

# ORIE Research Summary

Nutrition Research in Northern Nigeria

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## Nutritional status in northern Nigeria, prevalence and determinants: a review of evidence

This summary outlines the approach, key findings and conclusions of a review of literature on the prevalence and determinants of child and maternal undernutrition in northern Nigeria, and direct and indirect interventions to tackle undernutrition, globally and in Nigeria, undertaken in 2012.

The aims of the evidence review were to: assess gaps in knowledge; support the design of the WINNN and ORIE programmes; review interventions to address undernutrition in Nigeria and globally; and inform DFID on possible pilots to tackle underlying determinants of childhood stunting in northern Nigeria.

### Approach

This was a desk-based review based on documents available on the internet from the last 15-20 years. Studies were selected on the rigour of their methodologies, including randomised control trials, but excluding meta reviews. Literature on Nigeria was located by use of a double-pronged 'deep search' using 'keywords' to create search strings utilising Boolean operatives. These were then applied to a number of 'deep search' indexes (Econlit; IBSS; Web of Knowledge; Wiley's Online Library; JSTOR; PubMed), each of which searches thousands of journals. The same strings were used to search the grey literature utilising Google, and a number of multinational organisation websites (World Bank, IFPRI, UNICEF, WHO, FAO). Then backwards and forwards citation was used when relevant texts were found. In instances where no experience to Nigeria is related, this is indicative of a paucity of quality, or in most cases any data on the topic in northern Nigeria. Unpublished nutrition surveys carried out by WINNN partners were also reviewed.

### Key findings

#### 1. Nutritional status in Nigeria and the North

There have been regular national nutritional status surveys, with four in the last ten years. Data for the last three years (2010, 2012) are available for the five programme states through Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys. All of these surveys confirm that stunting consistently exceeds 50% (with the exception of some seasonal variations in some states), well in excess of the national average. There are no clear trends that the situation is improving. Information on maternal and girls' nutritional status in the five WINNN programme states drawn from the recent SMART surveys indicate that 15-45% of adult women are classified as thin in terms of body mass index (BMI), and that adolescent girls are particularly at risk.

#### 2. Determinants of maternal and child undernutrition

Household economic status, maternal education and women's empowerment are important predictors of maternal and child undernutrition in northern Nigeria. →

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# ORIE Research Summary

- Maternal education and wealth:** Large data sets, especially the National Demographic Health Survey (NDHS), show that maternal education and wealth are important factors associated with nutrition status.
- Health care facility usage:** Maternal and child health facilities in the northern states are poor, as are health seeking behaviors. Although averages vary by state, three quarters of all women have never sought health advice, and as few as 10% of deliveries are carried out in health facilities.
- Immunisation:** Immunisation rates are also very low, with less than 1 in 10 children receiving all recommended doses. Evidence shows that undernutrition can be a consequence of illness.
- Household economic status:** Across rural and urban areas in Nigeria, household economic status has statistically significant and positive effects on child nutrition.
- Women's work and women's empowerment:** Evidence suggests that allowing mothers to work to earn their own income would contribute to the reduction of child malnutrition in the regions and zones that have the highest burden of malnutrition in Nigeria (especially North West and Sudano-Sahelian savannah). The independent effect of women's work to earn income for child nutrition was established with positive and significant effect on child growth in regions with high levels of child malnutrition, especially the North West (where the proportion of women working is lowest at 54%). Therefore, allowing women to earn their own income would substantially contribute to the reduction of child malnutrition in areas where it is highest.
- Food consumption:** Data are sparse; only one national survey has been carried out in 2002. It found that in the five Programme states, the semi arid crops of sorghum, millet and cowpeas generally form the bulk of the diet, and a majority of households consumed fruit once or twice a week. Protein intake of children in the North Western zone of Nigeria is low because their diet is mainly cereal-based with no supplementation.
- Infant feeding:** According to the 2008 NDHS, at national level, exclusive

**Figure 1:** Prevalence of children under 5 years who are stunted



Map created by Olive Ohiaeri September 2009 Scale 1:6,500,000 Source of data MICS (2007)  
 Figure courtesy of Hall, A. and Bohen, C. (2009) A Review of Malnutrition in Nigeria and the Potential Role of Homestead Agriculture to Improve the Nutritional Status and Income of Poor Rural People

breastfeeding lasts for less than a month: the mean duration of any breastfeeding is about 18 months, and complementary foods, usually normal household foods, are introduced at an early age. The data suggests that mothers breastfeed for longer in the North West and North East.

### 3. Direct nutrition interventions

Globally, few examples of interventions show unambiguous links with improving nutrition, and few of these are found in contexts similar to the five WINNN states e.g. seasonality of agricultural production, semi secluded mothers and a weak health infrastructure.

- Community Management of Acute Malnutrition (CMAM):** There are no widespread CMAM interventions or evaluations of their effectiveness in Nigeria. Distance to health centre is an important barrier for many rural households. Rural communities in the North Western states show strong social cohesion and willingness to ensure that malnourished children receive care.
- Infant and Young Child Feeding Practices (IYCF):** Global information shows that well integrated infrastructure supports women to adopt care procedures that maximise their children's health. In Nigeria, there have been some small-scale hospital and clinic-based attempts to encourage IYCF, but the review did

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# ORIE Research Summary

not find any national or regional programmes. In North Western states, a more developed form of rural health care clinic is needed. In areas of food insecurity, low levels of education and early marriage for women, the fundamentals for improved IYCF are weak.

- **Micronutrient supplementation:** Vitamin A capsule supplementation appears to be the only nationwide supplementation programme. It is integrated with immunisation drives and child health weeks, with two rounds a year. NDHS surveys show that around half of children under five years have received vitamin A supplementation in the recent past. However, the programme's logistics need to be improved to reach more children.
- **Deworming:** Global evidence shows that this can be an effective intervention to improve nutritional status. However, the proportion of children in North West and North East Nigeria given deworming tablets in the six months previous to the NDHS 2008 survey was 4.0% and 5.7% respectively – the lowest coverage in the country. Such a low level of coverage means assessing the impact is difficult.

#### 4. Indirect nutrition interventions

Indirect nutrition interventions, such as those to improve agriculture and food production, household income and food security, social protection, gender roles and relations, health services, and access to improved water and sanitation, have the potential to improve nutritional outcomes in Nigeria if they are well designed.

- **Health services:** Primary health care services reach less than 20% of Nigeria's population and this is accentuated for the remote rural northern states. There has been a slow roll out of the maternal and child health programme and its coverage has been poor. With this weak infrastructure it is difficult to suggest any 'piggy backing' of other components to improve outreach of interventions.
- **Agriculture:** The evidence as to the impact of agricultural interventions on incomes (and therefore a possible means to improve nutrition) is ambiguous. One Nigerian intervention - Improving Agriculture and Rural Markets in Nigeria – may have potential in this regard but there is no strong evidence to prove this contention.

- **Food security:** There is only basic descriptive information about food security interventions in Nigeria, and no information on their impact. These interventions include the National Special Program for Food Security (NSPFS) and subsidy programmes for fertiliser and other farm inputs. To have an impact on child nutrition, interventions must reflect the conditions in which undernourished children live and must involve women as beneficiaries of these programmes.
- **Social protection:** There is emerging evidence that social protection programmes (including public works) may have a significant impact on household nutrition. In Nigeria there are various interventions (such as COPE), some at the pilot stage, but no evidence as to their impact on child nutritional status. It would be timely to use such programmes as a pilot and evaluate them rigorously. The targeting of a programme to adolescent girls may be particularly effective, helping them get an education, delaying marriage and breaking the intergenerational aspects of undernutrition.
- **Microcredit:** There is some global evidence to suggest that microcredit programmes improve household incomes, and could result in improved household nutrition, especially if placed in the hands of women. There is some evidence to show that microcredit →

« Interventions must reflect the conditions in which undernourished children live. »»

Figure 2: Prevalence of children under 5 years who are wasted

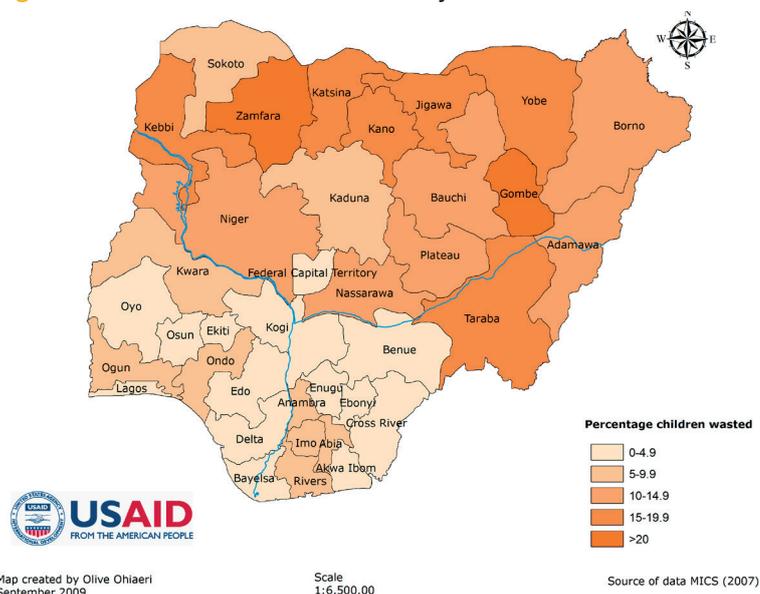


Figure courtesy of Hall, A. and Bohem, C. (2009) *A Review of Malnutrition in Nigeria and the Potential Role of Homestead Agriculture to Improve the Nutritional Status and Income of Poor Rural People*

# ORIE Research Summary

programmes have been successful in Nigeria, although there is a need to design innovative schemes to reach women. Women already run their own revolving credit schemes (called *adashi*) and these might be supported with extra resources.

- **Water and sanitation:** Research evidence underscores the importance of water and sanitation in reducing a broad range of infections and so improving nutritional status. Nigeria's infrastructure for providing piped water is weak, and in rural areas alternative approaches need to be followed, such as community-led total sanitation.
- **Women's empowerment:** Many interventions could be examined for their impact on women's empowerment, and, in turn, on nutrition. But in a region where much of what women (who are semi-secluded) do is achieved behind closed doors, interventions must be dovetailed into activities where women already interact with government services, especially, therefore, health services.

## 5. Policies and governance affecting nutrition

A review of global evidence shows that the key aspects of effective nutrition governance are capability across sectors, accountability based on demands that officials take action, and responsiveness to meet the needs of the most vulnerable. In Nigeria, a review shows a plethora of plans and activities but a lack of commitment. There are very few direct interventions in nutrition. Targets are set and plans laid out addressing underlying and basic causes, but there is no strong commitment or budget lines. Nutrition planning has received a new boost with the SUN movement and there is an infrastructure to build on. However, much power lies in the 36 states and the federal level can only coordinate, promote and encourage.

## Conclusions

For a region of its size, and given the severity of nutrition problems, data for the north of Nigeria are very limited. The greatest gap is quantitative information on food consumption. More qualitative information, and better interpretation of existing data, is also needed. There is also a need to better understand how underlying determinants of household food security, care of children, health services and the environment have an impact on child nutrition, and the interdependencies between them. And existing research focuses on national (state) and village/clinic levels, with little in between; representative surveys of groups of villages are needed.

The authors make suggestions for pilots in the area of household food security, social protection and microcredit for women; as well as interventions for nutrition-sensitive development in health, governance and social development.

There is scope for DFID to enhance the nutrition sensitivity of some of its existing programmes in northern Nigeria. For example, the Partnership for Transforming Health Systems (PATHS) programme might examine how nutrition can be better integrated into health care services of all types.

DFID also has programmes in governance and social development – e.g. State Partnership for Accountability Responsiveness and Capability (SPARC) and Mobilisation for MDGs (M4M) programmes – where the importance of nutrition as a governance issue could be mainstreamed, as well as the demand for nutrition services enhanced.

## ORIE and WINNN

ORIE is an independent component of the UK Government's Department for International Development (DFID) funded Working to Improve Nutrition in Northern Nigeria (WINNN) programme. WINNN is working to improve the nutritional status of 6.2 million children under five years of age in five states of northern Nigeria. ORIE is carrying out research to determine the impact of WINNN and generate important research on key evidence gaps regarding solutions to undernutrition in northern Nigeria.

## Credits

This ORIE Research Summary was written by Leah Murphy. It is based on the ORIE Evidence Review report by Richard Longhurst and Alex Cornelius (August 2012). Readers are encouraged to quote and reproduce material from ORIE Research Summaries in their own publication. In return, ORIE requests due acknowledgement and quotes to be referenced as above.

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