

# IMPACT EVALUATION

## Targeting Moderate Acute Malnutrition in Humanitarian Situations in Chad

### Summary Evaluation Report

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Prepared by Dara International:

Montserrat Saboya, Jesper Rudiger, Jacqueline Frize, Daniela Ruegenberg, Ana Rodriguez Seco and Colleen McMillon.

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## **Evaluation Management**

Director of Evaluation:	Andrea Cook
Coordinator, Impact Evaluations:	Sally Burrows
Evaluation Manager:	Diego Fernandez

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## Executive Summary

1. This impact evaluation was commissioned by the WFP Office of Evaluation as part of a wider series. Four of the evaluations look at the impact of WFP programmes on nutrition in the Sahel. The WFP supports several on-going interventions to prevent and address moderate acute malnutrition (MAM) in Chad. These interventions include a targeted supplementary feeding programme (TSFP) for children aged 6-59 months as well as pregnant and lactating women in areas where gross acute malnutrition (GAM) exceeds 10 percent, and a blanket supplementary feeding programme (BSFP) during the lean season in areas of high food insecurity where GAM exceeds 15 percent.
2. This evaluation focused on the interrelation between prevention and treatment of moderate acute malnutrition (MAM) on children aged 6-23 months in the Bahr el Ghazal (BEG) region of Chad. The evaluation was also concerned with the protracted relief and recovery operation (PRRO) Chad–200713, which seeks to build resilience, protect livelihoods and reduce malnutrition among refugees, returnees, and other vulnerable people in Chad.
3. The evaluation used mixed econometric methods to assess the impact of the WFP BSFP during the lean season, along with the TSFP. Pregnant and lactating women, and children aged 6-23 months were specifically looked at for this evaluation. Blanket supplementary feeding aims to prevent a deterioration of the nutritional status of individuals identified as vulnerable through food security and nutrition assessments. The evaluation used qualitative data that were collected through formal and informal interviews and meetings with population groups and relevant stakeholders, NGOs, and WFP country office staff. Targeted supplementary feeding aims to treat moderately malnourished individuals identified through anthropometric screening within the Ministry of Health (MoH).
4. The impact evaluation posed one primary and three secondary questions:
  - a) Primary question
    - *What is the impact of MAM prevention interventions on the incidence and prevalence of MAM in under 2 year olds under different levels of access to MAM treatment?*
  - b) Secondary questions
    - What is the effect of prevention on MAM status of under 2-year olds during the lean season?
    - Are there any gender differences in impacts?
    - Are there any age differences in impacts? (The siblings of BSFP recipients aged 24-59 months were also included for anthropometric measurement).
5. The evaluation used an analysis of covariates (ANCOVA) approach, alongside regressions and propensity score-matching to estimate the impact of the programmes (BSFP/TSFP) on those treated.
6. The impact evaluation concluded that the BSFP has a positive effect on MAM incidence in children aged 6-23 months during the lean season. There was strong evidence that the BSFP protects households whose main livelihood is agriculture. Households with more access to the TSFP (measured by proximity to health centres or mobile clinics) also have lower MAM incidence. However, the WFP seasonal

interventions have some limitations mainly due to operational and financial issues, which mean the BSFP is not implemented fully as designed. Geographical targeting for seasonal assistance is limited and does not provide full coverage for eligible children aged 6-23 months.

7. The evaluation presents the following points for consideration:

- Point 1: Explore alternative financing mechanisms and establish agreements with relevant funding bodies and agencies for programming food assistance interventions in a more predictable, systematic and collaborative manner. This will ensure increased coverage (geographical and individual) of the BSFP and thereby extend the positive effects of the programme on MAM incidence to a larger affected population.
- Point 2: To improve access to the TSFP, explore alternative approaches for increasing TSFP coverage. For example: designing, deploying, validating and testing locally produced, nutritional products could be an alternative way to reduce the cost of the treatment (by reducing transport costs) and consequently, if combined with community-based delivery approaches, increase access to treatment.
- Point 3: Further research may be needed to better understand the interactions between BSFP, contextual factors, and child-specific conditions, and to separate the effect of BSFP from the effect of other seasonal interventions that run in parallel. Additional issues to be explored include the sustainability of the actual seasonal assistance model, and alternative strategies for preventing peaks of MAM incidence after the lean season. The cost-effectiveness of the intervention should be studied with specific reference to the adequate resourcing of the programme.

## Introduction

8. This evaluation was concerned with the protracted relief and recovery operation (PRRO) Chad–200713, which seeks to build resilience, protect livelihoods, and reduce malnutrition among refugees, returnees and other vulnerable people in Chad. WFP commissioned this evaluation as part of a series to help better understand how nutrition and MAM prevention interventions relate to the prevalence of undernutrition and related outcomes in conflict and protracted environments. This evaluation was conducted by an independent evaluation team, whose deliverables were managed and technically quality assured by the International Initiative for Impact Evaluation (3ie).

9. The evaluation focused on the interrelation between prevention and treatment of moderate acute malnutrition (MAM) on children aged 6-23 months in Chad. While there is substantial interest in MAM interventions to prevent severe acute malnutrition (SAM) and relapses into SAM, MAM programmes suffer from low coverage, compared with SAM interventions.<sup>1</sup> Although MAM affects an estimated 33 million children worldwide, and is associated with more nutrition-related deaths than SAM, the most effective way of addressing MAM is still not understood.<sup>2</sup> The

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<sup>1</sup> International Symposium on Understanding Moderate Malnutrition in Children for Effective Interventions. 27–29 May 2014. IAEA Headquarters Vienna, Austria. 2014.

<sup>2</sup> Wegner, C. et al. *Moderate acute malnutrition: covering the known and unknown for more effective prevention and treatment*. Food and Nutrition Bulletin Supplement 1, March 2015, pp. 3S-8S(6)

consensus is that short-term solutions for addressing acute malnutrition, such as treatment, need to be integrated with longer-term prevention interventions and incorporated into other sectors such as water, sanitation and hygiene (WASH), health and food security to sustainably reduce the incidences of malnutrition.<sup>3</sup>

## Country Context

10. Chad is a landlocked, arid, low-income and food-deficit country that ranks 185 out of 188 in the UNDP Human Development Index, and 73 out of 78 on the Global Hunger Index. Chad is one of the poorest countries in the world. Eighty-seven percent of the population lives in multidimensional poverty with life expectancies as low as 51.2 years.<sup>4</sup> The 2016 UNICEF Standardized Monitoring and Assessment of Relief and Transitions (SMART) survey revealed a GAM rate of 11.9% in Chad.<sup>5</sup> The United Nations Office for the Coordination of Human Affairs (UNOCHA) estimates for 2017 indicated an expected 438,101 cases of malnutrition in Chad and 4 million food insecure people.<sup>6</sup>

11. High levels of poverty in Chad have been aggravated by several conflicts after independence (which was obtained in 1960). Ethnic tensions contributed to political and economic instability, and poor economic development. Due to increased conflict in neighbouring countries, UNHCR (2015) estimated that Chad hosted more than 470,000 refugees at the end of 2015, in addition to more than 90,000 Chadians who were displaced due to the Darfur conflict and Boko Haram crisis. The influx of refugees, the return of Chadians who had fled the country, and the internal displacement of people, contributed to a deteriorating socio-economic situation, strained local resources, and increased food insecurity among vulnerable communities. The health situation in Chad is characterized by the prevalence of potentially epidemic diseases, such as cholera and measles, and other diseases such as malaria, and this is exacerbated by limited access to health care.

12. This evaluation focussed on the Bahr El-Ghazal (BEG) region, which suffers from a higher prevalence of GAM and MAM than the national average (values repeatedly above the 15 percent emergency cut-off), and which houses 23 percent of Chad's nomadic population.

## Summary of Intervention, Theory of Change, and Research Hypothesis

### *Description of WFP intervention*

13. WFP has several on-going interventions to prevent and address MAM in Chad, including programmes targeting the local population, refugee populations (Central African Republic, Nigeria and Sudan), and returnees (from Central African Republic and Nigeria).<sup>7</sup> This evaluation was concerned with the protracted relief and recovery operation (PRRO) Chad-200713, which seeks to build resilience, protect livelihoods, and reduce malnutrition among refugees, returnees, and other vulnerable people in Chad. Under the

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<sup>3</sup> Bloss E, Wainaina F, Bailey R. *Prevalence and Predictors of Underweight, Stunting, and Wasting Among Children Aged 5 and Under in Western Kenya*. *J Trop Pediatr* 2004; 50:260-70. 2004. Available from: <http://advances.nutrition.org/content/3/2/242.abstract>

<sup>4</sup> World Food Programme, 2017, *Chad*, The United Nations, accessed 1 November 2017, <http://www1.wfp.org/countries/chad>.

<sup>5</sup> UNICEF, September 2016, *Chad Humanitarian Situation Report*, UNICEF.

<sup>6</sup> OCHA. 29 May 2017. *CHAD: Overview of Food Security and Nutrition Situation (May 2017)*. United Nations Office for the Coordination of Humanitarian Affairs, Chad.

<sup>7</sup> During the period 2015-2016, WFP had five active operations in Chad: (i) DEV 200288 (Jan. 2012 – Dec. 2016, School feeding); (ii) EMOP 200799 (Jan. – Dec. 2015, Assistance to CAR refugees); (iii) Reg. EMOP 200777 (Jan.2015 – Dec. 2016, Assistance to populations affected by North Nigeria crisis); (iv) UNHAS SO 20785 (Humanitarian Flights); and (v) PRRO 200713 (Jan. 2015 – Dec- 2016, Building resilience, protecting livelihoods and reducing malnutrition of Refugees, Returnees and other vulnerable people)

PRRO, two specific WFP programmes were evaluated: the targeted supplementary feeding programme (TSFP), which targets children 6-59 months; and the blanket supplementary feeding programme (BSFP), which targets children 6-23 months during the lean season and is coupled with targeted food assistance (or in-kind food or cash transfers) for food insecure households.

14. The BSFP aims to prevent a deterioration of the nutritional status of individuals, while the TSFP aims to treat moderately malnourished individuals. This evaluation assessed the impact of the BSFP on nutritional status, for beneficiary children aged 6-23 months, during the lean season.

### *Theory of change*

15. Children with MAM are at risk of morbidity from infectious diseases and delayed physical and cognitive development.<sup>8</sup> The most recent global community-based management of acute malnutrition (CMAM) evaluation<sup>9</sup> reported that there was not enough evidence on outputs and outcomes for MAM management.

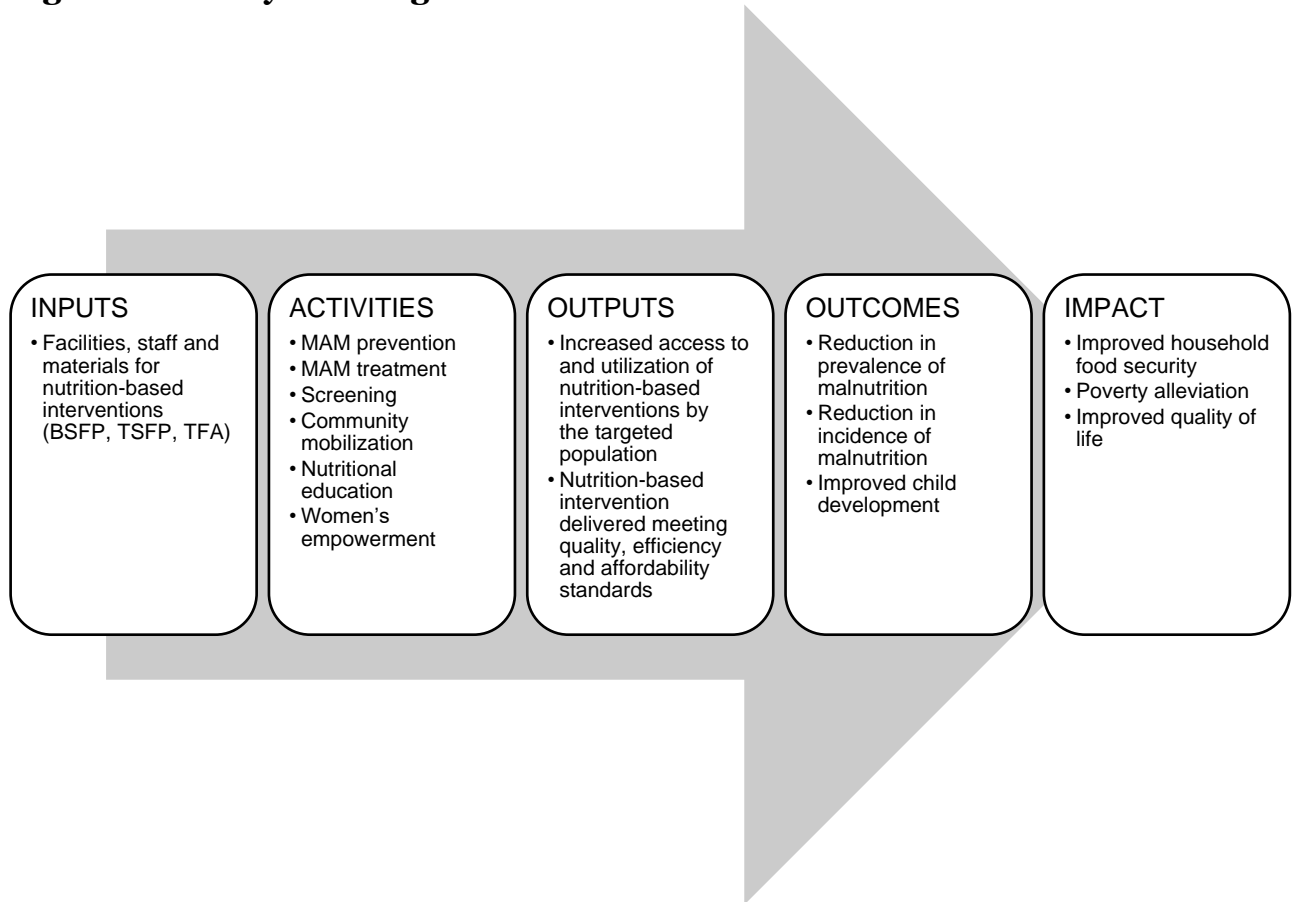
16. The low coverage of MAM interventions (as compared to SAM interventions) affects the sustainability and scaling up of expectations of the integrated CMAM approach, as recommended by the World Health Organization (WHO). The most recent Lancet Series for Maternal and Child Nutrition finds that nutrition-sensitive interventions and programmes in agriculture and social protection have the potential to enhance the scale and effectiveness of nutrition-specific interventions.<sup>10</sup> The theory of change for MAM interventions is predicated on the belief that MAM prevention, treatment, and screening, alongside secondary activities such as community mobilisation, nutritional education, and women's empowerment, can lead to reductions in the incidence and prevalence of chronic and acute malnutrition in Chad. This, in turn, lowers MAM prevalence, improves child development and leads to positive impacts on food security, poverty and quality of life. Figure 2 illustrates this theory of change.

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<sup>8</sup> Black, M.D et al. *The Lancet Series for Maternal and Child Nutrition: Executive Summary*. The Lancet. Vol. 371, Issue 9608, pp.243-260. June 6, 2013. Available from: <http://www.thelancet.com/series/maternal-and-child-nutrition>

<sup>9</sup> UNICEF Global Evaluation of Community Management of Acute Malnutrition, 2013

**Figure 2. Theory of change**



### *Evaluation questions*

17. The primary evaluation question of the study is:
  - What is the impact of MAM prevention interventions on the incidence and prevalence of MAM in under 2 year olds under different levels of access to MAM treatment?
18. The following secondary questions were also investigated:
  - What is the effect of prevention on MAM status of children aged 6-23 months during the lean season?
  - Are there any gender differences in impacts?
  - Are there any age differences in impacts? (The siblings of BSFP recipients, ages 24-59 months, will also be included for anthropometric measurement).

### **Evaluation Design, Methods and Implementation**

19. This evaluation specifically focused on the impact of MAM prevention, as well as the impact of prevention alongside treatment. Three main hypotheses were tested:
  - Hypothesis 1: BSFP reception has a positive effect on the incidence of MAM in the target group (6-23 months)
  - Hypothesis 2: BSFP reception together with access to TSFP has a more positive impact on the incidence of MAM than reception of BSFP alone
  - Hypothesis 3: BSFP reception has positive spill-over effects on the incidence of MAM among siblings.



20. The evaluation design used both quantitative and qualitative data to capture the effects of the programme on individual outcomes. Quantitative data were obtained through the administration of household questionnaires and the analysis of recorded information regarding anthropometric measurements. This took place in two rounds (June 2016 and November 2016) and was in line with WFP seasonal interventions. Qualitative data were obtained through informal interviews and meetings with population groups, relevant stakeholders, NGOs, and WFP staff. These were used to inform the interpretation of the quantitative analysis. The primary qualitative and quantitative data have been systematically triangulated with information obtained through secondary sources to inform the research findings and conclusions.

21. Beneficiaries were identified based on targeting criteria established by WFP and cooperating partners. Study sites were identified through a list of BSFP beneficiary villages. The evaluation was not implemented as a randomised control trial because allocation was dependent on WFP and partner policies. However, a valid counterfactual was constructed by identifying two study groups: (i) those who received all planned BSFP distributions (intervention group); and (ii) those who did not receive any BSFP (control group). The final sample size was 1,230 children aged 6-23 months from 114 villages. Of the 1,230 children measured at baseline, and end line, 766 were in the treatment group, and 464 were in the control group and received no treatment.

22. An overlapping sample of observations with similar characteristics was constructed and tested for selection and attrition bias. This sample was then subjected to an analysis of covariates (ANCOVA) approach, which controlled for unobserved child characteristics by monitoring for baseline nutritional status. Regression and treatment effect models along with propensity score matching (PSM) were used to estimate the average treatment effect (ATT) on the cohort of children treated.<sup>11</sup>

23. In order to assess heterogeneity of the effect of the BSFP on end-line MAM incidence, tests were conducted for relevant variables,<sup>12</sup> measuring the presence of determinants of acute malnutrition on both study groups.

## **Impact and Analysis of Findings**

24. The evaluation findings are intended to (i) provide insights for nutrition actors in Chad on optimizing design for addressing MAM, and (ii) provide inputs to the current national nutrition protocols and influence the WFP MAM programmes. The main findings presented here summarize the impact analysis and key points of the comparative analysis between BSFP and n-BSFP heterogeneity tests, using gender and age as indicators, and the additional correlations that were investigated. Specifically, this evaluation aimed to measure the impact of the WFP BSFP intervention on children's MAM status in Chad.

### *Descriptive analysis of sample*

25. Of the 1,915 children in the global sample, 64 percent (1,230 children) were aged 6-23 months during the baseline survey, and 36 percent (685 children) were aged 24-59 months. Of the total 1,915 children, 48 percent (911) were girls, and 52 percent (1,004)

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<sup>11</sup> Potential selection and attrition bias can arise in the analysis if children receiving all BSFP rations have different characteristics than those who do not receive any. The evaluation dealt with biases in the following way: (i) the analysis used an overlapping sample with similar characteristics; (ii) instrumental variables were used to test for potential selection bias in uptake; and (iii) a two-stage Heckman estimator was used to test for attrition bias.

<sup>12</sup> Gender, age, number of siblings less than 60 months old, number of income sources, main household livelihood source, water and sanitation conditions, BSFP product type, other assistance received, ration sharing patterns.

were boys, with a similar repartition in both age groups. For ages 6-23 months, the BSFP group included 62 percent (766) children and the n- BSFP group included 38 percent (464) children.

#### *Nutritional status of children 6-23 months old*

26. Overall, the percentage of MAM cases at end line (14 percent) was half that of the baseline results (28 percent), and this change was seen for both sexes. Additionally, the youngest age group (6-11 months), as compared those aged 6-23 months, had the highest percentage of MAM for both sexes.

#### *Nutritional status of children 24-59 months old*

27. The percentage of MAM cases at end line reduced by 10 percentage points, and the proportion of normal cases rose from around 68 percent at baseline to 83 percent at end line, showing an amelioration of the nutritional condition of children aged 24-59 months after the intervention.

#### *Impact analysis*

28. The three hypotheses analysed focused on children who either received all BSFP distributions or no BSFP distributions. Since the evaluation's main interest was the effect on the group that received BSFP, all reported estimates are average treatment effect on the treated (ATT).

29. Hypothesis 1: BSFP reception has a positive effect on the incidence of MAM in the target group (6-23 months)

**Table 1. Impact of BSFP reception on MAM incidence**

VARIABLES	(1) OLS-FULL	(2) OLS	(3) PROBIT	(4) IPW (PSM)	(5) IPWRA (PSM)
BSFP	-0.0227 (0.0289)	-0.0509 (0.0331)	-0.0465* (0.0258)	-0.0507* (0.0303)	-0.0800*** (0.0301)
Observations	1,230	810	810	810	810
R-squared	0.181	0.232	0.277	-	-

Note: Robust standard errors in parentheses. For the OLS and PROBIT models, standard errors are clustered at village level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 PROBIT model: Coefficient is marginal effect calculated at the mean. The R-squared is Pseudo R-Squared

Table 1 provides the key coefficient from various statistical models used for estimation. Comparing the reference model (1) to the remaining models, which are restricted to the overlapping sample, it can be seen that estimating the regression model on the entire sample seems to lead to an underestimation of the effect, since all the remaining models consistently estimate the effect to be higher. The estimated effect of receiving all versus no BSFP distributions in the four main models (columns (2) to (5)) is a 4.7-8.0 percentage point reduction in the likelihood of becoming MAM.

30. Hypothesis 2: BSFP reception, together with access to TSFP, have a more positive impact on the incidence of MAM than reception of BSFP alone

**Table 2. Effect of TSFP access (more/less 2 hours) on MAM incidence in BSFP group**

VARIABLES	(1) OLS	(2) PROBIT
HCLessThan2h	-0.0364 (0.0277)	-0.0365** (0.0180)
Observations	766	766
R-squared	0.212	0.272

Note: Sample is all children age 6-23 months who received all BSFP distributions. Standard errors (in parenthesis) are clustered at village level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. PROBIT: The R-squared is Pseudo R-Squared.

The reduction in the incidence of MAM associated with having good versus poor access to a health or medical centre (as proxy for access to the TSFP) was around 3.6 percentage points. However, the evidence to support the hypothesis was partial. When testing for the interaction between TSFP and BSFP, the evaluation found that BSFP reception had the same impact on MAM incidence when access to TSFP was poor, and when it was good.

31. Hypothesis 3: BSFP reception has positive spill-over effects on the incidence of MAM among siblings

**Table 3: BSFP impact for siblings age 24-59 months**

VARIABLES	(1) OLS-FULL	(2) OLS	(3) PROBIT	(4) IPW (PSM)	(5) IPWRA (PSM)
BSFP	-0.0323 (0.0442)	-0.0713 (0.0507)	-0.0023 (0.00397)	-0.0131 (0.0486)	-0.0274 (0.0373)
Observations	685	336	323	336	336
R-squared	0.312	0.428	0.616	-	-

Note: Robust standard errors in parentheses. For the OLS and PROBIT models, standard errors are clustered around village level. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. PROBIT model: Coefficient is marginal effect calculated at the mean. The R-squared is Pseudo R-Squared. Notice, 13 observations have been dropped due to collinearity.

The analysis of the third hypothesis in Table 3 found no statistically significant difference between the MAM incidence for children aged 24 to 59 months in relation to whether a younger sibling received BSFP or not.

### *Heterogeneity and other results*

32. No interaction was observed between the effect of the BSFP and gender: the impact of the BSFP in MAM status was the same in girls and boys. Additionally, there was no evidence that the total number of children in the household aged below 5 years significantly interacted with the MAM incidence of 6-23 month olds receiving BSFP.

33. Although there was a reduction of MAM in the BSFP group, the impact of the BSFP on the MAM incidence of 6-23 month olds receiving BSFP was independent of

the number of the household revenues sources, and heterogeneous with respect to the main household income source. The BSFP has a significant and positive effect in those households whose main livelihood source is agriculture.

34. The heterogeneity analysis using distance of the household to the water source found no statistically significant effect.

35. The evaluation could not identify differential effects of the different BSFP products distributed on the incidence of MAM of 6-23 month olds because reception of one product or the other (Supercereal Plus or Plumpy Doz as per the national protocol) was geographically determined and could not be isolated from other geographic contextual factors.

36. Based on statistical estimates, there did not seem to be an interaction between MAM incidence of 6-23 month olds receiving the BSFP and reception of other types of assistance.

37. The analysis on sharing of BSFP ration with siblings and other relatives found that sharing had no statistically significant effect on MAM incidence for children receiving the ration. When attempting to use frequency of feeding as a proxy for amount consumed, the sub-samples were found to be too small and hence this proxy was dropped as a control. The evaluation was thus unable to analyse the relationship between amount consumed and MAM outcomes.

## **Discussion**

38. BSFP provision during the lean season in Chad has proved to be effective in reducing MAM incidence in children aged 6-23 months. However, the interpretation of these results must take into consideration the fact that the BSFP intervention under study was accompanied by other forms of seasonal food assistance targeting the same households, for the same period of time. While the evaluation of the separate, or individual, effect of each intervention was not an aim of the evaluation, it cannot be ignored.

39. Further, WFP seasonal interventions still have some limitations, mainly due to operational and financial issues, which mean the BSFP is not implemented fully as designed. Geographical targeting for seasonal assistance is limited and does not provide full coverage for eligible children aged 6-23 months.

40. The WFP is a key player when it comes to food assistance in Chad. During the lean season, other actors implement initiatives to address food insecurity, which necessitates careful coordination to avoid duplication and in order to maximise targeting according to need. As the targeting calendars and areas are decided on at the start of the lean season itself, the planning schedule is very tight for effective coordination of programmes in the same areas.

41. The identification of areas for intervention is a consensual twice a year exercise<sup>13</sup> that includes all food security country actors, including the Government of Chad, and uses a harmonised framework approach to determine priority departments and sub-prefectures for food security and food assistance seasonal actions. However, nutritionally vulnerable populations in other geographical areas are often left out. Within the geographically targeted areas, the WFP caseload is adapted to available

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<sup>13</sup> One in November at the start of the agricultural campaign and one by March before lean season

budget and not to need, meaning that the final number of beneficiaries is ultimately determined by the funds received (or expected).

42. The WFP choice of pairing TFA and BSFP distributions aims to reduce the risk of redistribution of a child's ration amongst household members. However, this approach presents limitations as the intervention becomes more product-oriented, thus missing crucial preventive components aimed at sustained behavioural changes (i.e. promotion of BF, adequate hygiene practices, etc.). Additionally, this product-oriented approach overlooks children aged 6-23 months from households that are not classified as food insecure. These households may have nutritionally vulnerable groups whose nutritional status will deteriorate during the lean season and who could have benefitted from a BSFP protection ration had WFP had enough funds.

43. BSFP is not designed to address the underlying causes of malnutrition, and only partially addresses seasonal malnutrition. Instead, it covers a wide range of roles aimed at providing intermediate relief for nutritionally vulnerable populations. As a result of this, the BSFP intervention alone does not seek to engage in long term nutritional development, but remains a short-term solution for addressing acute malnutrition. For the incidence of malnutrition to be reduced in a sustainable manner, BSFP needs to be integrated with longer-term prevention interventions, and combined with other sector approaches in health, WASH, and food security.<sup>14</sup> In the context of Chad, this means ensuring that seasonal food insecurity and other seasonal factors that link to an increase in infections or inadequate caring practices are taken into consideration in order to reduce seasonal peaks in wasting.<sup>15</sup> Furthermore, BSFP is not a strategy adapted to the specificities of particular contexts (i.e. there is no differentiation of specificities of livelihoods survival strategies).

### **Points for Consideration**

44. The key evaluation finding, that BSFP is effective in reducing MAM incidence in children aged 6-23 months, provides insights into potential evidence-based operational or policy improvements. Points for consideration primarily concern the World Food Programme country office, but also apply to higher technical and policy-making levels, as well as global and local actors (NGOs, other United Nations agencies, donors and academic bodies among others) who aim to improve the way MAM is addressed. Although the evaluation did not evaluate the WFP blanket supplementary feeding programme intervention as such, but rather its impact, some of the points listed below refer to programming and operational aspects of the intervention that, if improved, might increase the impact of blanket supplementary feeding MAM prevention.

45. **Point 1:** Explore alternative financing mechanisms and establish agreements with relevant funding bodies and agencies for programming food assistance interventions in a more predictable, systematic and collaborative manner. This will ensure increased coverage (geographical and individual) of the BSFP and thereby extend the positive effects of the programme on MAM incidence to a larger affected population.

This point is addressed to actors such as the World Food Programme's Regional Office and Headquarters who have the capacity and agency to mobilise extended funding and

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<sup>14</sup> Bloss E, Wainaina F, Bailey R. Prevalence and Predictors of Underweight, Stunting, and Wasting Among Children Aged 5 and Under in Western Kenya. *J Trop Pediatr* 2004; 50:260-70. 2004. Available from: <http://advances.nutrition.org/content/3/2/242.abstract>

<sup>15</sup> Seasonality: The Missing Piece of the Undernutrition Puzzle? Action Against Hunger. December 2013. Available from: <http://www.actionagainsthunger.org.uk/mediaroom/latest-news/seasonality-the-missing-piece-of-the-undernutrition-puzzle>

coverage not only for the Chad office, but across the region. Due to the WFP caseload being adaptive to their budget and not to actual need, WFP interventions are often unable to cover the entire eligible population. Establishing partnerships and garnering additional funding resources in a timely manner can assist with the persistent and chronic issue of MAM prevalence and incidence in Chad and the region.

46. Point 2: To improve access to the TSFP, explore alternative approaches for increasing TSFP coverage. For example: designing, deploying, validating and testing locally produced nutritional products could be an alternative way to reduce the cost of the treatment (by reducing transport costs) and consequently, if combined with community-based delivery approaches, increase access to treatment.<sup>16</sup>

The combination of interventions for seasonal assistance implemented in 2016 provided evidence that MAM incidence in children aged 6-23 months is reduced during the lean season. The TSFP is implemented by WFP and the Ministry of Health under extremely stringent criteria (GAM > 10 percent), and largely without direct supervision beyond basic logistics and follow up of activities. WFP is mainly the nutrition product provider, and, as such, has little involvement in technical and practical aspects of the TSFP implementation. The capacity of the Ministry of Health to extend TSFP services is limited. This highlights the need to find supplementary support for WFP nutrition programmes, especially at the country office level, to promote sustainable and comprehensive care for eligible populations. Well timed action in this regard can increase the ability of WFP to benefit populations in need of food assistance programmes, and assist in the successful prevention of excess MAM incidences.

47. Point 3: Further research may be needed to better understand the interactions between the BSFP, contextual factors, and child-specific conditions, and to separate the effect of the BSFP from the effect of other seasonal interventions that run in parallel. Additional issues to be explored include the sustainability of the actual seasonal assistance model, and alternative strategies for preventing peaks of MAM incidence after the lean season. The cost-effectiveness of the intervention should be studied with specific reference to the adequate resourcing of the programme.

Due to the choice of WFP to pair targeted food assistance with BSFP distributions, the intervention becomes product-oriented, missing potentially essential preventative components aimed at sustained behavioural changes. It is thus important to address underlying causes of malnutrition in combination with multi-sectoral solutions in lieu of the short-term solutions currently employed. This point calls for action at the country office level to encourage not only multi-stakeholder cooperation in malnutrition interventions, but also to revisit the scope and long-term intentions of WFP's BSFP programming.

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<sup>16</sup> Community-based initiatives for the management of MAM cases beyond the structures of the national health system were recommended during a recent IMAM review in Chad (Revue nationale de la prise en charge intégrée de la malnutrition aiguë (PCIMA) au Tchad, novembre 2015 – DNTA – UNICEF). The high case load of MAM cases might also be detrimental for the management of SAM cases which required closer and more specialised follow-up. Previous evaluations have also recommended seeking ways for collaboration with social welfare instances to integrate MAM prevention and treatment into different policy and operational agendas (FMI 2015. Tchad: *Document de Stratégie Pour la Réduction de la Pauvreté – Note Consultative Conjointe sur le Rapport de Suivi 2013 du Plan National de Développement 2013-2015*; Rapport du FMI No. 15/125; 10 avril 2015).

Office of Evaluation  
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