

Technical Brief: Socio-Cultural, Economic, and Environmental Determinants of Child Malnutrition in Angola Findings from DHS 2015-16 and the ANGEL Baseline Study (2025)

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PURPOSE

This technical brief summarizes findings from a mixed-methods study conducted under the learning agenda of the Angola Nutrition for Growth, Education and Learning (ANGEL) Program funded by the U.S Department of Agriculture through the McGovern Dole Food for Education and Child Nutrition Program. It investigates the endogenous socio-cultural, economic, and environmental factors associated with malnutrition among school-age children in Angola.

The study draws on nationally representative Demographic and Health Survey (DHS) data from 2015-16 and quantitative and qualitative data collected through the 2025 ANGEL baseline assessment in Benguela, Cunene, and Huila

KEY FINDINGS

Child malnutrition is strongly linked to dietary diversity and household vulnerability

Analysis of DHS data identified two consistent predictors of child stunting:

- **Low household dietary diversity**
- **Higher numbers of children in the household**

Children living in households with more diverse diets were significantly less likely to be stunted. Larger households with more children experienced greater nutritional pressures, increasing the likelihood of chronic undernutrition.

Huila faces consistently worse nutrition outcomes

Across all datasets, Huila Province exhibited the poorest nutrition indicators of the three provinces:

- Lowest average Height-for-Age Z-scores (HAZ)
- Highest Household Food Insecurity Access Scale (HFIAS) scores
- Lowest student nutrition scores
- Highest reported levels of student hunger

These findings point to persistent geographic disparities in nutrition and food security.

Household food security depends heavily on income stability

Food insecurity was strongly associated with:

- Income loss
- Crop failure
- Rising food prices
- Drought exposure

Conversely, households receiving income from:

- Market activities
- Crop farming
- Small businesses
- Remittances
- Rental income
- Government assistance

reported significantly lower food insecurity.

Infrastructure and sanitation matter

Households with:

- Improved toilet facilities
- Improved water sources
- Greater asset ownership

were more food secure and showed better nutrition outcomes among children.

Hunger affects learning

Three out of four students reported feeling hungry during school hours, and more than half reported difficulty concentrating in class. Teachers consistently linked poor concentration, absenteeism, and school dropout to hunger and food insecurity.

STUDY OVERVIEW

DATA SOURCES

DHS 2015-16

Nationally representative survey data were used to examine determinants of child stunting among children under five years of age.

- Initial sample: 14,332 observations
- Analytic sample: 3,003 observations after cleaning
- Outcome variable: Child stunting (HAZ < -2)

ANGEL Baseline Survey (2025)

Data were collected from schools and households in Huila, Cunene, and Benguela.

Dataset	Sample Size
Students	1,275
Households	858
Teachers	12
Key Informants	12

Outcome measures included:

- Household Food Insecurity Access Scale (HFIAS)
- Student nutrition score (number of meals consumed the previous day)
- Self-reported hunger and concentration difficulties

CONTEXT: CHILD MALNUTRITION IN ANGOLA

Despite substantial improvements since the end of the civil war, malnutrition remains a major challenge in Angola.

Key concerns include:

- Chronic food insecurity
- Low dietary diversity
- Drought-related agricultural losses
- Poverty and income volatility
- Limited access to water and sanitation services

Research consistently demonstrates that malnutrition is associated with low parental education, poverty, poor infrastructure, and environmental shocks, particularly in rural areas.

QUANTITATIVE FINDINGS

1. Determinants of Child Stunting (DHS)

The logistic regression model identified three important predictors:

Factor	Association with Stunting
Dietary diversity	Reduced likelihood
Number of children in household	Increased likelihood
Residence in Huila	Increased likelihood



2. Determinants of Household Food Insecurity

Factors associated with greater food insecurity

- Household income reduction
- Crop failure
- Food price increases
- Older respondent age

Factors associated with lower food insecurity

- Market-based income
- Crop farming income
- Small business income
- Remittances
- Government assistance
- Rental income
- Improved water sources
- Improved sanitation facilities
- Greater asset ownership

The largest increases in food insecurity were associated with income shocks, highlighting household vulnerability to economic disruption.

3. Determinants of School-Age Child Nutrition

Student nutrition scores were significantly associated with:

Positive influences

Government assistance
Small business income
Improved sanitation facilities
Polygamous household structures

Negative influences

Residence in Huila
Drought exposure

Improved toilet facilities demonstrated one of the strongest positive associations with child nutrition, underscoring the connection between nutrition and broader household living conditions.

QUALITATIVE FINDINGS

Qualitative interviews reinforced and contextualized the quantitative results.

Drought as a primary driver of hunger

Parents, teachers, and government officials repeatedly identified drought as the most important factor contributing to food insecurity.

Participants described:

- Reduced agricultural production
- Seasonal hunger
- School absenteeism during food shortages
- Increased reliance on drought-tolerant crops such as sorghum and cassava

Limited dietary diversity

Student dietary recalls revealed diets heavily dependent on:

- Funge (maize porridge)
- Beans
- Small quantities of vegetables

Many children reported skipping breakfast entirely, while some consumed only funge throughout the day.

Hunger undermines learning

Teachers reported that hunger contributes directly to:

- Poor concentration
- Reduced attendance
- Lower classroom participation
- Increased dropout risk

Parents confirmed that many children attend school without breakfast and often eat only after returning home.



PROGRAM IMPLICATIONS FOR ANGEL

The findings suggest that nutrition interventions should be integrated with broader efforts to improve household resilience and food security.

Priority Intervention Areas

1. Improve dietary diversity

- Nutrition education for caregivers
- Promotion of diversified household food production
- Support for consumption of nutrient-dense foods

2. Strengthen school feeding systems

School feeding can:

- Reduce hunger during school hours
- Improve attendance and concentration
- Support learning outcomes
- Increase dietary diversity among children

3. Expand regenerative agriculture

Given the strong role of drought:

- Promote sorghum, cassava, sweet potato, and other drought-tolerant crops
- Support regenerative agricultural practices
- Build resilience to seasonal food shortages

4. Support local procurement

Linking school feeding programs to local farmers could generate dual benefits:

- Improve children's access to nutritious meals
- Create stable markets and income opportunities for farming households

PROGRAM IMPLICATIONS FOR ANGEL CONTINUED

5. Target Huila Province

Because Huila consistently showed the poorest nutrition and food security outcomes, geographic targeting should be prioritized for:

- School feeding
- Nutrition education
- Livelihood support
- Water and sanitation investments

6. Address multidimensional poverty

Nutrition interventions should be coordinated with efforts to improve:

- Household livelihoods
- Access to sanitation
- Water infrastructure
- Social protection systems



CONCLUSION

Malnutrition among children in Angola is driven by a complex interaction of dietary, economic, environmental, and geographic factors. Across both nationally representative DHS data and the ANGEL baseline survey in three provinces, dietary diversity emerged as the most important protective factor, while household food insecurity was strongly shaped by income shocks, drought, and poverty. Huila Province consistently demonstrated the greatest vulnerability.

For the ANGEL Program, the evidence supports an integrated approach that combines school feeding, nutrition education, regenerative agriculture, livelihood strengthening, and targeted support for high-risk geographic areas. Such investments can simultaneously improve child nutrition, educational outcomes, and household resilience.

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ANGEL

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