



Nutrition of women and adolescent girls in humanitarian contexts

Case study: Madagascar

October 2022



Authors

Stephanie V Wrottesley and Brenda Akwanyi

Acknowledgements

We are grateful to the following people in Madagascar for generously giving their time during interviews, for sharing their experiences and for reviewing and approving the final version: Dr. Jonatana Ratsimaitondrazana (Medical Superintendent, Soavinandriana); Razanamanitra Norohanta (Nutrition Officer and multiple micronutrient supplementation (MMS) focal point, Soavinandriana); Fitahiantsoa Andriamasonoro (Midwife Nurse, Soavinandriana Health Centre); Fenosoa Florine (Midwife Nurse, Ambohidanerana Health Centre); Jules Rafalimanantsoa (Director, National Nutrition Office), Dr Andriamihamintsoa Rabenja Ralaimiadiana (Director of Nutrition, Ministry of Public Health); Onjanarindra Razafimalaza, Fatoumata Lankoande and Mathieu Joyeux (UNICEF Madagascar); Razafimahatratra Fanjanomenjanahary, Jonah Andreas Ndriantony and Perrine Loock (Madagascar Nutrition Cluster coordination team); Marieme Diaw, Njaka Ramalanjaona and Javier Rodriguez (World Food Programme Madagascar). We thank all the community health workers and antenatal care clients in Soavinandriana for giving us their time in interviews and focus group discussions.

Thank you also to Philip James (ENN) and Emily Mates (UNICEF) for their review and suggestions. We were able to undertake this work due to the generous support of the Healthy Mothers Healthy Babies (HMHB) Consortium, the Department of Foreign Affairs, Ireland and UNICEF. The ideas, opinions and comments included here are entirely the responsibility of the document's authors and do not necessarily represent or reflect the policies of the donors, nor the views of the key informants. We also thank Terry Nightingale for their design work on the technical briefing paper, on which the design of this document is based.

Design and production: Marten Sealby.

Recommended citation

Stephanie V Wrottesley and Brenda Akwanyi (2022). Nutrition for women and adolescent girls in humanitarian contexts. Case study: Madagascar. ENN: Kidlington, Oxford, UK. October 2022.



Contents

Summary	4	7 Implementation gaps and challenges	22
1 Background	7	7.1 Availability of data for surveillance and programme monitoring	22
2 Methods	8	7.2 Availability and maintenance of funding	22
3 Madagascar context	9	7.3 Supply chain distribution	23
3.1 Humanitarian situation	10	8 Recommendations	24
3.2 Nutrition situation	10	References	26
4 Humanitarian response strategy and coordination	12	Annex 1	27
4.1 Madagascar Nutrition Cluster	13	The multiple micronutrient supplementation (MMS) pilot project in Madagascar	27
5 Nutritional status of women and adolescent girls	15		
6 Nutrition policies and programmes for women and adolescent girls	16		
6.1 National policies and guidelines	16		
6.2 Routine services	17		
6.2.1 Multiple micronutrient supplementation (MMS) pilot project	17		
6.3 Nutrition programming in humanitarian contexts	20		
6.3.1 Nutrition surveillance, assessment, and evaluation	20		
6.3.2 General food distribution (GFD)	20		
6.3.3 Cash distributions	20		
6.3.4 Prevention of malnutrition in pregnant and lactating women and girls (PLW/G)	20		
6.3.5 Ensuring continued access to routine services during crises	21		



Summary

Madagascar: context and humanitarian response

- Over the past two years, Madagascar has experienced its worst drought in 40 years. This has been exacerbated by cyclones, the COVID-19 pandemic and ongoing chronic poverty, particularly in the Grand South (hereafter referred to as the 'Grand Sud').
- Of the 25.6 million people living in Madagascar, approximately 1.6 million have been classified as food insecure and in need of humanitarian assistance.
- The government's National Response Plan was launched in October 2020 and since then, an associated Flash Appeal has called for approximately 219 million USD to target those in need. To date, 57% of the total funds have been received, which includes 40% of the funding required for food and livelihoods services and 38% of that required for nutrition services.
- Nutrition support for women and adolescent girls is integrated into the overall Nutrition Cluster response, led by Madagascar's National Nutrition Office (ONN), under the office of the Prime Minister, with UNICEF acting as co-lead.
- Women and adolescent girls experience high levels of nutritional vulnerability in Madagascar, with over a quarter of women of reproductive age classified as thin and/or anaemic.
- The vulnerability of women and adolescent girls, particularly those who are pregnant or lactating, is exacerbated during humanitarian crises. However, reliable data on their nutritional status is lacking.

Nutrition policies and programmes for women and adolescent girls

- During humanitarian crises, the aim is to maintain national policies and guidelines and, where applicable, expand/extend service implementation. Implementation focuses on providing routine nutrition services (nutrition education, micronutrient supplementation, deworming, anthropometric assessments) for pregnant and lactating women and girls (PLW/G) as part of antenatal care (ANC).
- Prenatal iron and folic acid (IFA) supplementation is currently being implemented nationally except in two districts, where multiple micronutrient supplementation (MMS) is being piloted to inform effective implementation and national scale up, including in areas affected by humanitarian crises.
- Nutrition interventions for adolescent girls focus on IFA supplementation and deworming for girls 9-13 years. However, coverage is low due to a lack of resources, capacity and supplies.
- Routine services are supplemented by additional crisis-specific guidelines that focus on providing general food distributions (GFDs) to vulnerable households and cash distributions to PLW/G and children under five years.
- As part of the prevention programme implemented by Nutrition Cluster partners, led by World Food Programme (WFP), PLW/G in selected villages are targeted with blanket food supplementation (Corn Soy Blend Plus (CSB+) and fortified oil) based on GFD criteria. Nutritionally at-risk PLW/G (mid-upper arm circumference <210 mm) are identified via maternal and obstetric care services for enrolment into the supplementary feeding programme (SFP).
- Non-pregnant women are largely overlooked, both in routine nutrition service provision and during a humanitarian response.

Implementation gaps and challenges

- **Availability of data:** there is a lack of data on the nutritional status of women and adolescent girls, as well as on programmes that target them, particularly in humanitarian contexts.
- **Availability and maintenance of funding:** programmes targeting PLW/G are often the first to be deprioritised when resources are limited.



Photo credit: ©WFP/Jules Bosco Bezaka

While humanitarian crises are generally met with rapid mobilisation of funds, it is essential that an appropriate resource mobilisation strategy is in place prior to, and beyond, a humanitarian response.

- **Supply chain distribution:** establishing and maintaining an effective supply chain is critical to continuity (and extension) of service provision during humanitarian crises. Learnings from the MMS pilot project demonstrate how effective, community-based distribution models can be used to both support continuity of supply chains and to address issues of inaccessibility and remoteness, which are often exacerbated in humanitarian contexts.

Recommendations

- **Strengthen institutional anchoring of nutrition programmes for women and adolescent girls:** this should be prioritised within the Ministry of Public Health (MSANP) and the ONN to ensure the development of nutrition strategies and standards for women and adolescent girls in humanitarian contexts.
- **Ensure relevance of, and commitment to, policies and guidelines that support women's and adolescent girls' nutrition:** continued review and updating of national guidelines according to global recommendations and



Photo credit: ©WFP/Photolibrary

local needs, as well as political commitment to their implementation, is critical to providing adequate support to women and adolescent girls. Progress such as inclusion of MMS in the National Nutrition Action Plan and the upcoming National Multisectoral Plan for Nutrition, as well as inclusion of daily prenatal MMS in the national micronutrient supplementation protocol, should be continued.

- **Leverage linkages with other sectors:** including food security, social protection, health, water, sanitation, and hygiene (WASH) and education.
- **Build capacity:** there is a need to build the capacity of the health system, including upskilling of staff for the provision of regular nutrition support to women and adolescent girls, and to ensure continuity and/or enhancement of services in humanitarian crises.
- **Collect and analyse data:** data on women's and adolescent girls' nutrition is a prerequisite for: understanding the issues and gaps; providing appropriate targeted support; monitoring progress; and advocacy purposes. It is important to sufficiently build the capacity of government and partners to ensure that nutrition information

systems include data on women and adolescent girls, and to institutionalise monitoring and evaluation systems to measure progress.

- **Create and maintain demand for services:** while providing and maintaining accessible, quality nutrition and health services is critical, parallel community-level sensitisation and social and behaviour change communication (SBCC) activities are needed to ensure uptake of, and retention in, services by women and adolescent girls, particularly during humanitarian crises.
- **Deliver inclusive programmes for vulnerable adolescents:** there is a need to develop nutrition interventions and mobilise resources to target vulnerable adolescents, such as pregnant girls and those out-of-school.
- **Ensure gender equality and female empowerment:** as a foundation to improve women's and adolescent girls' nutrition, gender equity must be promoted to empower women around control of resources and assets at household and community levels, and to ensure participation in food production, purchasing and preparation. Communities must also be supported to eradicate gender-based violence, which can increase in times of crisis.



1 Background

In 2013, Emergency Nutrition Network (ENN) published a technical background paper summarising the evidence on maternal nutrition, with a focus on identifying gaps in knowledge related to tackling maternal undernutrition in humanitarian contexts¹. This was updated and expanded in a 2022 technical briefing paper which summarised evidence, policy and programming for women's nutrition, including adolescent and maternal life stages².

The 2022 technical briefing paper identified a particular gap in nutrition research, policy and programming for women and adolescent girls in humanitarian contexts, with humanitarian responses often focusing on mitigating the risk of mortality for children under five years of age. To further elucidate these gaps, ENN recently published a report on existing global evidence and implementation of policies and programmes

for women's and adolescent girls' nutrition in humanitarian contexts³. This case study outlines in more detail the policies and programmes implemented as part of the recent humanitarian response in Madagascar. Specifically, the case study presents the background to the humanitarian and nutrition contexts in Madagascar (**Section 3**), the humanitarian response strategy and coordination mechanisms (**Section 4**), an overview of the nutritional status of women and adolescent girls in Madagascar (**Section 5**), the nutrition policies and programmes for women and adolescent girls, including for routine services and those specific to a humanitarian response (**Section 6**), implementation gaps and challenges (**Section 7**) and advocacy recommendations (**Section 8**). Detailed information about the ongoing multiple micronutrient supplementation (MMS) pilot project in Madagascar is also provided in **Annex 1**.



2 Methods

Development of this case study involved the collection and consolidation of information from the following sources:

- i) A desk review of key country documents including Humanitarian Response Plans for Madagascar, humanitarian reports published by the Nutrition Cluster, programming reports published by UNICEF and World Food Programme (WFP), and formative and implementation research from the MMS pilot project.
- ii) Key informant interviews using a structured, open ended questionnaire guide:
 - Online interviews with Madagascar’s National Nutrition Office (ONN), located within the office of the Prime Minister, the Ministry of Public Health (MSANP) Nutrition Service (SNUT),

UNICEF, WFP’s nutrition team, and the Nutrition Cluster coordination team.

- In person interviews with the regional MSANP focal point, health centre midwives and community health workers (CHWs) in central Madagascar who are involved in the MMS pilot project.
- iii) A field visit to the MMS programme sites, including focus group discussions with women and adolescent girls to explore their perspectives on the delivery of maternal nutrition services, including MMS.

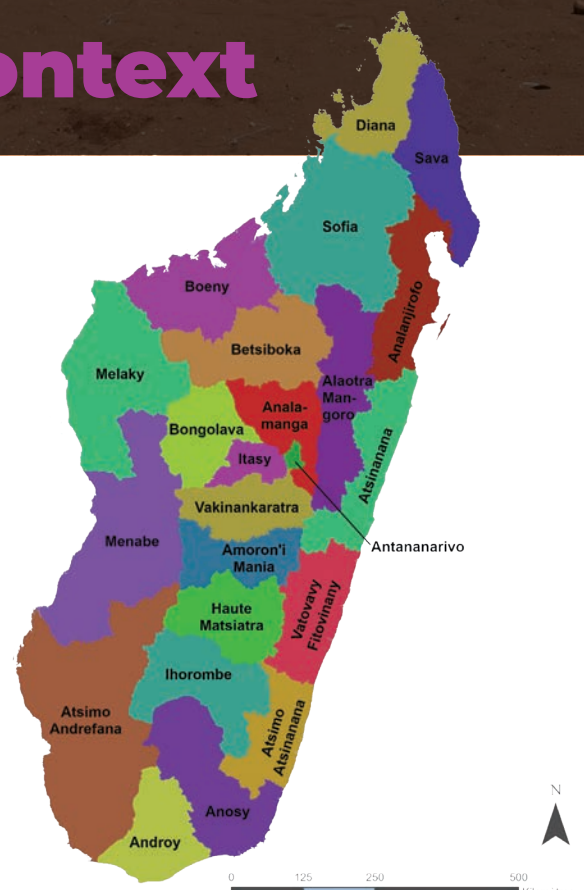


3 Madagascar context

Madagascar is the world's fifth largest island, located between the Indian Ocean and the Mozambique Channel (**Figure 1**). Madagascar's population is approximately 25 million, with 80% residing in rural areas⁴. The island is extremely vulnerable to climate-related hazards, as well as other persistent humanitarian challenges (**Box 1**), which hinder its economic growth potential and development prospects.

Figure 1: Map of Madagascar. This case study focuses on the Grand South ('Grand Sud'), where a humanitarian response was initiated in late 2020 due to the ongoing drought and cyclone crisis. The Grand Sud comprises four regions, namely: Atsimo Andrefana (south west); Androy (south); Anosy and Atsimo Atsinanana (south east – also referred to as the 'Grand Sud Est')

Source: INSTAT and ICF (2021)⁵



3.1 Humanitarian situation

In 2021, Madagascar's fourth consecutive year of poor rainfall contributed to the worst drought the country has faced in 40 years. Crop failures reduced the production of maize, cassava, and rice by as much as 95%, resulting in critical food shortages, mainly in the south. Of the 25.6 million people living in Madagascar, approximately 1.6 million have been classified as food insecure and in need of humanitarian assistance⁷. While some improvement has occurred in the Grand South (hereafter referred to as the 'Grand Sud') since April 2022, 33% of the population remains highly food insecure, including 122,000 people in Integrated Food Security Phase Classification (IPC) Phase 4 (Emergency), and 925,000 in IPC Phase 3 (Crisis)⁸. Within this context, access to sufficient and diversified food remains extremely low, with many resorting to consumption of cacti to survive. Children and women have been most affected, and more than half of the population does not have access to an improved water source.

The humanitarian situation has been exacerbated by exposure to other natural disasters, including cyclones. For example, between January and March 2022, Madagascar was hit by five storms and tropical cyclones⁷. As a result of the cyclones, most districts in the Grand Sud Est (or Grand South East) regions (Anosy and Astimo Atsinanana) were classified as IPC Phase 3 (Crisis) for the first time during April-August 2022, even though this was in the middle of the harvest period⁸.

As in many countries, socioeconomic impacts of the COVID-19 pandemic are still being felt, further intensifying economic insecurity and poverty. Food insecurity and the spread of disease due to climate hazards such as flooding (particularly between November and February) and disease outbreaks have also contributed to high levels of malnutrition across the country.

“Socioeconomic impacts of the COVID-19 pandemic are still being felt, further intensifying economic insecurity and poverty. Food insecurity and the spread of disease due to climate hazards such as flooding and disease outbreaks have also contributed to high levels of malnutrition across the country.”

Box 1: Overview of humanitarian crises in Madagascar

Drought

The Grand Sud of Madagascar is a semi-arid area comprised of four regions (Atsimo-Andrefana, Anosy, Astimo Atsinanana and Androy) characterised by high levels of environmental devastation due to soil erosion and deforestation sandstorms (Tiokamena), which cover croplands and pasture with sand deposits and make the regions prone to persistent and cyclic droughts.

Cyclones

Madagascar experiences, on average, between one and two cyclones a year, the highest number in Africa. Each strong cyclone affects approximately 700,000 people⁶.

Epidemics

Plague: Plague is endemic in Madagascar, with between 200 and 400 cases of bubonic and pneumonic plague reported annually. Cases are usually reported from the central highlands, located at an altitude of over 700 metres⁶. The transmission season generally occurs from September to April, overlapping with the lean and cyclone seasons, thus creating a triple crisis.

COVID-19 pandemic: Since the outbreak of the COVID-19 pandemic, Madagascar has experienced persistent and severe disruptions in essential health services, such as routine vaccinations, safe births, and family planning, that have compromised health progress in the country.

Chronic poverty

Humanitarian needs exacerbate chronic poverty in Madagascar, where approximately nine out of 10 people live on less than \$2 per day⁴. Since early 2020, the prices of essential food products (e.g., rice and oil) have significantly increased, with prices further soaring amid the Ukraine war⁶.

3.2 Nutrition situation

Results from the T1-2021 Nutrition Surveillance System (NSS) mass screening exercise, conducted in April 2021 in 10 districts of the Grand Sud, indicated a serious deterioration in the nutrition situation, with six districts reaching emergency levels (global acute malnutrition (GAM) $\geq 15\%$ and/or severe acute malnutrition (SAM) $\geq 2\%$ for children under five years)⁹.



Photo credit: ©WFP/Tsiory Andriantsoarana

Results from the latest NSS mass screening exercise (T3-2022), conducted in August 2022 in 11 districts of the Grand Sud, showed an overall improvement but with pockets still affected by acute malnutrition in the post-harvest period¹⁰. Specifically, the nutrition situation was classified at emergency level (GAM $\geq 15\%$) in 10 communes and at acute level (GAM $\geq 8\%$) in 29 communes. It should be noted that, while some information on the nutritional status for women and adolescent girls is collected, these mass screenings do not disaggregate this information, which restricts the monitoring of trends for this population group.

A Standardized Monitoring and Assessment of Relief and Transitions (SMART) survey was conducted in July 2022¹¹. Findings showed that among the 11 districts the survey covered, four were classified as 'normal' (GAM $< 5\%$), while Ikongo district had the highest GAM prevalence (9.1%), followed by Farafangana district (8.7%).

According to the recent IPC Acute Malnutrition (AMN) assessment conducted in August 2022, 15 out of 21 districts in the Grand Sud were classified as in an alert situation (IPC phase 2 and above) for the period of May-September 2022¹². The nutrition

situation was classified as 'acceptable' in the remaining six districts. However, the analyses did predict a deterioration during the coming months, with seven districts reaching an alert, and 14 a severe (IPC phase 3 and above), situation between January and April 2023.

Several factors have contributed to the deteriorating nutrition situation in Madagascar, including insufficient harvests and low rainfall combined with the usual lean season, as well as limited financial resources and a lack of awareness of the services available at health centres. SMART survey results also indicated insufficient access to safe water sources and poor care practices in the Grand Sud Est¹².

“Several factors have contributed to the deteriorating nutrition situation in Madagascar, including insufficient harvests and low rainfall combined with the usual lean season, as well as limited financial resources and a lack of awareness of the services available at health centres.”



4 Humanitarian response strategy and coordination

In Madagascar, humanitarian needs and appeals are coordinated by the Government's National Office of Disaster Risk Management (BNGRC), alongside the United Nations (UN) country team and humanitarian partners led by the UN Resident Coordinator. Annual/seasonal humanitarian needs are assessed by the Government and partners (humanitarian and development) in line with the Humanitarian Programme Cycle. The humanitarian partners then launch a Humanitarian Needs Overview or a Flash Appeal, which complements the Government's National Disaster Risk Management Response Plan.

The government established its National Response Plan (NRP) for the drought in October 2020⁶. This included initiatives to respond to immediate humanitarian needs in the Grand Sud, including

medical and nutritional rehabilitation, and cash transfers to support livelihoods and food security, as well as laying the foundation for longer-term resilience and development⁶. A Flash Appeal was launched in January 2021, calling for 75.9 million USD to target 1.14 million people in need of humanitarian assistance. The appeal received approximately half of this amount and reached more than 840,000 people, of which 829,000 received food assistance and livelihood support.

The NRP was extended and revised to May 2022, and then again until the end of 2022, calling for 185 million USD to target 1.6 million people in need of assistance. Of this number, 1.3 million people were targeted in an extended and revised Flash Appeal. In addition to the 1.3 million targeted with

food assistance, other multisectoral initiatives were included to target:

- 807,500 people with access to clean water
- 251,340 malnourished children with nutritional support
- 213,000 people with free access to basic health care services
- 31,000 pregnant women with sexual and reproductive healthcare
- 1,440 survivors of gender-based violence (GBV)
- 279,000 children exposed to child labour
- 85,300 girls between the ages of 12 and 17 at risk of early marriage
- 567,000 students with educational support during the 2021-2022 school year

To date, approximately 57% of the total 219 million USD required through the Flash Appeal have been received, including 40% of the funding required for food and livelihoods services and 38% of that required for nutrition services¹³.

Within the 2022 revised Flash Appeal, sectoral needs and response plans were organised under nine inter-agency standing committee (IASC) clusters^a. Each cluster is coordinated by a focal person from the national government, with a UN IASC cluster coordinator as co-chair. A cluster plan from each sector was included in the 2022 appeal in alignment with the NRP and strategic objectives of the Flash Appeal (**Box 2**). Implementation is facilitated by humanitarian partners, including UN agencies, international and local non-governmental organisations (NGOs) and the Malagasy Red Cross (CRM).

For the nutrition sector, a total of 163,000 people were identified as requiring a humanitarian nutrition intervention between June and December 2022, of which half were targeted for response¹⁴. This included 45,276 PLW/G from populations classified in IPC Phase 3 and above who were targeted through general food distributions (GFDs).

4.1 Madagascar Nutrition Cluster

The Madagascar Nutrition Sector Coordination mechanism was activated in 2018, with official IASC cluster activation in 2021. Coordination and



Photo credit: ©UNICEF/UN0340243/Ralaivita

Box 2: Strategic objectives of the 2021-2022 Flash Appeal

Strategic Objective 1 Avoid human casualties, especially among children under age five and pregnant and lactating women.

Strategic Objective 2 Improve food security and restore the livelihoods of the most vulnerable households.

Strategic Objective 3 Provide essential health services including maternal care for the most vulnerable households, and surveillance of diseases requiring medical attention.

Strategic Objective 4 Ensure the continuity of social services to avoid the negative coping mechanisms among the population.

oversight of the Nutrition Cluster at national level is provided through the leadership of the ONN, with UNICEF's support as co-lead. Coordination at regional level (including in the Anosy, Androy and Atsimo-Andrefana regions of the Grand Sud), is led by the Regional Nutrition Office (ORN), with co-leadership from the Regional Director of the MSANP. At district level, the Service de District de la Santé Publique (SDSP) takes the lead, with the ORN co-leading in 10 districts, across the three regions. In June 2022, following the cyclone response in the Grand Sud Est, Nutrition Sub Clusters were activated in an additional eight districts, with the same cluster coordination mechanisms.

^a The nine inter-agency standing committee (IASC) clusters are: communication and community engagement; coordination and common services; education; emergency shelter; food security and livelihoods; health; nutrition; protection; and water, sanitation, and hygiene (WASH).

The Nutrition Cluster coordination structures aim to ensure high coverage of nutrition services, minimise duplication and maximise collective capacity, while creating intersectoral linkages, particularly across health, food security, WASH, and social protection, through 22 cluster partners. Partners include national and regional government, local and international NGOs, and UN agencies (**Box 3**).

Box 3: Nutrition Cluster partners

National and regional government:

Madagascar's National Nutrition Office (ONN), located within the office of the Prime Minister, the Ministry of Public Health (MSANP).

Local non-governmental organisations

(NGOs): Action Socio-sanitaire Organisation Secours (ASOS), Ampelamitraoka, Association Lovaso, Association Vonjy Iv, Fihamy, Fitahia, Groupement d'Appui et Action pour le Developpement (GRADE), Kiomba, Mahafaly Mandroso, Tompy, Young Progress Association (YPA), Hiara Hampandroso (2H), Ecar Conseil Diocesain de Développement (CDD), Taratra sy Endriky ny Fampandrosoana (ONG TEF), Todisoa.

International NGOs: Action Contre la Faim (ACF), Catholic Relief Services (CRS), Doctors for Madagascar (DfM), GRET, International Federation of the Red Cross (IFRC)/Malagasy Red Cross (CRM), Médecins du Monde (MdM), Medair, Médecins Sans Frontières (MSF) France, Save the Children, SEED Madagascar

United Nations (UN) agencies: UNICEF, World Food Programme (WFP), Food and Agriculture Organization (FAO), World Health Organization (WHO)

The Nutrition Cluster humanitarian response plan (HRP) strategic objective is to prevent acute

malnutrition-related mortality among girls, boys, and PLW/G during drought and cyclone humanitarian crises. Specific objectives related to nutrition for women and adolescent girls are:

- Affected women and children have access to infant and young child feeding (IYCF), women's nutrition and early childhood development (ECD) programmes.
- Women and children suffering from acute malnutrition have access to appropriate malnutrition treatment services. For PLW/G specifically, nutritional support (including enriched flour and fortified oil) is provided, with targeted support for those affected by HIV and tuberculosis.
- Women of childbearing age and children receive micronutrients through fortified foods, supplements, or multi-micronutrient preparations. Lipid-based nutrient supplements (LNS) are distributed to children 6-59 months and fortified flours are distributed to PLW/G (in combination with food distributions).
- Women and children have access to relevant information on nutrition programme activities, ECD and personal protection activities to mitigate the spread of COVID-19. Families are informed about the signs of acute malnutrition and where to access care services.

Given the estimated needs for nutrition interventions in the Grand Sud between June and December 2022, the Nutrition Cluster requested 15.4 million USD to cover the costs of implementation during this period.

Other sector clusters which contribute to supporting nutrition for women and adolescent girls include the Food Security and Livelihoods Cluster and the Health Cluster.



Photo credit: ©WFP/Jules Bosco Bezaka

5 Nutritional status of women and adolescent girls

Women and adolescent girls experience high levels of nutritional vulnerability in Madagascar (**Table 1**). Over a quarter (26.7%) of women of reproductive age (WRA; 15-49 years) are classified as thin, with a similar proportion (26.4%) affected by anaemia. Approximately a third (34.1%) of pregnant women are anaemic and an astonishing proportion of adolescent girls are pregnant (35.6%); it is therefore perhaps unsurprising that maternal mortality remains high (426 per 100,000 live births). These high levels of nutritional vulnerability are exacerbated during humanitarian crises; however, reliable data on the nutritional status of women and adolescent girls within these contexts are lacking. Results from the 2020/1 SMART surveys did indicate high levels of acute malnutrition (MUAC <210 mm) among PLW/G, with the highest rates noted in the Ambovombe (19.2%) and Mobasiry (15.7%) districts of southern Madagascar.

Table 1: Nutritional status of women and adolescent girls in Madagascar

Prevalence of thinness among WRA (BMI <18.5 kg/m ²)	26.7%
Prevalence of low stature among WRA (height <145 cm)	7.2%
Prevalence of anaemia among WRA*	26.4%
Prevalence of anaemia among pregnant women*	34.1%
Prevalence of iodine deficiency among WRA	76%
Prevalence of iodine deficiency among pregnant women	84%
Percentage of adolescent girls (<18 years) who are pregnant	35.6%
Maternal mortality ratio	426 per 100,000 live births

Abbreviations: WRA, women of reproductive age (15-49 years); BMI, body mass index; data presented are from MICS 2018⁵, except for those indicated (*) which are from 2021⁶



6 Nutrition policies and programmes for women and adolescent girls

6.1 National policies and guidelines

National policies and guidelines which address nutrition for women and adolescent girls in Madagascar are summarised in **Table 2**. During humanitarian crises, the aim is to maintain these policies and guidelines, expanding or extending implementation of services where applicable, as well as to implement additional crisis-specific guidelines (outlined in **Section 6.3**). The national policies and guidelines are aligned with WHO nutrition guidance and recommendations, with those targeting PLW/G reflecting the 2016 WHO antenatal care (ANC) recommendations¹⁷. To date, nutrition policies, including those for women and adolescent girls, have been anchored within Madagascar's National Nutrition Action Plan (2017-2021)¹⁸, with a new National Multisectoral Plan for Nutrition (2022-2026) to be launched later in 2022.

“During humanitarian crises, the aim is to maintain national policies and guidelines, expanding or extending implementation of services where applicable, as well as to implement additional crisis-specific guidelines.”

Table 2: National nutrition policies for women and adolescent girls		
Policy	Pregnant and lactating women and girls (PLW/G)	Adolescent girls and women of reproductive age (WRA)
National Nutrition Action Plan (2017-2021) ¹⁸	<ul style="list-style-type: none"> • Iron and folic acid (IFA) supplementation or multiple micronutrient supplementation (MMS). • Deworming at the health facility level. • Intermittent preventive treatment (IPT) for malaria prevention. 	<ul style="list-style-type: none"> • IFA supplementation for adolescent girls. • Deworming for adolescent girls out-of-school. • Monetary transfer programmes for vulnerable groups, women, and adolescent girls. • Nutrition education and awareness raising for girls and parents.
Supplementation protocol for the main micronutrient deficiencies for health, nutrition, and food security stakeholders in Madagascar (2021) ¹⁹	<ul style="list-style-type: none"> • IFA supplementation for PLW/G. • Early initiation of MMS during pregnancy. • Daily MMS for pregnant women throughout pregnancy. • Provision of MMS by health staff through antenatal care (ANC) at health centers or by community health workers at community sites. 	<ul style="list-style-type: none"> • Nutrition education for diet diversification. • Deworming for children and adolescents in- and out-of-school. • IFA supplementation for adolescents in- and out-of-school.
Reference manual on infant and young child feeding (IYCF), women's nutrition and early childhood development ²⁰	<ul style="list-style-type: none"> • Appropriate weight gain during pregnancy. • Early initiation of IFA/MMS and continued supplementation throughout pregnancy. • Deworming during pregnancy (after the first trimester). • Medical monitoring through eight contacts of which four are ANC visits at health facilities (2021). 	<ul style="list-style-type: none"> • Increase food intake to meet the needs for growth during adolescence. • Management of anaemia. • Deworming for adolescent girls in- and out-of-school in the community or at health facilities. • Annual measurement of weight and height for adolescent girls and growth monitoring using size-for-age and body mass index (BMI) curves in the student's health record. • Reduction in early marriage (< 18 years). • Delaying first pregnancy (>20 years), encouraging school attendance, and promoting adolescent reproductive health. • In case of pregnancy: ensure that adolescents are followed up soon after delivery and that gestational weight gain is adequate.
National nutrition policy ²¹	<ul style="list-style-type: none"> • Reduce anaemia prevalence among pregnant women. 	<ul style="list-style-type: none"> • Reduce anaemia prevalence among adolescent girls. • Improve access to quality health services, specifically for children, pregnant women, and adolescents. • Prevent early pregnancy by increasing adolescent girls' knowledge of its harmful effects and promoting family planning. • Improve adolescent girls' nutrition to break the cycle of intergenerational transmission of malnutrition.

6.2 Routine services

Adolescent girls are targeted under the life cycle approach, with a focus on iron and folic acid (IFA) supplementation and deworming programmes for girls 9-13 years of age via school and community-based platforms. These services are implemented by the Ministries of Public Health and Education. A lack of resources, capacity and supplies restrict the government's capacity to achieve high coverage of these services. However, Madagascar's school feeding programme does ensure that girls aged 6-14 years attending primary schools receive a diverse, nutritious meal, alongside nutrition education.

While key informants acknowledged the importance of prevention and management of iron deficiency and anaemia to support women's nutrition and health, as well as their engagement in economic activities, they observed that many women without children do not regularly access the health system. This was reportedly due to financial constraints and the demands of other household and care-related responsibilities.

Since more than a third of pregnant women and adolescent girls are anaemic, the strengthening of nutrition interventions during pregnancy has been prioritised, with a focus on provision of ANC services through eight contact points, four of which should occur at a health facility. During ANC visits, women are offered routine triage services, with pregnancy dating and examinations, alongside other health services such as: malaria prevention, through intermittent preventive treatment (IPT) (in malaria endemic areas) and long-lasting impregnated nets (LLINs), and screening for sexually transmitted infections (STIs). Nutrition education and micronutrient supplementation (IFA or MMS as described below) and deworming are provided, and weight and height measurements are taken. Prenatal IFA supplementation is currently being implemented nationally, except for in districts where MMS is being piloted to inform effective

“While key informants acknowledged the importance of prevention and management of iron deficiency and anaemia to support women's nutrition and health, they observed that many women without children do not regularly access the health system.”

implementation and scale up (see **Section 6.2.1** and **Annex 1**).

6.2.1 MMS pilot project

The WHO 2016 ANC guidelines recommend daily IFA supplementation throughout pregnancy¹⁷. Since nutritional vulnerabilities are exacerbated during humanitarian crises, particularly for PLW/G, WHO, UNICEF and WFP recommend daily prenatal MMS in affected contexts²². However, humanitarian responses generally focus on maintaining (or extending) national health guidelines and services, so only a few affected countries have made the change to implementation of MMS³. The government of Madagascar has however recognised the low coverage of essential nutrition interventions, including IFA supplementation, via routine ANC services and the potential benefits of articulating MMS alongside IFA supplementation as part of the ANC service package outlined in the National Nutrition Action Plan (2017-2021). This has facilitated efforts to implement MMS as part of routine ANC services and to generate information to support national scale up.

Since 2020, Madagascar has participated in a three-year multi-country MMS pilot project funded by the Bill and Melinda Gates Foundation and supported by UNICEF²³. The project has been led by a national MMS working group, chaired by the MSANP SNUT and including various government ministries and international partners. The pilot project focuses on how to appropriately introduce MMS as an alternative to IFA, while improving coverage of ANC services by: (1) identifying effective strategies for introducing MMS that address barriers to coverage, acceptability, and compliance; and (2) providing programmatic evidence for national scale up.

The pilot has occurred across three phases: (1) situation analysis of MMS/micronutrient programmes; (2) MMS implementation; and (3) development of monitoring, evaluation, and documentation plans. Two pilot districts, Soavinandriana district (Itasy region) and Ifanadiana district (Vatovavy region), were selected based on the high prevalence of anaemia in women and the high performance of ANC services and nutrition activities. Two implementation models were used to build evidence on optimal strategies and inform scale up within different contexts: in Soavinandriana district, an enhanced health facility-based delivery model provides MMS during routine ANC; while in Ifanadiana district, a combined model provides MMS at health facilities (during



Photo credit: ©WFP/Da Sylva Mahasampo

ANC) and community-based platforms through CHWs. In both implementation models, MMS is distributed free of charge, with UNICEF responsible for procurement and supply chain management. Based on the findings of formative research²³, tailored social behaviour change communication (SBCC) strategies have also been developed to increase pregnant women's acceptability of, and compliance to, MMS.

Distribution of MMS began in September 2021, reaching a coverage of 79% of all pregnant women/girls in the districts during the first six months. In May 2022, coverage was 80% in Ifanadiana district (health centre and community-level distribution) and 69% in Soavinandriana district (health centre distribution). Successes and challenges from the pilot project have provided valuable insights to inform effective implementation and scale up in Madagascar, with scale up in 13 regions planned to start later in 2022. It has also contributed to understanding how to address gaps and challenges to implementation of nutrition programmes; for example, by addressing supply chain issues

through community-based distribution models (see **Section 7.3** and **Annex 1**). Such learnings can help to strengthen advocacy, policies and programmes that support the nutrition of women and adolescent girls across the country, both for routine service provision and extension services during humanitarian crises (see **Section 8** and **Annex 1**).

“Successes and challenges from the pilot project have provided valuable insights to inform effective implementation and scale up in Madagascar. Such learnings can help to strengthen advocacy, policies and programmes that support the nutrition of women and adolescent girls across the country, both for routine service provision and extension services during humanitarian crises.”

6.3 Nutrition programming in humanitarian contexts

6.3.1 Nutrition surveillance, assessment, and evaluation

Nutritional status and risk of wasting for PLW/G is assessed at health facilities during ANC visits and at GFD collection points. However, large gaps exist in routine monitoring of their nutritional status. As mentioned, mass screenings (NSS) do not specifically capture data for women and adolescent girls, even for those who are pregnant or breastfeeding. Similarly, SMART surveys do not systematically collect data for this population group. For example, the last SMART survey conducted in July 2022 in the Grand Sud Est only assessed the nutritional status of children under five years of age, with data on dietary diversity also being collected for this age group. In addition, food security indicators are assessed at household level, with no monitoring of food consumption specifically by women and adolescent girls. However, there have been exceptions at local levels. For example, a November 2020 SMART survey covering the Atsimo-Andrefana, Androy and Anosy regions captured the proportion of women aged 15-49 with minimum dietary diversity. At the national level, data on the management of acute malnutrition in PLW/G is either not, or not consistently, reported in the DHIS2 system.

6.3.2 GFD

In the context of the drought response, GFD programmes are coordinated and delivered through the Food Security and Livelihoods Cluster and the National Cash Working Group (NCWG) – the government’s shock-responsive social protection programme. During GFDs, food rations are provided to eligible households affected by the crisis. Food rations consist of rice/sorghum, dried vegetables, chickpeas, fortified oil, and iodised salt.

Women and adolescent girls who live in vulnerable households benefit from the GFD package once a month. During distributions, nutrition education is also delivered, alongside screening activities.

6.3.3 Cash distributions

The Nutrition Cluster collaborates with the Food Security and Livelihoods Cluster and the NCWG to combine food and cash distributions for the prevention of acute malnutrition among children aged 6-59 months and PLW/G. This effort is also coordinated with cash-based support via nutrition

sensitive programmes. The cash transfer during emergency situations is 100,000 Ar/household/month (equivalent to 23 USD), and, in most cases, recipients are women who manage use of the cash within the household. As with Child Health Days, collection points for cash assistance provide an opportunity to deliver anthropometric screening. According to the updated beneficiary plan, SBCC activities are carried out with small groups of beneficiaries (parents/caregivers) in the distribution area, when MUAC measurements are taken for children.

Based on Post Distribution Monitoring (March 2022), approximately 74% of the cash received from this programme is being spent on food. However, the cash transfer process has experienced a challenge regarding women who lack identity cards to access the cash transfers. WFP are currently working with the Nutrition Cluster to implement an alternate system to validate women as cash transfer recipients who are not heads of household in their households of origin. They have also requested collaboration with the United Nations Development Programme (UNDP) to strengthen “Ezaka Kopia” interventions which promote access to birth certificates, the primary document for obtaining a National Identification Card (CIN).

The Nutrition Cluster are also involved in ongoing revisions of the cash transfer guidelines for humanitarian crises, which will cover both droughts and cyclones/floods, to ensure that nutrition is considered when determining household targeting and content (cash amount of the transfers).

6.3.4 Prevention of malnutrition in PLW/G

The prevention programme aims to ensure that nutritionally vulnerable populations in areas with consistently high rates of undernutrition are cushioned during the lean period (October to March). The programme targets all PLW/G and women with children under two years in selected villages, based on the GFD criteria. Women in selected villages receive blanket food supplementation (Corn Soy Blend Plus (CSB+) and fortified oil) to prevent their nutritional status from deteriorating.

Further to the blanket prevention programme for PLW/G, those nutritionally at-risk are managed by maternal and obstetric care services, where high-risk pregnancies (primiparous, adolescent, previous abortion/ stillbirth/ complications, etc.) can also be targeted. PLW/G, as well as all women

or girls with infants 0-5 months, are screened and those with a MUAC < 210 mm are enrolled into the supplementary feeding programme (SFP) as part of the community-based management of acute malnutrition (CMAM) protocol. The SFP provides CSB+ and fortified oil to women every two weeks. Due to late uptake of ANC services in Madagascar and the difficulties in identifying women in early pregnancy (an issue shared by many countries), most of the pregnant women enrolled in the programme are in their second or third trimester (and are visibly pregnant).

As part of the Nutrition Cluster response, WFP are also implementing a package of interventions to integrate the prevention of stunting with the 1,000-days approach. The package includes nutrition education, community and household vegetable gardens, strengthening of value chains, cooking demonstrations, SBCC activities, distribution of CSB+ and fortified oil to PLW/G at ANC services and LNS medium quantity (MQ)/small quantity (SQ) for children 6-23 months of age. The Ampanihy and Amboasary districts in southern Madagascar are currently benefiting from this programme.

6.3.5 Ensuring continued access to routine services during crises

Health centres are the official platform for PLW/G to access routine health and nutrition services. At the community level, Nutrition Cluster partners facilitate linkages with the health centres to ensure that pregnant women and girls access adequate ANC during humanitarian crises. During key informant interviews, a WFP representative emphasised that establishing and strengthening referral systems to and from health centres, as well as implementation of the food supplementation programme, helped to increase access to, and uptake of, ANC services by women and girls experiencing high-risk pregnancies.

However, at the institutional level, many women and adolescent girls face difficulties in accessing health services due to both their scarcity and

remoteness. When women and girls do manage to access health centres, the quality of services offered (ANC and nutritional support) is sometimes poor. For example, procurement and supply problems sometimes lead to shortages and stock-outs at health centres, including of IFA supplements for which women are then required to pay unaffordable amounts (0.008 USD per tablet). For those who do receive supplements, poor adherence is common due to low palatability of the tablets and associated side effects. As mentioned, the main objective of the MMS pilot project is to overcome these barriers to ensure effective implementation and scale-up (see **Section 6.2.1** and **Annex 1**).

In addition, to ensure better coverage during the drought and cyclone response, Health and Nutrition Cluster partners collaborated to establish mobile clinics to strengthen the supply and demand for integrated care, health, and nutrition services for PLW/G and children under five years of age. Mobile clinics target clans (fokontany) situated more than 10 km from health centres. They provide individual hygiene kits and dignity kits to women who are pregnant, who have recently given birth, and who are victims of sexual violence. The NGO Médecins du Monde (MdM) and ACF have also partnered to provide technical assistance for family planning and detection and referral for GBV in southern Madagascar.

“To ensure better coverage during the drought and cyclone response, Health and Nutrition Cluster partners collaborated to establish mobile clinics to strengthen the supply and demand for integrated care, health, and nutrition services for PLW/G.”



7 Implementation gaps and challenges

7.1 Availability of data for surveillance and programme monitoring

There is a lack of data on the nutritional status of women and adolescent girls, as well as on programmes which target them, particularly in humanitarian contexts. While some elements are included in routine data collection for various services, particularly ANC services, key informants described how the importance of nutrition is not sufficiently considered within these services and therefore within routine monitoring.

Data and programmes related to nutrition of adolescent girls are even more challenging, although some initiatives are beginning in the Grand Sud. For example, UNICEF is developing an adolescent nutrition programme targeting three of

the districts most affected by the drought through a community-based (peer-to-peer) approach and via schools. This programme will include iron supplementation, deworming and nutrition education. UNICEF will also support the collection of anthropometric information for adolescent girls and PLW/G in SMART surveys, to be undertaken in January-February 2023.

7.2 Availability and maintenance of funding

Key informants described how funding challenges affect programme implementation, with programmes targeting PLW/G often being the first to fall away when resources are limited. Implementation of programmes for women and girls also requires cross-sectoral linkages which are not well defined. Efforts currently being made

by WFP to address these challenges involve working to include interventions (e.g., social protection programmes/cash for assets) for women within resilience programmes, which include development initiatives and are not restricted by humanitarian funding streams. However, generating sufficient buy-in from the resilience teams is currently limiting traction of this approach.

While humanitarian responses are generally met with rapid mobilisation of funds, they are often only triggered once the activation phase has commenced and then only provide short-term resources. More work is needed to ensure that a good resource mobilisation strategy is in place prior to the activation phase and that funding is maintained to support women and girls beyond the humanitarian response.

7.3 Supply chain distribution

Establishing, and maintaining effective supply chains is critical to continuity (and extension) of service provision during humanitarian crises. Within the MMS pilot, distribution of MMS by CHWs was implemented to address issues of inaccessibility and remoteness that prevent women from receiving adequate ANC, including MMS, and thus to ensure the continuity of MMS supply chains at the community level. A community-based system, whereby community members take turns retrieving supplements from a supply point, was also implemented to support continued access to MMS when health centres experienced difficulties in receiving adequate MMS supplies for similar reasons. Since such inaccessibility issues are exacerbated in humanitarian contexts, use of community-based distribution and uptake models and mobile services, which consider the safety of both the health workforce and the women and adolescent girls accessing services, are even more needed.



8 Recommendations

Based on key informant interviews with representatives from the Nutrition Cluster, and supported by learnings from the MMS pilot project, the following actions are recommended to strengthen advocacy, policies and programmes that support the nutrition of women and adolescent girls at global and national levels:

- **Strengthen institutional anchoring of nutrition programmes for women and adolescent girls:** this should be particularly prioritised at the levels of the MSANP and the ONN. To do this, the development of nutrition strategies and standards for women and adolescent girls in humanitarian contexts is essential.
- **Ensure relevance of, and commitment to, policies and guidelines that support women's and adolescent girls' nutrition:** continued review and updating of national guidelines according to

global recommendations and local needs, as well as political commitment to their implementation, is critical to providing adequate support to women and adolescent girls. For example, review of national maternal nutrition and ANC guidelines as part of the MMS pilot project facilitated key updates to national policies: (1) an update of national guidelines to incorporate all the 2016 WHO ANC recommendations; (2) inclusion of MMS in the National Nutrition Action Plan (2017-2021) and the upcoming National Multisectoral Plan for Nutrition (2022-2026); inclusion of daily prenatal MMS in the 2021 supplementation protocol for the main micronutrient deficiencies for health, nutrition, and food security in Madagascar. Advocacy by the MSANP and UNICEF also influenced the government to include MMS in the national essential medicines list.

• **Leverage linkages with other sectors:**

- **Food security:** to better integrate the specific needs of women and adolescent girls in their analyses and response programmes in humanitarian contexts, but also in programmes aimed at increasing resilience (nutritious food).
- **Social protection:** so that the specific nutritional needs of women and adolescent girls are considered when developing and targeting intervention packages.
- **Health:** so that the nutrition of WRA is better monitored, including outside ANC, and that the nutrition of adolescent girls is an integral part of sexual and reproductive health programmes, for example, through systematic integration of the nutrition service package within mobile health teams and youth-friendly health centres.
- **WASH:** both to consider the hygiene needs of women and adolescent girls, but also their role in water supply and hygiene and sanitation tasks, and the impact this may have on nutrition.
- **Education:** to improve the delivery of nutrition interventions for adolescent girls, including ensuring access to, and promotion of, nutritious diets, as well as providing hygiene and sanitation education that considers impacts on nutrition. While IFA supplementation for adolescent girls is included in national guidelines, implementation currently depends on external development funding and is therefore sporadic and requires attention.
- **Build capacity:** there is a need to build the capacity of health institutions and their staff to implement the necessary measures to provide regular nutrition support to women and girls, and to ensure continuity and/or enhancement of services in humanitarian crises. Findings from the MMS pilot highlight a particular need for better integration of nutrition into service provision, regular supervision, and refresher training to support optimal performance and incentives for staff to remain in posts.
- **Collect and analyse data:** data on women's and adolescent girls' nutrition, including on health and nutrition status, food consumption and programme monitoring, is a prerequisite for understanding the issues and gaps, and for advocating for action to support the nutrition of this population group. There is also a need to build the capacity of government and its partners

to ensure that nutrition information systems include data on women and adolescent girls, and to institutionalise monitoring and evaluation systems to measure progress.

- **Create and maintain demand for services:** while providing and maintaining accessible, quality nutrition and health services is critical, parallel community-level sensitisation and SBCC activities are needed to ensure the uptake and retention in services by women and adolescent girls, particularly during humanitarian crises. For example, focus group discussions with pregnant women and adolescents involved in the MMS pilot demonstrated that information provided by health staff and CHWs can support them to attend ANC services, as well as to start, and continue, taking supplements.
- **Deliver inclusive programmes for vulnerable adolescents:** there is a need to develop nutrition interventions and mobilise resources to target vulnerable adolescents, such as pregnant girls and those out-of-school
- **Ensure gender equality and female empowerment:** as a foundation to improve women's and adolescent girls' nutrition, there is a need to develop and implement interventions that build women's capacities for income generation activities, as well as the skills and knowledge to achieve "financial inclusion" within communities. This would promote gender equity and empower women to garner control of resources and assets at household and community levels. Encouraging equitable participation of women and girls in food production, purchasing and preparation, would also contribute to their improved nutrition and health. Finally, it is essential that communities are supported to eradicate gender-based violence.

References

1. Khara T, Mates E. Maternal Nutrition in Emergencies: summary of the state of play and key gaps. Oxford, UK: Emergency Nutrition Network; 2013. <https://www.enonline.net/ourwork/othermeetings/maternalnutrition>
2. James PT, Wrottesley SV, Lelijveld N, Brennan E, Fenn B, Menezes R, et al. Women's nutrition: A summary of evidence, policy and practice including adolescent and maternal life stages. Kidlington, Oxford, UK; 2022. <https://www.enonline.net/womensnutritionasummarytechnicalbriefingpaper>
3. Lelijveld N, Brennan E, Akwanyi B, Wrottesley SV, James PT. Nutrition of women and adolescent girls in humanitarian contexts: current state of play. Kidlington, Oxford, UK; 2022. <https://www.enonline.net/humanitariannutritionforwomen>
4. INSTAT. Troisième recensement général de la population et de l'habitation. Antananarivo, Madagascar; 2019.
5. INSTAT, ICF. Enquête Démographique et de Santé à Madagascar, 2021: Indicateurs Clés. Antananarivo, Madagascar and Maryland, USA; 2021.
6. OCHA. Flash Appeal Madagascar – Grand Sud. January 2021 – May 2022 (revised in June 2021). 2021.
7. WFP. WFP Madagascar country brief. WFP; 2022.
8. IPC. Madagascar: acute food insecurity situation for April to August 2022 and projections for September to November 2022 and December to March 2023: IPC. <https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1155618/?iso3=MDG>
9. Office National de Nutrition (ONN). T1-2021: Rapport sur la Situation Nutritionnelle, l'insécurité alimentaire et la mortalité ainsi que d'autres indicateurs additionnels dans dix districts des trois régions du Sud de Madagascar. Avril-Juin 2021. Antananarivo, Madagascar; 2021.
10. Office National de Nutrition (ONN). T3-2022: Rapport sur la Situation Nutritionnelle, l'insécurité alimentaire et la Mortalité Onze districts des trois régions du Grand Sud-Est (Vatovavy, Fitovinany et Atsimo Atsinanana) Antananarivo, Madagascar; 2022.
11. Office National de Nutrition (ONN), Ministry of Public Health (MSANP), World Food Programme (WFP), UNICEF, INSTAT. SMART RAPIDE Résultats Préliminaires De la partie Food Security Juillet 2022. Antananarivo, Madagascar 2022.
12. Office National de Nutrition (ONN). August IPC Acute Malnutrition assessment, Grand Sud and Grand Sud Est regions. In preparation Antananarivo, Madagascar; 2022.
13. OCHA. Madagascar Flash Appeal 2022: OCHA; 2022 <https://fts.unocha.org/appeals/1067/summary>.
14. OCHA. Appel Éclair Madagascar – Grand Sud et Sud-est. Janvier 2021 – Décembre 2022 (version révisée en Juin 2022). 2022.
15. INSTAT, UNICEF. Multiple Indicator Cluster Survey (MICS) Madagascar 2018. 2019.
16. INSTAT. Enquête Démographique et de Santé à Madagascar, 2021: Indicateurs Clés. Antananarivo, Madagascar; 2021.
17. World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 2016. <https://www.who.int/publications/i/item/9789241549912>
18. Office National de Nutrition (ONN). Madagascar Plan National d'Action pour la Nutrition-III 2017-2021. ONN; 2017.
19. Ministry of Public Health (MSANP), Office National de Nutrition (ONN), Ministry of National Education. Supplementation protocol for the main micronutrient deficiencies for health, nutrition, and food security stakeholders in Madagascar. Antananarivo, Madagascar; 2021.
20. Ministry of Public Health (MSANP), Office National de Nutrition (ONN). Manuel de référence en matière de l'alimentation du nourrisson, du jeune enfant et nutrition de la femme. Antananarivo, Madagascar; 2018.
21. Ministry of Public Health (MSANP). National Nutrition Policy. Antananarivo, Madagascar; 2018.
22. World Health Organization, World Food Programme, UNICEF. Preventing and controlling micronutrient deficiencies in populations affected by an emergency: Joint statement by the World Health Organization, the World Food Programme and the United Nations Children's Fund. Geneva; 2007. <https://www.who.int/publications/m/item/WHO-WFP-UNICEF-statement-micronutrients-deficiencies-emergency>
23. GRET, Pennsylvania State University, Sight & Life, UNICEF. Formative research for the introduction of multiple micronutrient supplements in Madagascar. 2021.

Annex 1

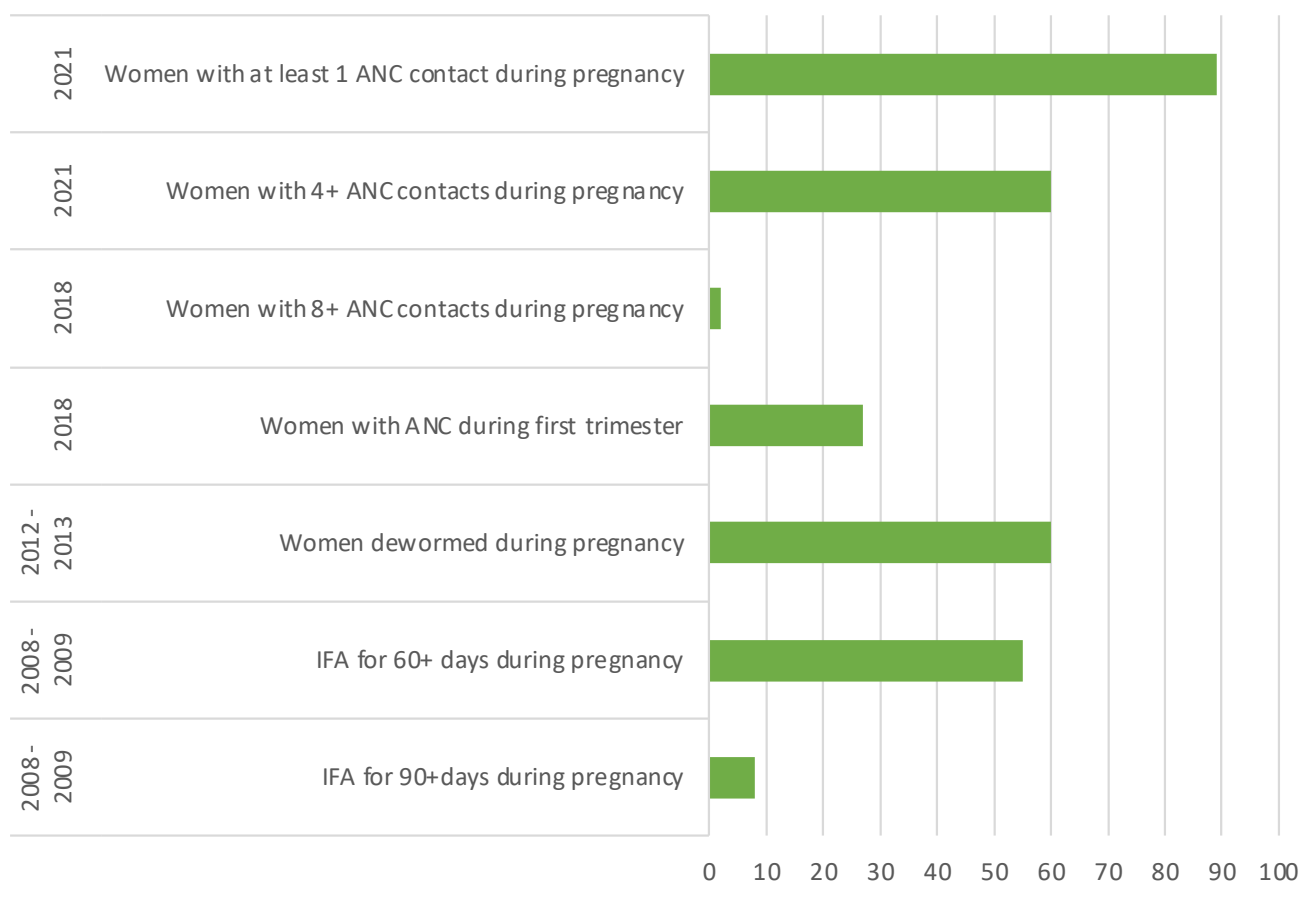
The multiple micronutrient supplementation (MMS) pilot project in Madagascar

Background

The World Health Organization (WHO) 2016 antenatal care (ANC) guidelines recommend daily iron and folic acid (IFA) supplementation throughout pregnancy¹. However, low coverage of essential nutrition interventions, including IFA supplementation, within routine services for pregnant women has been recognised by the government of Madagascar (**Figure 1**). While almost 90% of women in Madagascar access

ANC services during pregnancy, only 27% do so during their first trimester and only 60% achieve at least half of the recommended eight ANC contacts. In addition, only 55% of pregnant women receive IFA supplements, and as few as 8% receive them for 90 days or more⁴. Low coverage of IFA supplementation, alongside pre-existing nutritional vulnerabilities, increases the risk of adverse delivery outcomes, including maternal and infant mortality, preterm birth and low birthweight¹.

Figure 1: Coverage of maternal nutrition programmes in Madagascar; data sources: EDS-IV 2008-2009⁵; ENSOMD 2012-2013⁶; MICS 2018⁴; EDS-V 2021⁷



Abbreviations: antenatal care (ANC); iron and folic acid (IFA). Coverage of maternal nutrition programmes provided as percentages.

Further, more than two decades of research has identified multiple micronutrient supplementation (MMS) as an effective, safe, affordable, and cost-effective antenatal supplement for pregnant women⁸⁻¹⁰. Compared to IFA alone, MMS has been shown to enhance maternal nutritional status and

to reduce the risk of adverse birth outcomes, including preterm birth, stillbirth, low birth weight, and small-for-gestational age deliveries¹⁰. Since nutritional vulnerabilities are exacerbated in humanitarian contexts, particularly for pregnant and lactating women and girls (PLW/G), the United

Nations (UN) recommendations for prenatal MMS take precedence, with daily MMS to be taken in addition to any fortified foods or IFA tablets already being received, as well as any vitamin A being taken postpartum¹¹. However, since humanitarian responses focus on maintaining (or extending) national health guidelines and services, as well as various challenges related to switching from IFA supplementation to MMS, few affected countries are currently implementing MMS during humanitarian crises¹². Thus, MMS was articulated alongside IFA supplementation as part of the ANC service package in Madagascar's National Nutrition Action Plan (2017-2021), with an aim to transition to MMS within routine ANC services at national level, allowing for sustained implementation during the ongoing humanitarian crises experienced in Madagascar.

MMS pilot project

In 2020, the Ministry of Public Health (MSANP) seized the opportunity to participate in a three-year multi-country MMS pilot project funded by the Bill and Melinda Gates Foundation and supported by UNICEF². The pilot focuses on how to appropriately introduce MMS as an alternative to IFA, while improving coverage of ANC services by: (1) identifying effective strategies for introducing MMS which address barriers to coverage, acceptability, and compliance; and (2) providing programmatic evidence for national scale up.

Leadership and coordination

A national MMS working group was formed in 2018 to establish government ownership and to engage key stakeholders around implementation and scale up of MMS in Madagascar. This group is led by the MSANP Nutrition Service (SNUT) and includes representatives from various government ministries and international partners involved in maternal health and nutrition (**Box 1**). There are three sub-committees (SCs), namely the Technical SC, Communication SC, and Monitoring and Evaluation SC, that address specific areas of programme implementation. Project coordination and implementation at national and regional/district levels is led by MSANP SNUT. At regional, district and health facility levels, implementation occurs through existing health system mechanisms, including delivery by community health workers (CHWs), who fall under the remit of the MSANP, and the National Nutrition Office (ONN) within the Office of the Prime Minister. Participants at coordination meetings include the national MMS working group, regional and district health and

Box 1: Multiple micronutrient supplementation (MMS) pilot partners

National team:

- Ministry of Public Health (MSANP) Nutrition Service (SNUT)
- National Community Nutrition Programme Unit (U-PNNC)
- National Nutrition Office (ONN), Prime Minister's Office
- Directorate of Family Health, MSANP
- Safe Motherhood Unit, MSANP

International partners:

- UNICEF, World Health Organization (WHO), United Nations Population Fund (UNFPA), World Food Programme (WFP), the World Bank
- GRET

nutrition managers, local non-governmental organisations (NGOs), and health staff.

Pilot implementation

Planning for pilot implementation in two districts, Soavinandriana district (Itasy region) and Ifanadiana district (Vatovavy region), began in 2020. Districts were selected by the national MMS working group from those where the World Bank funded Nutritional Outcomes Improvement Project (PARN) was being implemented. Selection was based on the high prevalence of anaemia in women, high performance of ANC services and the presence of nutrition activities at health centre and community levels, with most health centres and community-based platforms accessible all year-round. The pilot has occurred across three phases: (1) situation analysis of MMS/micronutrient programmes; (2) MMS implementation; and (3) development of monitoring, evaluation, and documentation plans.

Phase 1: Situation analysis of MMS/micronutrient programmes

Situation analysis involved identifying enabling environments for supplementation, procurement and production models for MMS, women's preferences for supplement formulation and packaging, potential barriers and facilitators to uptake and adherence, and optimal delivery platforms. As part of this process, mixed methods formative research was conducted by Pennsylvania State University, in partnership with UNICEF, Sight

and Life, and GRET to tailor MMS programme design for improved acceptability and compliance among pregnant women in rural Madagascar². Research was conducted in two phases using rapid assessment procedures in the pilot districts (Itasy and Vatovavy Fitovinany) from October 2020 to March 2021. Community inputs (workshops, focus group discussions, market observations) were

combined with information from semi-structured interviews with pregnant women and health workers to understand the factors influencing nutrition and health behaviours, and supplement use, during pregnancy, as well as product-related considerations to improve acceptability and compliance. A summary of the formative research findings is provided in **Box 2**.

Box 2: Key findings from formative research on the introduction of multiple micronutrient supplementation (MMS) in Madagascar.

Source: Formative research report from UNICEF, Sight and Life, and GRET (2).

- Limited household finances and physical access, competing livelihood demands, lack of access to diverse diets and food aversions prevented women from consuming nutritious diets and accessing health services during pregnancy.
- Experiencing pregnancy symptoms, positive perceptions towards the quality of antenatal care (ANC) services, and adequate support by health workers and other community members, increased healthcare seeking and promoted positive attitudes to prenatal supplement use.
- Participants described an understanding of the health benefits of prenatal supplementation, particularly iron and folic acid (IFA), for women and their infants. They also discussed challenges to IFA supplement use, including stock outs at health facilities, experiencing side effects (e.g., nausea, dizziness) and forgetting to consume them regularly.
- Women outlined preferences related to MMS formulation (colour, taste) and packaging, as well as the logo and slogans used to promote MMS in social and behaviour change communication (SBCC) strategies.
- Women cited price as the primary driver of supplement purchasing and felt that MMS should be provided for free to address financial constraints in most households.
- Many women believed that distributing MMS via a wider range of community-based channels, alongside facility/ANC-based distribution, would increase coverage.
- Community health workers and medical staff, family members (particularly male heads of household) and community leaders were identified as important audiences for MMS sensitisation and social mobilisation activities.
- It was recommended that pregnant women be reached via a combination of interpersonal communication (peer-to-peer information sharing, door-to-door visits, and village-level meetings), social mobilisation, and media-based approaches (radio, television, newspapers, and Facebook). Women also desired clear messaging about MMS (dosing, benefits, and side effects) and how it compares/contrasts to other prenatal supplements.

Phase 2: MMS implementation

Phase 2 (2021-2022) of the MMS pilot involved project design, development of implementation manuals/tools, and supply and distribution plans, capacity building of human resources and social mobilisation activities. Two implementation models were agreed upon by the MMS working group to build evidence on optimal strategies, successes and challenges and inform scale up within different contexts in Madagascar. In Soavinandriana district,

an enhanced health facility-based delivery model provides MMS during routine ANC. In Ifanadiana district, a combined model provides MMS at health facilities (during ANC) and community-based platforms through CHWs.

In both implementation models, MMS is distributed free of charge and women must obtain their first box of supplements from a health centre during their first ANC visit. In Ifanadiana district, women can then benefit from distribution and support by

CHWs. Health centre staff have received additional training to improve the quality of ANC services (routine ANC practices, MMS counselling, maternal nutrition counselling, interpersonal communication to promote ANC and MMS). Where community-based distribution is being implemented, CHWs and traditional birth attendants (TBAs) have been trained to promote ANC and MMS, and to counsel mothers and community members on their benefits. Since TBAs are highly respected in communities for providing essential social support to women during pregnancy and childbirth, they have been provided with additional training to promote and support pregnant women's adherence to MMS and uptake of ANC services. A local NGO (Pivot) in Ifanadiana district provides food to TBAs when they take pregnant women to a health centre to deliver. They also provide necessities, clothing and blankets to women who deliver in their supported health centres. During key informant interviews, midwives noted an increase in the number of deliveries at health centres since these activities have been implemented.

To ensure an uninterrupted and quality supply of MMS during the pilot project, UNICEF has been responsible for procurement and supply chain management of the United Nations International Multiple Micronutrient Antenatal Preparation (UNIMMAP) formulation³ (see **Box 3**). This support includes strengthening supply

Box 3: The United Nations International Multiple Micronutrient Antenatal Preparation (UNIMMAP)³

UNIMMAP is an established multiple micronutrient formulation containing the following 15 vitamins and minerals in recommended dosages: Vitamins A, vitamin D, vitamin E, vitamin C, thiamine, riboflavin, niacin, vitamin B6, folic acid, vitamin B12, copper, iodine, iron, selenium, and zinc.

It has been specifically developed to improve pregnancy outcomes and has been tested in efficacy and effectiveness trials across multiple regions. When compared with iron and folic acid (IFA) supplementation, results indicate similar benefits of UNIMMAP-MMS for anaemia prevention, but larger benefits on other pregnancy outcomes such as low birth weight and small-for-gestational age deliveries.

chains from national to community levels. During a key informant interview, a representative from the MSANP confirmed that MMS is now included in Madagascar's list of essential medicines and discussions are ongoing to facilitate introduction of MMS into the national supply chain.

Based on findings from the formative research, tailored social behaviour change communication (SBCC) strategies have been developed to increase pregnant women's acceptability of, and compliance to MMS. Social mobilisation and media-based approaches have been developed to address cultural barriers and social norms, as well as to inform key influencers of pregnant women (e.g., husbands, mothers-in-law, grandmothers, community members) about the importance of nutritious diets and the routine use of MMS. Observations provided by medical personnel and CHWs during key informant interviews indicated that these investments have promoted MMS acceptance, uptake, and adherence.

Phase 3: Development of monitoring, evaluation, and documentation plans

Integrating MMS coverage into routine monitoring systems and evidence documentation forms Phase 3 (2022-2023) of the MMS pilot. The health management information system (HMIS) collects information on the provision of iron containing supplements to pregnant women during ANC contacts. UNICEF has supported the District Health Information Systems (DHIS2) team in the two districts to integrate an indicator for the percentage of pregnant women consuming MMS for 90+ days in the DHIS2. Other indicators to assess ANC contacts and MMS supplementation at the community level are tracked through a parallel system using a data collection tool designed and validated by the Technical SC.

The pilot has utilised routine regional and district level supervision sessions for health personnel and CHWs to introduce monitoring of MMS. During these sessions, the team checks the availability of SBCC tools and materials and conducts training to improve the quality of ANC services including maternal nutrition counselling, MMS distribution and stock management.

Biannual reviews of the pilot project are conducted by the MMS National Technical Committee under the leadership of the MSANP SNUT. GRET has also been contracted to support the national MMS working group to document lessons learned from

pilot implementation to broaden the operational evidence base and support national scale up of MMS. While GRET has not yet started the documentation process, discussion and review of this learning is scheduled to occur during the coordination meeting held by the National Technical Committee in early September 2023.

Implementation successes and challenges

Distribution of MMS began in September 2021, with a target of 60% coverage. During the first six months of supply, overall coverage reached 79%. In May 2022, coverage was 80% in Ifanadiana district (health centre and community-level distribution) and 69% in Soavinandriana district (health centre distribution).

Data collected during the July 2022 supervision visit in Soavinandriana district indicated that, while the number of low birthweight deliveries increased from 100 in Semester 1 2020 to 127 in Semester 1 2021, this was reduced to 77 in the following year (Semester 1 2022).

Strengthening the capacity of health personnel (health centre staff, CHWs and TBAs)

The last supervision visits during July 2022 saw improved awareness of ANC and MMS, as well as improved ANC service delivery. However, ANC providers need to make more effort to ensure integration of nutritional awareness into their practice, alongside comprehensive nutrition counselling services. Regular supervisions for CHWs have improved their performance, particularly related to completing monitoring and reporting tools.

Use of TBAs in Ifanadiana district has been instrumental in early identification and referral of pregnant women to health centres. CHWs who were previously trained by PARN have demonstrated improved performance in conducting pregnancy follow-ups and sensitisation activities in the MMS community site. However, the need for refresher training and the high turnover of CHWs, due to a lack of incentives to remain in post, have been flagged as potential challenges to sustainability and scale up.

Supply chain distribution

MMS is currently being distributed via two channels: one running between national and community levels, and another between national level and health centres. The distribution of MMS by CHWs was implemented to address issues of inaccessibility and remoteness that prevent women

from receiving adequate ANC, including MMS, and thus to ensure the continuity of MMS supply chains at the community level. While distribution of MMS by CHWs in landlocked and remote regions is going well, very little distribution is recorded in community sites situated near to health centres.

“The distribution of MMS by CHWs was implemented to address issues of inaccessibility and remoteness that prevent women from receiving adequate ANC, including MMS, and thus to ensure the continuity of MMS supply chains at the community level.”

Some health centres have experienced difficulties in receiving adequate MMS supplies due to inaccessibility and remoteness. A community-based system has therefore been established whereby community members take turns retrieving supplements from a supply point. However, retrieval of supplies has been restricted by work demands in the field, as well as the recent passage of cyclones, leading to further breaks in the supply chain.

Creating demand for MMS

While primary communication materials (animation leaflet, posters, guide for mobilisers, job aids, etc.) are still being developed and refined, community-level sensitisation and SBCC activities have been an integral part of health and community workers' responsibilities in the two pilot districts. A module on interpersonal communication was provided to all health centre and community-based personnel during initial pilot training. During home visits, CHWs promote the benefits of pregnant women attending early antenatal consultations and taking MMS throughout pregnancy, particularly emphasising the availability of MMS at health centres. The same messages are provided during nutrition education sessions or small group meetings with pregnant women. During ANC visits, health workers inform women of the benefits of MMS. In addition, the Soavinandriana district management team partnered with local radio stations (Radio Locale de Soavinandriana) to deliver messages about MMS during special health broadcasts. Using their own initiative, the Ifanadiana district management team produced a video clip on MMS supplementation in the local dialect.

During focus group discussions with pregnant women and adolescents, they expressed preferences for MMS over IFA supplementation due to the comparatively minimal side effects. Women and adolescent girls also mentioned that the information provided about MMS at health centres and in their communities, including the benefits, how to manage side-effects, and strategies for remembering to take MMS daily throughout pregnancy, had supported them in starting, and continuing, to take MMS.

According to requests from the two regional health directorates, several activities are planned to expand awareness around ANC and MMS. These include: (1) advocacy with press owners and influential people at community level; (2) orientation of journalists and radio hosts towards the challenges related to accessing ANC services and MMS; (3) dialogues with community leaders; (4) conducting listening group sessions; and (5) hosting events like the “champion approach” (poem, speech, theatre contests).

Guidelines, advocacy, political commitment

The MMS pilot project provided an opportunity to review national maternal nutrition and ANC guidelines. As a result, MMS has been included in the National Nutrition Action Plan (2017-2021) and the upcoming National Multisectoral Plan for Nutrition (2022-2026). In addition, national guidelines were updated to incorporate all the 2016 WHO ANC recommendations, as previously described. The supplementation protocol for the main micronutrient deficiencies for health,

nutrition, and food security in Madagascar was developed in 2021. It includes early initiation of MMS, daily intake of MMS by pregnant women throughout pregnancy, and the provision of MMS by health staff through ANC at health centres or by CHWs at community sites, as well as other interventions such as nutrition education for food diversification and deworming.

Through advocacy with the MSANP, UNICEF influenced the government to include MMS in the national essential medicines list.

Plans for scale up

Government ownership remains the major challenge to success. However, drafting of the National Nutrition Action Plan (2022-2027) provides an opportunity to include financing, sourcing, and procurement of MMS, as well as capacity building to effectively deliver services that support uptake and adherence to MMS. This will, in turn, support a transition from IFA to MMS at national level, across all districts beginning with those prone to humanitarian crises such as in southern Madagascar.

Leveraging existing momentum and opportunities from the MMS pilot, scale up is planned to start later in 2022 through PARN in 13 regions, with additional support from the European Union and Germany. The MMS National Technical Committee has started establishing a supply plan with costing covering all districts of Madagascar. The distribution model will be informed by the operational lessons learned during the evaluation exercise to be led by GRET.

Annex references

- 1 World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 2016. <https://www.who.int/publications/item/9789241549912>
- 2 GRET, Pennsylvania State University, Sight & Life, UNICEF. Formative research for the introduction of multiple micronutrient supplements in Madagascar. 2021.
- 3 Johns Hopkins Bloomberg School of Public Health, Micronutrient Forum, Multiple Micronutrient Supplementation in Pregnancy Technical Advisory Group (MMS-TAG), Nutrition International, UNICEF, Vitamin Angels. Interim country-level decision-making guidance for introducing multiple micronutrient supplementation for pregnant women. 2020.
- 4 INSTAT, UNICEF. Multiple Indicator Cluster Survey (MICS) Madagascar 2018. 2019.
- 5 INSTAT. Enquête Démographique et de Santé de Madagascar 2008-2009. Antananarivo, Madagascar; 2010.
- 6 INSTAT. L'Enquête Nationale sur le Suivi des indicateurs des Objectifs du Millénaire pour le Développement (ENSOMD) Madagascar 2012-2013. Antananarivo, Madagascar; 2013.
- 7 INSTAT. Enquête Démographique et de Santé à Madagascar, 2021: Indicateurs Clés. Antananarivo, Madagascar; 2021.
- 8 Keats EC, Haider BA, Tam E, Bhutta ZA. Multiple-micronutrient supplementation for women during pregnancy. *Cochrane Database Syst Rev.* 2019;3(3):Cd004905.
- 9 Smith ER, Shankar AH, Wu LS, Aboud S, Adu-Afarwuah S, Ali H, et al. Modifiers of the effect of maternal multiple micronutrient supplementation on stillbirth, birth outcomes, and infant mortality: a meta-analysis of individual patient data from 17 randomised trials in low-income and middle-income countries. *Lancet Global Health.* 2017;5(11):e1090-e100.
- 10 HMHB Consortium. Advocating for safe, affordable, and cost-effective nutrition interventions to improve maternal health: Healthy Mothers Healthy Babies (HMHB) Consortium; 2022. <https://hmhbconsortium.org/knowledge-hub/hmhb-mms-advocacy-brief/>
- 11 World Health Organization, World Food Programme, UNICEF. Preventing and controlling micronutrient deficiencies in populations affected by an emergency: Joint statement by the World Health Organization, the World Food Programme and the United Nations Children's Fund. Geneva; 2007. <https://www.who.int/publications/m/item/WHO-WFP-UNICEF-statement-micronutrients-deficiencies-emergency>
- 12 Lelijveld N, Brennan E, Akwanyi B, Wrottesley SV, James PT. Nutrition of women and adolescent girls in humanitarian contexts: current state of play. Kidlington, Oxford, UK; 2022. <https://www.ennonline.net/humanitariannutritionforwomen>



2nd Floor, Marlborough House, 69 High Street, Kidlington, Oxfordshire OX5 2DN
+44 (0)1865 372340 | www.ennonline.net | office@ennonline.net

Charity registration no: 1115156. Company registration no: 4889844.