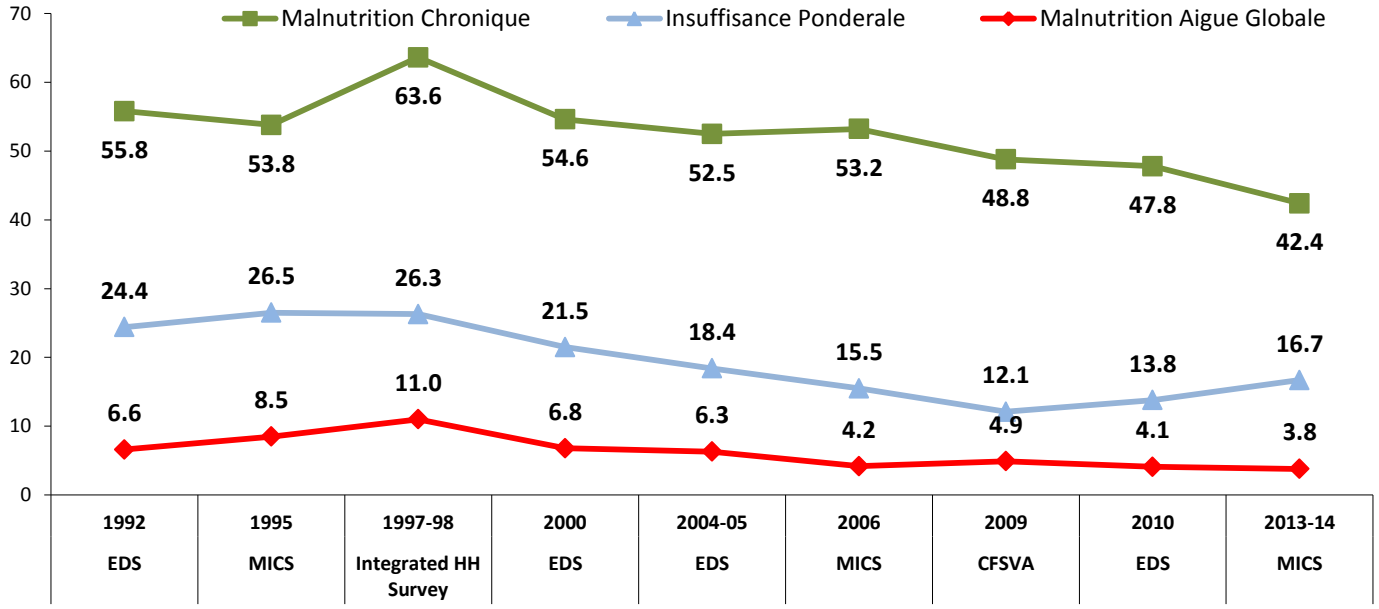


Figure 23: Trends in malnutrition prevalence in Malawi between 1992 and 2014 (WHO 2006 Growth Standards)

5.1.2 Introduction of the SMART Methodology in Malawi

National training on the SMART Methodology intended for nutrition survey leaders was organized by UNICEF and ACF-Canada in April 2015, thereby training 15 people. Two people from the Ministry of Health, four people from the Department of Nutrition, HIV and AIDS (DNHA) and two people from the Ministry of Agriculture were trained on the government side. In addition, four people from the country's universities (University of Malawi and LUANAR University) and some nutrition partners (UNICEF, CWW, WorldVision) were also trained. These people were subsequently involved in the implementation of SMART surveys in areas affected by the floods of January 2015. In February 2016, three other people from Malawi received SMART survey coordinator training. One person from the Ministry of Health, one person from the DNHA and the UNICEF Malawi Nutrition Specialist participated in regional training organized by ACF-Canada in Nairobi.

Before starting to use the SMART Methodology in 2015, nutrition surveys in Malawi used so-called 30-by-30 sampling, i.e. 30 clusters of 30 households or 30 children, as recommended by the national protocol for the implementation of nutritional surveys developed in 2002. The ENA software has been used since 2012 for the selection of clusters to be surveyed.

5.1.3 SMART nutrition surveys conducted between 2013 and 2015

Since 2005, food and nutrition assessments have been conducted by the Malawi Vulnerability Assessment Committee (MVAC), in collaboration with these partners, including the Department of Nutrition, HIV and AIDS (DNHA), LUANAR University, Bunda College, the National Statistics Office (NSO), UNICEF, WFP, FAO and a few NGOs.

MVAC surveys collect indicators on food security, nutrition (malnutrition prevalence, IYCF practices, vitamin A supplementation), health (immunization against measles, nutritional programs coverage) and sometimes water, hygiene and sanitation. They are representative of the livelihood zones. Depending on the year, MVAC assessments are coupled or associated with CFSVA or EFSA surveys. These surveys are implemented by WFP and the National Statistics Office (NSO) in collaboration with MVAC and other partners (2009, 2012, 2013 and 2014).

In January 2015, Malawi was hit by heavy flooding affecting a total of 16 districts in the country, particularly those of the southern region of Malawi. The floods caused extensive damage, affected more than one

million people and displaced approximately 230,000 people, leading the government to declare an emergency. The government and its development partners implemented a multisector response in the areas affected by the flooding. Given the gravity of the situation and the alleged increased vulnerability of affected populations, MVAC surveys using the SMART Methodology were therefore conducted in June 2015 in the affected areas to assess the impact of the multisector response to these populations, and thus possibly reorient and better plan nutrition responses as well as interventions in other sectors (food security, water and sanitation, etc.). The implementation of this type of survey was supported by UNICEF.

The MVAC SMART surveys were coordinated and implemented by members of LUANAR University in collaboration with the Ministry of Health through the Department of Nutrition, HIV and AIDS (DNHA) and the Nutrition Cluster.
A Steering Committee was established to conduct these surveys. The survey Steering Committee included the following institutions:

- ✓ LUANAR University
- ✓ Department of Nutrition, HIV and AIDS (DNHA)
- ✓ National Statistics Office (NSO)
- ✓ UNICEF Malawi, WFP, World Vision
- ✓ Ministry of Agriculture and Food Security

Table 19 below summarizes the different activities that were carried out during the implementation of the MVAC SMART surveys in Malawi in 2015 and early 2016, and the roles and responsibilities of each of the stakeholders involved in the planning, training, data collection, analysis and final reporting processes, and at the time of dissemination of results.

Table 19: Summary of different activities involved in the implementation of SMART surveys conducted in 2015 and 2016, and roles and responsibilities of government and nutrition partners

Steps	*Activities*	*Person(s) responsible*
Planning	✓ Development of the survey protocol, budget and training and collection tools ✓ Sampling (selection of clusters to be enumerated and printing of EA maps) ✓ Logistical preparation for training, data collection and entry/analysis of the data collected ✓ Identification of enumerators and supervisors ✓ Responsible for anthropometric equipment (scales and height boards)	NSO DNHA
Training	✓ SMART Methodology training (6 days)	✓ ACF-Canada ✓ Ministry of Health, DNHA, Ministry of Agriculture, Malawi and LUANAR Universities, UNICEF, CWW, WorldVision (2015 and 2016 participants)
	✓ Training of enumerators and team leaders and data entry operators (2) (7 days) ✓ Standardization test ✓ ENA software training ✓ Pre-survey day ✓ Selection of enumerators based on the results of the pre- and post-tests and the standardization test	✓ Participants from the SMART Methodology training (trainers) ✓ Participants selected by LUANAR from within their pool of enumerators
Data Collection	<u>Data collection:</u> ✓ 1 day per cluster: - Census of households within the EA to enumerate and selection of households to be surveyed (simple random) (2015)	✓ Enumerators and Supervisors ✓ 1 team leader and 2 measurers per team ✓ NSO data entry operators

Steps	*Activities*	*Person(s) responsible*
	- Use of household lists developed during the data collection of the 2016 DHS and pre-selection of households to be surveyed (simple random) (2016) - Data Collection - Review, entry and double-entry of data in ENA	
	Field supervision: ✓ Supervision of survey teams	✓ Survey managers (LUANAR, Ministry Health and UNICEF) ✓ Supervisors (DNHA, WorldVision) ✓ 1 supervisor for 2 teams
	Awareness-raising and Communication ✓ Awareness-raising/communication around the survey with administrative and health authorities and the population (letters) ✓ Facilitating the introduction of teams in districts	✓ Information cascaded down from DNHA ✓ District Commissioners
Data Entry & Analysis	✓ Use of ENA and EPI Data software for nutrition data	✓ LUANAR
Writing of the final report	✓ Writing of a preliminary report ✓ Writing of the final report	✓ LUANAR
Dissemination of Results	✓ Presentation of preliminary results to the Nutrition Cluster and MVAC ✓ Final report circulated to all nutrition partners and in the surveyed districts	✓ LUANAR ✓ Nutrition Cluster ✓ MVAC ✓ District Commissioners

In early 2016, a second series of SMART surveys was conducted in the 7 livelihood zones, representing a total of 25 districts. This series of surveys was justified following the results of the MVAC assessment reporting that about 2.8 million people were vulnerable to food insecurity between October 2015 and March 2016. The food crisis is mainly due to the flooding in January 2015 followed by a drought affecting crops. Survey coverage was not national since three districts were excluded because they did not have a food insecurity issue.

Table 20 below summarizes the survey period, representation, indicators and cost, as well as a cost estimate and the different financial partners of SMART surveys conducted in Malawi in 2015 and 2016.

Table 20: Survey period, representation, indicators, cost and funding of SMART surveys conducted in Malawi between 2015 and 2016

	SMART Survey June/July 2015	***SMART Survey March-May 2016***
Survey period	Harvest period	Harvest period
Representation	→5 Livelihood Zones comprising 16 districts → 16 districts affected by floods	→7 Livelihood Zones comprising 28 districts →25 districts facing food insecurity following flooding, drought and poor harvests → the 3 districts not in a food insecurity situation were excluded

	SMART Survey June/July 2015	*SMART Survey March-May 2016*
Acute Malnutrition	X	X
Chronic Malnutrition	X	X
Underweight	X	X
IYCF Practices	X	
Vaccination (measles)	X	X
Vitamin A Supplementation	X	X
Food security at the household level	X	
Water and Sanitation	X	X
Morbidity (fever, diarrhea)	X	X
Funding*	UNICEF	DFID
Estimated Total Cost (USD)*	**~ USD $18,000**	**~ USD $197,000**

X: Indicator included; *Source: UNICEF Malawi

Budget and funding
The SMART surveys of 2015 and 2016 were funded by UNICEF and DFID. Based on a series of surveys in 2016 that almost completely covers the territory, the average cost per stratum or livelihood zone is around USD $21,000. This average cost does not include the cost of recruiting a SMART consultant (2015 SMART training participant) of approximately USD $50,000.

UNICEF financed purchasing of the anthropometric equipment used for these surveys (Seca scales and Shorr height boards - UNICEF Inputs Division). The equipment is stored at the DNHA.

5.1.4 Nutrition information systems in Malawi and SMART Methodology

Malawi has the following nutrition information systems:

Malawi Vulnerability Assessment Committee - MVAC
Evaluations are conducted every year from April to November by the MVAC, which comprises members of the government, UN agencies and NGOs. These surveys generally include the collection of food security and nutrition indicators and are part of the routine monitoring of the food and nutrition situation. These surveys are representative of the livelihood zones. MVAC surveys adopted the SMART Methodology in 2015 and 2016 while keeping the same representation as the previous MVAC surveys, namely livelihood zones, in order to also integrate the results into the IPC analysis.

Integrated Food Security Phase Classification – IPC
The IPC was introduced in southern Africa in February 2008. The event was hosted by the Regional Vulnerability Assessment Committee (RVAC). A Technical Working Group (TWG) was established in 2009 within the Southern African Development Community (SADC). This group was responsible for coordinating the IPC activities in the region. Outreach activities were conducted, and four countries requested support in deploying the IPC, including Malawi. In December 2014, IPC training including an IPC analysis of acute food security was organized, thereby training the TWG for Malawi, responsible for the implementation of the IPC analysis. The Malawi TWG is composed of MVAC members. IPC analyses use the results from the SMART MVAC surveys and other nutrition and food security surveys conducted by MVAC (EFSA, CFSVA).

Nutrition Information System (NIS)
This system is currently under development; however, routine data from acute malnutrition support programs are cross-referenced with the results of SMART MVAC assessments.

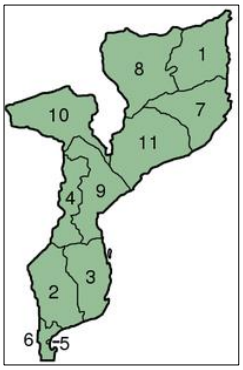
5.1.5 Dissemination and use of SMART survey results

Nutrition information and food security data are currently triangulated via the SMART MVAC nutrition and food security assessments, CFSVA and EFSA surveys, IPC analyses and routine data. Development of a health and nutrition information system should help to triangulate more nutrition information in the future. SMART nutrition and food security assessments facilitate fundraising, monitoring of the situation in the most affected districts and prioritization of interventions.

In March 2011, Malawi joined the SUN movement. Malawi then set up a National Nutrition Committee (NNC) whose main function was to fundraise and support the implementation of interventions in line with the country's nutrition policy and strategic plans. The DNHA is responsible for developing the nutrition agenda and multisector coordination. Currently, nutrition data for the districts (acute and chronic malnutrition prevalence, IYCF practices, etc.) come only from national surveys such as the MICS or DHS. Therefore, these data are used to calculate the expected number of acutely malnourished children to be supported.

5.2 Mozambique

5.2.1 Background and nutrition situation

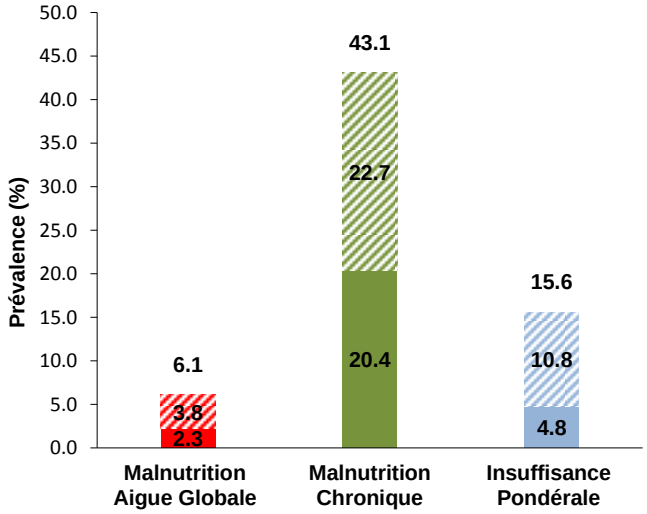


Background

Mozambique is located on the southeast coast of Africa. The destructive civil war that tore the country apart for more than 16 years ended in 1992. Two decades of post-war peace and stability, however, have enabled Mozambique to recover socio-economically. In 2015, Mozambique was ranked 180th out of 188 countries on the HDI classification, despite an average annual GDP growth of more than 7% over the past two decades. The increase in GDP came mainly from the construction, transportation and communications sectors. This rapid growth has not yet significantly reduced poverty. It is estimated that 60% of Mozambique's population lives below the poverty line.

Small-scale farming is the basis of agricultural production in Mozambique and is an important source of income for most rural households, particularly women. Considered to be one of the most disaster-prone countries in the world, Mozambique is highly vulnerable to extreme weather conditions. While the South and Central regions are regularly prone to drought, floods occur every two to three years along major river basins and in poorly drained urban areas. Over 60% of the population lives in the coastal areas most vulnerable to sudden disasters such as cyclones, storms and floods. Besides their unsound means of subsistence, climate shocks destroy infrastructure and limit economic growth. The impact on the country's development is significant, especially on efforts to eradicate extreme poverty and hunger. In 2014, floods in February-March caused damage to infrastructure and farmland in the Incomati River basin and the Central and Northern provinces. During the first quarter of 2015, excessive rains again caused damage and population displacement in Mozambique's Central and Northern provinces, while the Central and Southern provinces suffer from a persistent lack of rainfall in the most critical period of the growing season, causing crop losses. Nearly 34% of the population is in a situation of chronic food insecurity. These problems are compounded by the high prevalence of HIV/AIDS (10.8%). Currently, Mozambique takes in approximately 15,000 refugees, most of who are from the DRC, Burundi, Rwanda and Somalia. Of these, more than 11,000 live in the Maratane camp, the country's only camp, located in the province of Nampula.
Mozambique is divided administratively into 10 provinces. The capital Maputo is also a province. Each province is divided into districts. There are 140 districts in Mozambique. The districts are further divided into administrative centres and then towns.

Nutrition situation



The nutritional status of children under 5 years in Mozambique is shown in Figure 24 opposite. According to the 2011 DHS survey, the national prevalence of GAM is 6.1% and the national prevalence of SAM is 2.3%. These acute malnutrition rates mean the country's situation is "precarious" according to the WHO classification. Chronic malnutrition prevalence is above the critical threshold of 40% nationally (43.1%), including over 20% of children under 5 affected by severe chronic malnutrition. The underweight prevalence was 15.6%.

Figure 24: Nutritional status of children under the age of 5 in Mozambique (2011 DHS survey, WHO 2006 Growth Standards)

The trends in malnutrition prevalence in Mozambique between 1995 and 2011 (Figure 25 below) show an acute malnutrition prevalence oscillating between 4% and 6% in recent years. The stunting prevalence has been reduced by a third, dropping from 59.9% in 1995 to 43.1% in 2011. Underweight prevalence dropped steadily between 1997 and 2011 and now sits at around 15%.

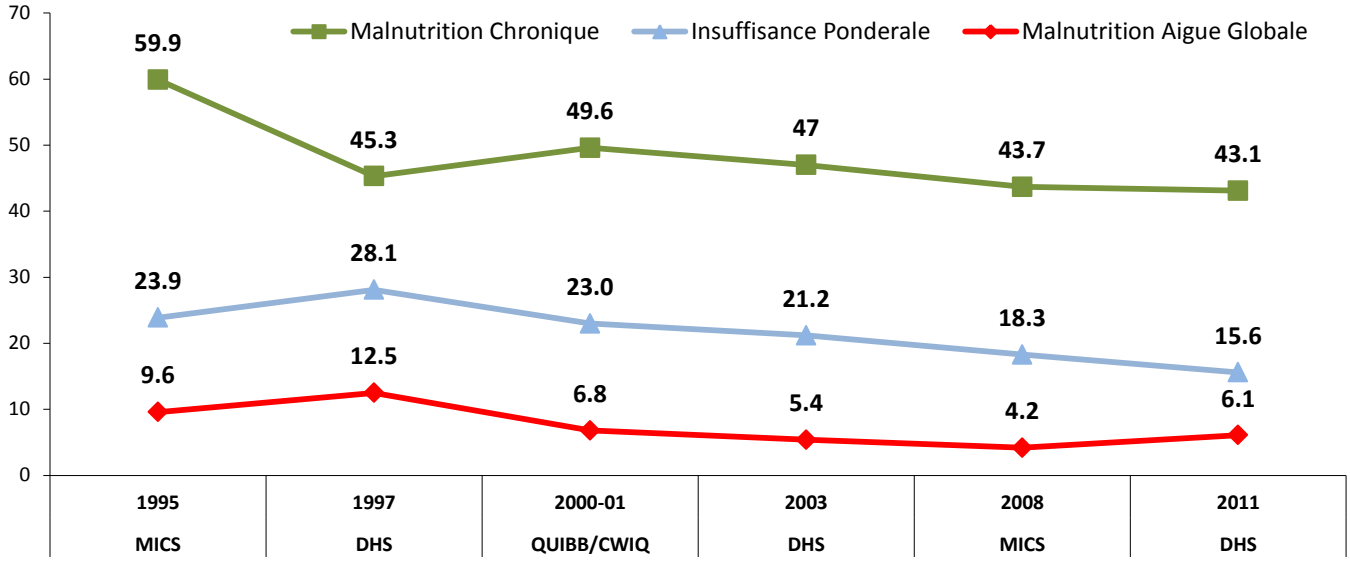


Figure 25: Trends in malnutrition prevalence in Mozambique between 1995 and 2011 (WHO 2006 Growth Standards)

5.2.2 Introduction of the SMART Methodology in Mozambique

Some SMART nutrition surveys in Mozambique are carried out by NGOs (Concern, Save the Children). These are localized SMART surveys in some districts. At present, no SMART Methodology training has taken place in Mozambique.

That said, to strengthen and improve the nutrition information system and enhance nutrition surveillance in Mozambique, UNICEF and its partners (government, UN agencies, NGOs) are currently conducting study and advocacy activities to have SMART surveys implemented at the provincial and possibly district level. The planning of SMART surveys would also be accompanied by a SMART capacity-building project for members of government involved in nutrition surveys, including the Department of Nutrition in the Ministry of Health, the Technical Secretariat for Food Security and Nutrition (SETSAN) in the Ministry of Agriculture and the National Institute of Statistics (INS), to target government ownership of the implementation and coordination of this type of survey. The capacities of NGOs conducting nutrition surveys in their area of intervention (Concern, Save The Children) could also be strengthened.

The idea would be to plan to start SMART surveys in the districts or provinces with the highest prevalence of chronic malnutrition. These surveys could be conducted annually or every two years, and would yield updated data to monitor implementation of the "multisector plan for reducing chronic malnutrition". This plan was developed by all humanitarian partners and the government when Mozambique joined the SUN movement in 2011. These surveys would fit well into the overall project to improve the country's nutrition information system rather than develop an early warning system.

For this capacity-building project to be possible, SMART tools (training tools and survey tools) will have to be developed in Portuguese. UNICEF Mozambique has already expressed this issue to ACF-Canada. As the institutional and technical capacities for implementation of nutrition surveys are currently quite low among the Ministry of Health, the INS and the different nutrition partners, UNICEF might also consider recruiting a SMART survey consultant to provide technical support.

5.2.3 SMART nutrition surveys conducted between 2013 and 2015

Several types of assessments are conducted in Mozambique to assess the country's nutrition situation.

National surveys
MICS or DHS surveys are carried out every 3-5 years by the Government of Mozambique in collaboration with development partners. The results of these surveys yield national and provincial nutritional data. The surveys sometimes group together several components (Water and Sanitation, Nutrition, Food Security, HIV/AIDS, etc.) often related to the implementation of an action plan (baseline and final survey).

Rapid nutrition and food security assessment or Comprehensive Food Security and Vulnerability Analysis (CFSVA)
SETSAN is generally responsible for the implementation of the nutrition and food security agenda in Mozambique. Thus, food security assessments are conducted by SETSAN in collaboration with its partners in the Food Security and Nutrition Working Group (FSNWG). This working group is composed of the FAO and WFP for technical support as well as the Vulnerability Assessment Committee (VAC) and other development partners (UN agencies, FEWS NET, USAID, NGOs). These assessments are carried out in the provinces and districts most affected by drought and floods as well as those most affected by food insecurity. These assessments are usually held twice a year, during the lean season and post-harvest period.

In May 2015, an assessment was conducted in all provinces affected by the drought or floods, except the city of Maputo. The results indicated that in the provinces of Gaza and Inhambane, 138,000 people (including 72,000 women) were in a situation of acute food insecurity, and 903,000 additional people were at high risk of food insecurity because of the lean season starting in September 2015, the next expected harvest in March 2016, and food production, food reserves and income that are generally not sufficient to produce adequate food levels in the most vulnerable households. The quantitative survey was designed to collect representative data for the provinces, taking into account the division into three groups of the analyzed provinces: the districts affected by floods, districts affected by drought, and districts where rainfall was normal.

The lack of rain in 2015 greatly affected the 2015-2016 crop year in the South and in some districts in the country's Central region. The assessment of the food security situation in November 2015 indicated that there were 176,139 people in situations of acute food insecurity in the country. A nutrition component was integrated into the assessment by adding screening data collected by UNICEF during national children's health days.

In March 2016, a food security and nutrition assessment was conducted in the provinces affected by the drought in Central and Southern Mozambique. This survey was representative of the provincial level. The survey covered seven provinces (Tete, Manica, Sofala, Inhambane, Gaza, Maputo and Zambezia), and the purpose was to update the food security and nutrition situation. The results of the assessment indicate that food security has deteriorated since November 2015. Approximately 1.5 million people live with acute food insecurity. With regard to nutrition indicators, the anthropometric measurements (WUAC) of children under 5 and of pregnant and lactating women were collected. Indeed, as part of the response to El Niño, responsible for the drought and consequently low harvests, UNICEF conducts active screening of malnourished children in the districts of the surveyed provinces. These data were subsequently integrated into the food security assessment of March-April 2016. A review of the quality of the data collected by FAO, however, reported quality issues regarding children's age and MUAC measurements (digital preferences).

UNICEF appealed to SETSAN and its partners to integrate nutrition indicators (anthropometry and IYCF practices) into these assessments, possibly pending the implementation of SMART surveys, and to enhance the quality of the data collected (anthropometry, age, IYCF practices). At present, nutrition indicators are not yet systematically integrated into these assessments. These are the only assessments that make it possible to obtain representative data for the districts.

5.2.4 Nutrition information systems in Mozambique

Mozambique has the following nutrition information systems:

Health Information System (HIS)
This system managed by the Ministry of Health has only very few nutrition indicators (routine data) and needs to be strengthened in order to obtain monthly data to assess the effectiveness of malnutrition support programs and basic nutrition services, and to assess needs. Currently, no situational analysis is conducted with the data collected. A technical support project is currently underway in the Ministry of Health (national consultant) to improve the quality of the information collected (collection tools, reporting, information flow and frequency). UNICEF is also lobbying the Department of Nutrition of the Ministry of Health and SETSAN to increase the number of nutrition indicators in the HIS.

WHO Sentinel Sites
Mid-upper arm circumference (MUAC) is one nutrition data collected at WHO sentinel sites. This data is included in the WHO weekly Surveillance of Epidemic-prone Infectious Diseases (EPID) system. A study is also underway to integrate the data from this system into the HIS.

Active screening
UNICEF holds acute malnutrition screening sessions using the MUAC of children aged 6 to 59 months during national children's health days and during food security assessments, primarily to enhance data for the nutrition component (March-April 2016 assessment).

Integrated Food Security Phase Classification – IPC
The IPC was introduced in southern Africa in February 2008. Outreach activities were conducted throughout the region and four countries have requested support in deploying the IPC, including Mozambique. Mozambique is in the countr-wide training and initial analysis phase. A pilot IPC analysis of chronic food insecurity was first conducted without much success. In June 2015, SETSAN, with the support of FAO, conducted an IPC analysis of acute food insecurity. Preparations are underway to conduct an IPC analysis of acute food insecurity in May 2016. The results of this exercise should help to provide additional information about the severity of acute food insecurity based on the available information to date. The IPC analysis will be coordinated by SETSAN with the participation of key partners, including WFP, FAO, FEWS NET, Save the Children, World Vision, OXFAM, Concern and others. Until then, the nutrition component is not included in these analyses. The latest IPC analyses conducted by FEWS NET seem to show a deterioration of the food and nutrition situation for the next few months (Figure 26 opposite).

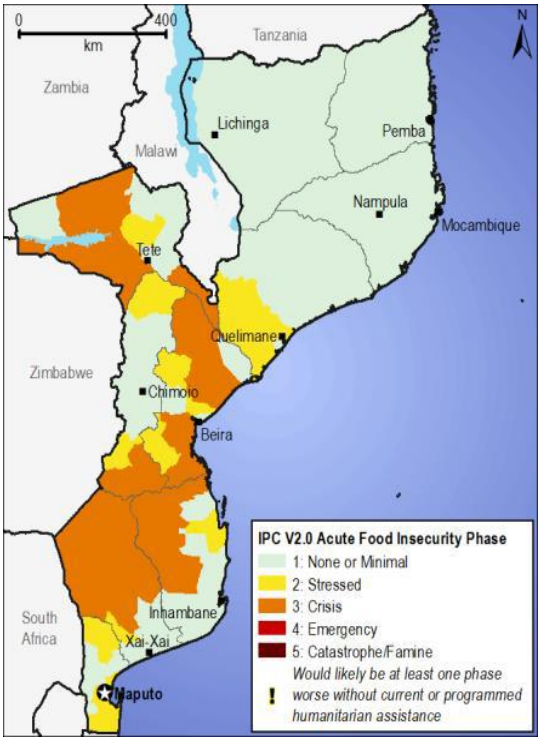


Figure 26: Updated IPC ranking of acute food insecurity for the period April-May 2016

5.2.5 Dissemination and use of nutrition information

Nutrition information and food security data is currently triangulated only in rapid nutrition and food security assessments. At present, nutrition data from SETSAN food security and nutrition assessments are the only data used in the implementation of targeted nutrition interventions in the areas most affected by food insecurity and malnutrition. The problems of data quality and lack of nutrition information in general lead to difficulties in terms of prioritization of areas of intervention and decision-making.

Mozambique joined the SUN Movement in 2011. When it joined, Mozambique had already included the reduction of chronic malnutrition in the objectives and priorities of its Government Five-Year Plan (2010-2014) and Poverty Reduction Strategy Paper (2011-2014) where chronic malnutrition is identified as an impact indicator. Mozambique also adopted the "Multisector Action Plan to Reduce Chronic Malnutrition"

which is coordinated by SETSAN with support from all development partners. Currently, the national and provincial prevalence of chronic malnutrition comes only from national surveys such as MICS or DHS.

The SMART capacity-building project for members of government, the implementation of SMART surveys and improving the HIS system and the integration of nutrition indicators in the various food security assessments should enable the various humanitarian players in Mozambique to better triangulate nutrition information and thereby enable better coordination and planning of nutrition interventions. In the long term, this improved nutrition information system could also serve as an early warning system.

5.3 Summary of countries in Category 3

The table below presents the lessons learned for the countries in Category 3. These are lessons learned from the analysis of the secondary information collected, and are based on discussions with the various contributors from Mozambique and Malawi.

Activities	*Lessons learned*
Mechanisms of coordination between government and partners in the implementation of SMART surveys	**Strengths** ▪ SMART surveys coordinated jointly by the government (LUANAR, DNHA, MVAC, NSO, etc.) and its partenrs (UNICEF, WFP, Worldvision) (Malawi); ▪ Support from UNICEF (technical and financial support, anthropometric equipment) and ACF-Canada (training) is essential to the implementation of the first SMART surveys (Malawi). **Needs improvement** ▪ No SMART trainings are planned to build capacity for members of government and different partners in countries with low SMART survey technical capacity and, consequently, weaker SMART survey coordination mechanisms (Malawi and Mozambique); ▪ No SMART Methodology awareness sessions have been conducted (Mozambique).
Frequency and implementation period of SMART surveys	**Strengths** ▪ Implementation of the first SMART surveys in emergency situations to get an updated and reliable picture of the nutrition situation (Malawi); ▪ Use of SMART Methodology in food safety and nutrition assessments conducted every six months (Malawi). **Needs improvement** ▪ Reflection and advocacy being carried out by UNICEF Mozambique and its partners to implement SMART surveys in the provinces (or districts) that could be conducted every year or every two years, in the areas most affected by chronic malnutrition first.
Representation of SMART surveys	**Strengths** ▪ SMART surveys carried out in areas affected by flooding (Malawi). **Needs improvement** ▪ SMART surveys implemented in livelihood zones (group of districts affected by flooding) do not make it possible to obtain representative data for the districts (second administrative level), namely that are comparable with data from national MICS or DHS surveys (Malawi).
SMART survey	**Strengths**

Activities	*Lessons learned*
financial partners and budget	▪ Use of quality anthropometric equipment supplied by UNICEF. **Needs improvement** ▪ The average cost per stratum of a SMART survey in Malawi remains relatively high at around USD $21,000, not counting costs related to recruiting a consultant. The average cost per stratum should be around a maximum of USD $10,000[19]
Integration of SMART survey results in nutrition information systems	**Strengths** ▪ Triangulation of data from SMART NNS with food security data (MVAC and IPC) and routine data (HIS) (Malawi); **Needs improvement** ▪ Need to strengthen nutrition information systems for better triangulation between routine, screening and nutritional assessment data (Malawi and Mozambique).
Use of SMART survey results	**Strengths** ▪ The results of SMART surveys are used to assess the impact of nutrition programs, redirect nutrition strategies and action plans and to identify priority areas for the implementation of nutrition interventions (Malawi); ▪ Use of results as an advocacy tool to raise funds for nutrition (Malawi); ▪ In a crisis, SMART survey results can strengthen/redirect that response to needs and evaluate the impact of nutrition programs, or declare an emergency (Malawi). **Needs improvement** ▪ Need for updated nutrition data for the development of future nutrition action plans (Malawi, Mozambique).

[19] UNICEF WCARO

5. Conclusions and Recommendations

The expanding use of the SMART Methodology in Sub-Saharan Africa in recent years (32 countries out of a total 45 in Sub-Saharan Africa used the SMART Methdology between 2013 and 2015) have strongly contributed to an increase in number of timely nutrition surveys carried out in the region and to obtain updated nutrition data for surveillance of the nutritional situation.

Among countries studied in West and Central Africa region (WCAR) and East and Southern Africa region (ESAR), SMART surveys are conducted to differing degrees: in some countries on a regular basis and in others more sporadic or none.

Among the countries studied in WCAR, the SMART Methodology has been used to carry out National Nutrition Surveys (NNS). These surveys are in connection with seasonal malnutrition and can be carried out and yield results relatively fast. The NNS are coordinated and implemented by a national technical committee that includes members of government as well as technical and financial partners. Regional or small-scale SMART surveys are additionally conducted when there is a humanitarian and/or programming need.

Among the countries studied in ESAR, the SMART Methodology has been used to conduct regional or smaller-scale surveys. These surveys are coordinated by a nutritional information technical group, and their objective is to assess the severity of a humanitarian crisis and/or as part of nutrition situation surveillance.

The implementation of SMART nutrition surveys has helped countries in both regions to achieve consensus on their nutrition situation, among sector partners, through the harmonization of rapid nutrition survey methodologies. Final reports/results are validated by technical committees (WCAR) or nutritional information technical group (ESAR) and are well accepted and used by partners and governments. In countries like Kenya and South Sudan, standard SMART tools and guidelines have been developed to guide the preparation of survey protocols. In other countries, Niger and Kenya, the SMART Methodology has been incorporated into national nutrition protocols.

Overall, the results of SMART nutrition surveys are being used in the context of nutritional programming, in particular for planning of CMAM programmes (along with other sources of nutrition information), whether in development contexts (e.g. Senegal, Mali) or emergency situations (e.g. South Sudan and Northern Cameroon). Furthermore the information gathered through SMART surveys provides information on the possible severity of a nutrition situation (e.g. South Sudan and Northern Cameroon), making it possible to direct the coordination of activities, identify the most vulnerable, and plan and finance logistics and operations. The results of SMART surveys are also used as advocacy tools (eg. Mozambique, DRC, South Sudan, Cameroon, Senegal and Mali) to raise resources for nutrition. They have also been incorporated into various national and regional early warning systems: FEWS NET, *Cadre Harmonisé* [Harmonized Framework] and/or IPC, NICS[20].

The use of SMART methodology has contributed to the strengthening of coordination mechanisms between governments (i.e. Ministry of Health (Nutrition Division), Statistics Institute) and the technical and financial partners (other government institutions, UN agencies, non-governmental organizations) involved in the planning, implementation and results validation/dissemination phases of the SMART surveys. This has been done via several structures: (i) nutrition information working groups (e.g. Kenya and South Sudan); (ii) steering committees (e.g. Mali, Senegal, and Cameroon); (iii) the implementation of a survey results validation process (e.g. Kenya and South Sudan) and/or (iv) the use of survey results with SAPs (e.g DRC).

This report has also identified several areas that need improvement and proposes a series of recommendations for each one:

[20] Famine Early Warning System Network (FEWS NET): http://www.fews.net
Integrated Food Security Phase Classification (IPC): http://www.ipcinfo.org/
Cadre Harmonisé http://www.ipcinfo.org/ipcinfo-countries/afrique-de-louest/fr/
Nutrition Information in Crisis Situations (NICS): http://www.unscn.org/en/publications/nics/

- Only two countries (Kenya and South Sudan), out of the nine included in this report, scheduled regular SMART Methodology training sessions for survey managers to continuously enhance the capacity of members responsible for the implementation of SMART NNS. Given the large turnover of human resources that these regions experience, it would be advisable, for countries that regularly implement SMART NNS, to develop a mapping of existing capacities and a training plan to enable government officials and key partners to continuosly implement SMART NNS autonomously. Countries that conduct SMART surveys have mostly received training in the SMART Methodology (training of trainers, regional and/or national training) organized by ACF Canada.

- Kenya and South Sudan developed standardized and harmonized toolkits to implement SMART surveys, but not at national level. The rest of the countries that implement SMART NNS developed their own tools, with or without the help of an external SMART consultant, and validated them through the SMART technical groups or steering committees established at the national level. It would be important to conduct a comparative assesment of these tools to harmonise them and develop a standardized toolbox for the implementation of SMART NNS. This toolbox could be accompanied by a planning sheet for SMART NNS preparation, to be used as a guide for the survey coordination team and/or survey consultant/coordinator. This guide could contain all the required steps in conducting a nutrition survey at a national level using the SMART method, from preparation up to final reporting, and all the different tools required to carry out a SMART NNS.

- This report has also illustrated the key role played by UNICEF as regards the carrying out of SMART surveys in Sub-Saharan Africa. UNICEF provides significant technical support by recruiting SMART survey consultants when the implementation capacities in governments and/or NGOs remain weak and/or through technical support from UNICEF nutritionists in the country offices and regional offices. UNICEF supplies anthropometric equipment and provides financial support for the implementation of SMART surveys either to the government or to other nutrition partners (NGOs). Some of the UNICEF country staff interviewed for the preparation of this report mentioned greater difficulties in raising and securing the funds to carry out SMART surveys, for either SMART NNS or smaller-scale surveys. Some thought will have to be given to the frequency and representation of regional and/or small-scale surveys in order to reduce their associated implementation costs and thereby facilitate the sustainability of the information systems currently in place.

- A more detailed analysis of the existing nutrition information systems, with concrete examples for each country, should be conducted to better inform on the best model to be adopted. Further analysis, using a more complex evaluation design would be essential to assess the added value that the national SMART surveys play in national nutrition information systems, in particular for nutrition advocacy, policy development and nutrition programming.

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Appendices

Appendix 1: List of contributors by country selected for this assessment

	Name	*Position*	*Organization*	*E-mail*
Kenya	Imelda Awino	SMART Regional Coordinator, East Africa	ACF-Canada	iawino@actioncontrelafaim.ca
	Louise Mwirigi	Nutrition Specialist (M&E)	UNICEF Kenya	lmwirigi@unicef.org
	Nahashon Kipruto	Food Security and Nutrition Specialist	ACF Kenya	fsns.ke@acf-internatinal.org
	Lucy Gathigi	Nutritionist	Ministry of Health	lucygathigi@gmail.com
Mali	Anne Leavens	Nutrition Specialist	UNICEF Mali	alaevens@unicef.org
	Facely Camara	Nutrition Consultant	Independent	facelycamara@gmail.com
	Denis Garnier	Nutrition Manager	UNICEF Burkina Faso	dgarnier@unicef.org
Senegal	Aïssata Moussa Abba	Nutrition Specialist	UNICEF Senegal	aabba@unicef.org
	Aïssatou Dioum	Nutrition Specialist	UNICEF Senegal	adioum@unicef.org
Cameroon	Céline Bernier	Nutrition Specialist	UNICEF Cameroon	cbernier@unicef.org
	Damien Pereyra	Nutrition Consultant	Independent	damienpereyra@gmail.com
D.R.C.	Inès Lezama	Nutrition Specialist	UNICEF DRC	Ilezama@unicef.org
	Amina Bangana	Nutrition Specialist (M&E)	UNICEF DRC	aminaabangana@gmail.com
	Theophile Bansimba	Nutrition Specialist	UNICEF DRC	tbansimba@unicef.org
	Virginie Mbombo	Nutrition Specialist (emergency)	UNICEF DRC	vmbombo@unicef.org
South Sudan	Ismaël Kassim	Nutrition Information Manager	UNICEF South Sudan	ikassim@unicef.org
	Imelda Awino	SMART Regional Coordinator, East Africa	ACF-Canada	iawino@actioncontrelafaim.ca
Madagascar	Siméon Nanama	Nutrition Manager	UNICEF Madagascar	snanama@unicef.org
Malawi	Benson Kazembe	Nutrition Specialist	UNICEF Malawi	bzazembe@unicef.org
Mozambique	Mathieu Joyeux	Nutrition Specialist	UNICEF Mozambique	mjoyeux@unicef.org
UNICEF	Patricia Hoorelbeke	Nutrition Specialist	UNICEF WCARO	phoorelbeke@unicef.org
	Sara Gari-Sanchis	Nutrition Specialist (M&E)	UNICEF WCARO	sgarisanchis@unicef.org
	Robert Johnston	Nutrition Specialist	UNICEF WCARO	RoJohnston@unicef.org
	Patrick Codjia	Nutrition Specialist	UNICEF ESARO	pcodjia@unicef.org
ACF-Canada	Victoria Sauveplane	Program Manager	ACF-Canada	vsauveplane@actioncontrelafaim.ca
	Imelda Awino	SMART Regional Coordinator, East Africa	ACF-Canada	iawino@actioncontrelafaim.ca
	Fanny Cassard	Nutrition Consultant	ACF-Canada	fcassard@gmail.com

Appendix 2: Interview generic guideline

Note: Depending on the category of countries selected, interviewees, and secondary information provided by UNICEF, some questions in the interview guide were omitted or contextualized

1- Presentation of the project and objectives

2- Introduction of the SMART Methodology

- Description of the introduction of the SMART methodology in the country.
- When was the first SMART survey (year)? What was the rationale for using this methodology? Who was responsible for implementation?
- Have training courses on SMART methodology been organized? (Dates, leaders / organizers, participants and number of people trained).
- Review of SMART history.
- Interest in SMART methodology awareness sessions or SMART training? Organization of a "recycling" workshop in SMART?

3- Mechanisms for coordination and implementation of SMART surveys

- What are the coordination and implementation mechanisms between the government (Ministry of Health and the Institute of Statistics) and nutrition partners (UN agencies, NGOs, Cluster) when carrying out SMART surveys?
- What is the government's share of autonomy when carrying out surveys?
- To what extent is the Institute of Statistics (and / or Directorate of Nutrition) involved?
- Is there a technical committee or a steering committee or a technical group of nutritional information? If so, description of member / member institutions and roles / responsibilities.
- Is a survey consultant recruited?
- Description of the nutrition survey planning process and rationale for implementation (annual planning meeting, according to CPI analyzes, livelihood zones, emergency context, etc.).
- What is the average duration of the planning phase? What are the roles and responsibilities of each of the partners involved?
- What is the average duration of the implementation period (preparation, training, data collection, analysis and dissemination of results)? What are the roles and responsibilities of each of the partners involved?
- What specific activities are carried out during the planning phase? Who are the persons / institutions responsible for these activities? • What specific activities are carried out during the training phase? Who is responsible for these activities? • Is there a pool of surveyors? How is the recruitment of surveyors carried out?
- Who trains the surveyors / supervisors (agenda and number of days)?
- Are surveyors trained in the use of ENA software?
- What specific activities are carried out during the collection and supervision phase? Who are the persons / institutions responsible for these activities? • Entering data in ENA after the survey day? • Who oversees the collection of data? Supervision visits from partners / government?
- Description of the outreach phase and communication to the survey (government authorities and communities). • What specific activities are carried out during the data entry phase, analysis and drafting of the survey report? Who are the persons / institutions responsible for these activities? Validation workshop?

4- SMART surveys (or nutritional assessments) conducted between 2013 and 2015

- Review of the number of surveys or nutritional assessments conducted between 2013 and 2015.
- Description of the representativeness, the investigation period, the frequency, the context / justification of the implementation, the target population, etc.).
- What are the different types of nutritional evaluation implemented in recent years?
- What surveys or assessments are available to obtain updated data on nutritional status and prevalence of malnutrition?
- What nutrition indicators are collected? What other indicators are collected?

5- Development of a "national protocol" for SMART surveys / Use of standard tools

- Sharing guidelines, standard tools, and sample reports / report examples.
- Coordindation between SMART and MICS / DHS surveys (collaboration on anthropometry training, timing)?
- Workshop on the harmonization of survey tools?

6-.Funding for SMART Surveys

- Average cost of implementing a SMART survey?
- Maximum cost of implementing a SMART survey (difficult access area, insecurity, extended area, etc.)?
- Who are the different financial partners?
- Is UNICEF providing anthropometric equipment for SMART surveys? Who is responsible for anthropometric equipment? • Logistical or financial contribution from other nutrition partners (NGOs)? Are there any difficulties in mobilizing resources for the funding of SMART surveys?

7- Nutrition Information Systems (NIS)

- What are the existing nutritional information systems?
- Is there an early warning system?
- How are routine data (HNIS) collected?
- What are the nutrition indicators currently included in these different information systems?
- Which information systems use the results of SMART surveys (IPC, Harmonized Framework, SAP, others)? Does conducting SMART surveys contribute to strengthening the INS?
- Triangulation of data within different INSs?
- Sharing newsletters

8- Dissemination and use of SMART survey results

- How the results of the surveys are disseminated (meetings of presentations to partners, Cluster level, report, brochure, etc.)?
- Dissemination of results only at central level?
- Consensus on nutritional status through SMART surveys (improved quality of information)?
- Can nutritional surveillance be organized between national DHS / MICS surveys and smaller-scale SMART surveys, or is it preferable to conduct national SMART surveys periodically (for programmatic reasons) annually or bi-annually?
- Are SMART surveys results are used for nutrition programming? How? (Mobilization of funds, calculation of the number of malnourished children to be supported, advocacy, global indicators (MDGs / SDGs), nutrition strategy, monitoring, prioritization, Evaluate the impact of interventions, etc.)?