



The State of Food and Nutrition Security in Liberia

COMPREHENSIVE FOOD SECURITY AND NUTRITION SURVEY **2010**



OCTOBER 2010



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Data collected in May - August 2010

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Contents

	Foreword	iii
	Acknowledgements	iv
1	Context and Background	1
2	Food consumption in Liberia	2
3	Vulnerabilities in post-conflict situation	4
4	State of food security	7
5	State of nutrition security	8
6	Towards ensuring food and nutrition security in Liberia: recommended actions	13

Key Messages

Food security

- Food security status is improving compared to 2006 but remains unacceptably high with 41% of the population's food intake below acceptable.
- Liberia remains highly dependent on foreign markets for food (two-thirds is imported). This food import dependency is increasing.
- Structural problems of inequality, poverty, unemployment and food insecurity that led to the 14 years of civil conflict remain largely unaddressed.
- Under- and unemployment, especially among young people, is very high.
- The farm sector which employs two thirds of the 3.5 million population is underperforming due to low investment and impact of the civil war. However, rice production, helped by the 2008 food price crisis, is gradually mounting. Liberia is a cash-crop oriented economy and issues of competitive food imports, limited infrastructure and pressure to keep food prices low for the urban population hinder agricultural food crop production.
- Infrastructure development including roads and bridges remains a key government challenge in order to facilitate access to markets.
- Education achievements are low. Net primary school enrolment is as low as 65%. Secondary school enrolment is even lower at 38%.

Nutrition

- Thirty-five percent of mortality in under-five year old children is related to malnutrition
- The 1,000 days from the beginning of pregnancy to the second year of life of the child is the critical period to intervene for nutrition
- Children under two years of age consume relatively little food, but need nutrient dense food, good caring practices and effective treatment of childhood illnesses to avoid malnutrition
- Improved infant and young child feeding is critical for children's nutrition (exclusive breastfeeding, continued breastfeeding and complementary nutrient dense foods)
- Stunting continues to be a significant huge problem in children
- Acute malnutrition is improving and efforts should be sustained for its effective management in order to see significant impact on child mortality.
- The double burden of malnutrition is increasingly becoming a public health concern with the occurrence of undernutrition among children and overnutrition among older women.
- Malnutrition in children is closely related to malnutrition in women. Greater efforts are needed to improve nutrition in women and delay women's first birth until after completion of adolescent growth.

Foreword

The number of undernourished people in Liberia remains unacceptably high. Although Liberia adopted the Millennium Development Goals, including that of halving the proportion of hungry people by 2015 and reduction of under-five mortality by two-thirds, the country is nowhere near meeting those targets. Nationally, 41 percent of the population has an unacceptable food consumption level, i.e. consumption is limited or insufficient nutritious foods are consumed which cannot maintain an active and healthy life as per international standard. Of the total population, 13 percent have an extremely one-sided consumption pattern, mainly consisting of only rice, roots and tubers. Although rice production increased from 85,000MT in 2005 to 293,000MT in 2009, it is still far from meeting domestic consumption requirements. Liberia's high and increasing dependency on foreign markets for food coupled with structural problems of inequality and poverty, limited infrastructure to facilitate market access and the underperformance/underdevelopment of the farm sector all contribute to persistent high levels of food insecurity.

Chronic malnutrition also remains exceptionally high, at 42 percent. Under-nutrition in the first five years of life threatens lives and can jeopardize physical, motor and cognitive development. For those who survive, their undernourishment during the first two years of life can cause irreversible, long-term damage. It is therefore of particular importance that we take concerted action to combat hunger, especially of young children. Over-consumption in adults, especially in urban areas, is also increasingly becoming a public health problem.

The underdeveloped agriculture sector and persistent chronic malnutrition is a key theme of the 2010 Comprehensive Food Security and Nutrition Survey (CFSNS), the third nationwide food security survey following those of 2006 and 2008. The 2010 report not only identifies who and where the food insecure are, but also explains what makes Liberians vulnerable to food insecurity and how such vulnerabilities can be addressed. It records the state of food insecurity in the country, focusing attention on counties and regions where action is most needed, thereby supporting both national and regional policy efforts and advocacy work.

The report offers a view of the past and present. It incorporates a significant amount of historical data on food availability and access and triangulates that with the most current information collected during the field phase of the survey. Besides highlighting the chronic food insecurity situation in Liberia's southeastern region, it emphasizes the emerging challenges in the rest of the country, such as the livelihood shifts that have negatively affected families in Rural Montserrado. It reveals that high levels of food and nutrition insecurity tend to go hand in hand with low levels of investment in crop production, low education achievements, poor road networks, high price volatilities and poor health infrastructure. As the report underscores, the structural problems of inequality, poverty, unemployment and other vulnerabilities that led to the 14 years of civil conflict and the relatively precarious state of security in the run-up to next year's election remain largely unaddressed.

We hope that this report will generate discussion and spur renewed countrywide action to overcome food and nutrition insecurity in the country.



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Acknowledgements

The Government of Liberia is deeply grateful to the individuals, households, and communities of rural and urban Liberia for their time and hospitality.

The third countrywide food security and nutrition survey after previous ones in 2006 and 2008, the 2010 CFSNS was an integrated endeavor involving many organizations in its design, the collection of data, and the production of this report.

The food security component of the survey was primarily supported by the Ministry of Agriculture (MOA) and the United Nations World Food Programme (WFP). The primary agencies for the health and nutrition section of the survey were the Ministry of Health and Social Welfare (MOHSW), the United Nations Children’s Fund (UNICEF), World Food Programme (WFP) and the World Health Organization (WHO). The sampling methodology was designed by the Liberia Institute of Statistics and Geo-Information Services (LISGIS) and WFP.

In the field, many agencies contributed staff, vehicles and other logistical support that ensured successful implementation of the survey. In particular, the Ministry of Agriculture, Ministry of Health and Social Welfare, LISGIS, FAO, UNICEF, WFP, WHO, Action Contre La Faim (ACF), Action for Family Health and Development (AFAHD), Aid for the Needy Development Program (ANDP) and Project Health Children (PHC) were involved in the field phase of the survey.

We are deeply appreciative for the useful comments from various individuals/organizations on the design, implementation and compilation of survey report, and particularly staff from Action Contre la Faim (ACF), Catholic Relief Services (CRS), European Commission, FAO, Merlin, United Nations Development Programme (UNDP), World Bank, United States Agency for International Development (USAID), Dr Thomas G. Wilbur, Dr Jeanne Carter and many others. Also to mention are WFP VAM staff from Headquarters and Regional Bureau as well as UNICEF Nutrition Regional team in Dakar, Senegal for the useful comments and review of the document.

The survey was funded by the European Commission’s Humanitarian Aid Department (ECHO) and the EC-Food Facility through UNICEF and WFP respectively in addition to material and technical contributions from ACF, CRS, PHC, SC-UK, FAO and WHO. The Government of Liberia is grateful for these generous contributions.

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This report was compiled in collaboration with various stakeholders including FAO, UNICEF, WFP and WHO. National stakeholders including representatives from MOA, MOHSW and LISGIS have reviewed the report and provided valuable comments which were incorporated in the final report. For any feedback, clarification or comments, please contact any of the following persons:

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1. Contextual Background

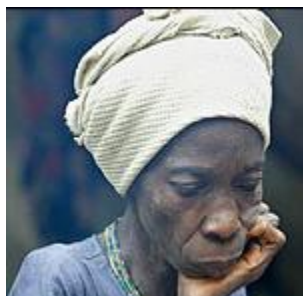
Liberia, with 15 administrative and political units known as counties, is situated on the Atlantic coast of West Africa and has 579 km of coastline and a land mass of approximately 111,370 sq. km. The capital is Monrovia. It borders Côte d'Ivoire in the east, Sierra Leone in the west and Guinea in the north. Liberia is among the wettest countries in the world with an average annual rainfall of 4,650mm per year in the coastal areas and 2,240mm in the interior. With the prevailing precipitation, it has two seasons - the rainy season lasts from late April to October (the months of heaviest rainfall are June, July and September) and the dry season begins in November and ends in April. Temperatures range annually from 24°C to 30°C (75°F to 85°F).

Human Development Index (2002-2009)	
2009	0.442
2008	0.434
2007	0.427
2006	0.419
2005	0.380
2004	0.325
2003	0.370
2002	0.365

Source: UNDP Human Development Report 2002 – 2009

The country is rich in natural resources, including water, wildlife, forests (timber), and minerals. Iron ore, gold, and diamonds are present in the plateaus and mountains of the northern region. Liberia possesses approximately 40% of West Africa's rainforest. Though covering large areas, the tropical forest is endangered by deforestation and loss of biodiversity. Despite its richness in natural resources, Liberia is one of the world's poorest nations. Per capita gross domestic product (GDP) was US\$362 in 2009. It ranks 169 out of 182 countries in the human development index (2009 UNDP Human Development Report). Unemployment is rampant and at least two-thirds of Liberians (68% of the rural population and 55% of the urban population) are living on less than one dollar a day. The current population of Liberia is 3.5 million (census 2008) with an estimated one million living in Monrovia.

The 14-year civil war which ended in 2003 crippled the economy. GDP fell 90% between 1987 and 1995 – and by the time of the elections in 2005, average income was a quarter of what it had been in 1987. The legacy of the conflict still looms large. Although the political situation is improving following the installation of a democratically



HUNGER BLIGHTS THE LIVES OF MANY LIBERIANS (PHOTO: BBC)

elected government in 2006, Liberia faces overwhelming reconstruction and development challenges. Liberia's recent economic performance has been a bright spot in the country's transition from war to peace. Despite recent difficulties in the global economy, there has been a remarkable turnaround in growth since 2006 largely due to the Government's pursuit of policies aimed at promoting economic revitalization and growth. Real GDP is estimated to have increased by 7.8%, 9.5%, 7.1% and 4.6% per annum between 2006 and 2009 and is projected to grow further by 7.5% in 2010 and 10.5% in 2011. This growth is mainly driven by mining, services, manufacturing, agriculture and forestry.

The Government of Liberia conducted a nationwide Comprehensive Food Security and Nutrition Survey between May and August 2010. A two stage cluster sampling approach was used where 25 enumeration areas (with 20 households each) were randomly selected per county.

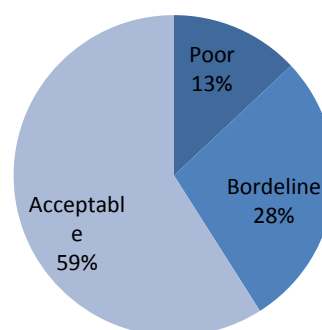
Using a pre-tested data collection tool, data was collected and analyzed using ACCESS, SPSS 11.5, ADATTI, Nutrisurvey, and SMART softwares. Descriptive and multivariate techniques were conducted with statistical significance tests done at P-value <0.05. Food security was measured using household food consumption as a proxy indicator. This was determined by analyzing household dietary diversity and frequency of consumption compared against a Food Security Score standard calibrated to suit the Liberian setting. Nutritional status of children under five was assessed using the WHO Child Growth Standards for weight for age, weight for height, height for age, and mid-upper arm circumference while body mass index and mid upper arm circumference was used for women of reproductive age. Overall, the food security situation in Liberia remains poor.

This report provides an overview of the current status highlights vulnerabilities and makes recommendations to address food insecurity in Liberia.

2. Food Consumption in Liberia

Nationally, 41% or 1,267,000 people have an unacceptable food consumption pattern. They consume limited or insufficient nutritious foods to maintain an active and healthy life (usually dominated by cereals with minimal or no protein-rich foods like fish, pulses and meats). This tally with FAO's calculations that 38% of people are undernourished (2004-6). Of these, 13% or about 368,000 people have an extremely one-sided consumption pattern, mainly surviving on rice, roots and tubers. They are classified as having a poor food consumption based on a 7-day recall period. People with acceptable food consumption, i.e. their general dietary intake is composed of food items from all the main food groups, constitute 59% of the total population.

Food consumption

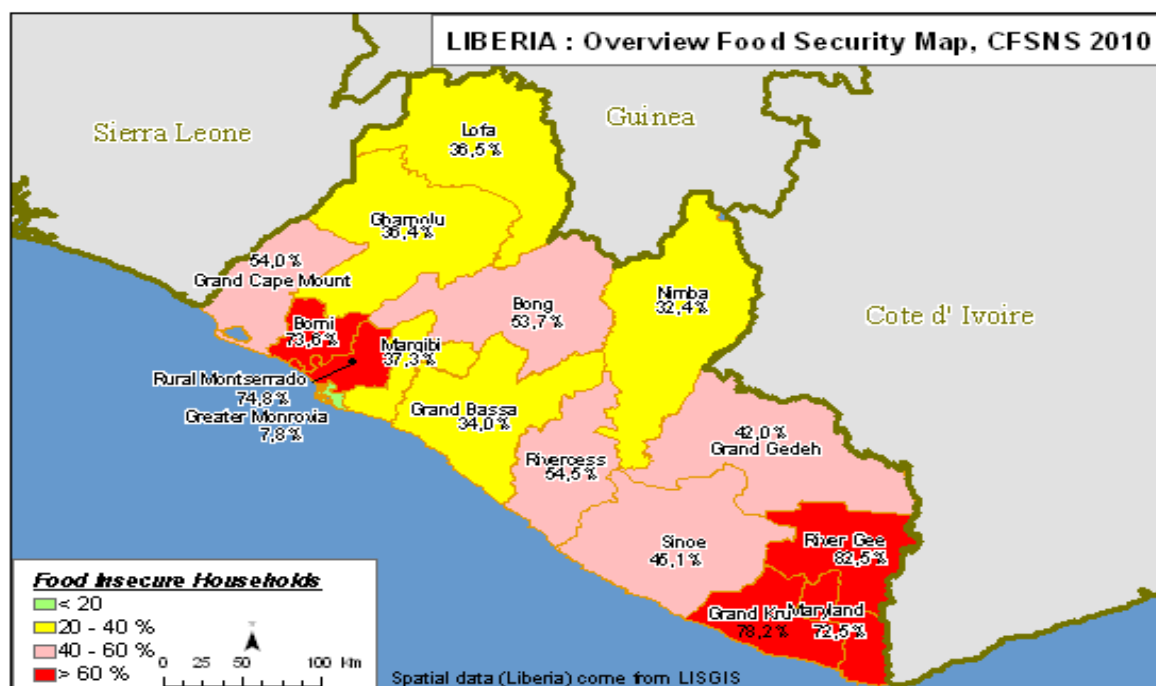


These consumption groups (acceptable, borderline and poor) were created based on the frequency and variety of consumption of different food items. Between 2006 and 2010, food security in rural Liberia has improved even more markedly than the figures reveal since the latest survey was carried out during the lean season while in 2006 it took place following the harvest of the main crop, paddy.

In 2006, 50% of the population was classified as having unacceptable food consumption (poor and borderline). By 2010 this has reduced to 41% while the percentage of households with poor food consumption slightly declined by 1% to 13%.

The map shows poor and borderline food consumption households in 2010. The south east remains the most food insecure part of the country. Here almost three quarters of households have consumption patterns below what is acceptable. Details by county are provided in the following table.

Poor and borderline food consumption in 2010



Proportion and number of undernourished¹

	Food consumption (%)			Population (no.)	
	Poor	Borderline	Acceptable	Poor	Borderline
Greater Monrovia	1.2	6.6	92.2	11,650	64,074
Lofa	3.0	33.5	63.5	8,306	92,749
Gbarpolu	4.2	32.2	63.6	502	26,851
Grand Bassa	6.6	27.4	66.0	14,632	60,744
Margibi	7.2	30.1	62.7	15,114	63,187
Nimba	9.2	23.2	67.6	42,506	107,190
Grand Gedeh	10.8	31.2	58.0	13,528	39,080
Sinoe	12.0	33.1	54.9	12,287	33,981
Cape Mount	13.1	41.0	45.9	16,647	51,974
Rivercess	15.8	38.7	45.5	11,298	27,674
Bong	16.3	37.3	46.4	54,357	124,722
Rural Montserrado	23.4	51.4	25.2	34,496	75,772
River gee	28.1	54.4	17.5	18,768	36,333
Grand Kru	33.6	44.6	21.8	19,459	25,829
Bomi	38.8	34.8	26.4	32,638	29,273
Maryland	43.3	29.3	27.4	58,861	39,694
Liberia	13.0	27.9	59.1	368,000	899,000



COMBATING HUNGER IN THE UNDER FIVES IS CRUCIAL (PHOTO: UNICEF)

¹ Lack of or inadequate intake of nutritious protein, mineral and vitamin rich food items as computed from weighted dietary diversity and frequency of food consumption. Instead undernourished mainly survive on cereals and tubers.

3. Vulnerabilities in the Post-conflict Situation

Liberia is in a protracted post-war recovery period. The rule of law and governance is still weak, posing a major threat to the economic growth that the country has been experiencing since the signing of the 2003 Accra Comprehensive Peace Agreement. The Presidential and general elections planned for 2011 may further threaten the democratic stability of the country.

Widespread food insecurity among the Liberian population was one of the grievances that culminated in civil war. Today, food insecurity is still rife and urgent action is needed to address the key vulnerabilities discussed in this section.



LIBERIANS ARE STILL SUFFERING THE EFFECTS OF WAR

Issue 1 - Increasing reliance on world markets for food

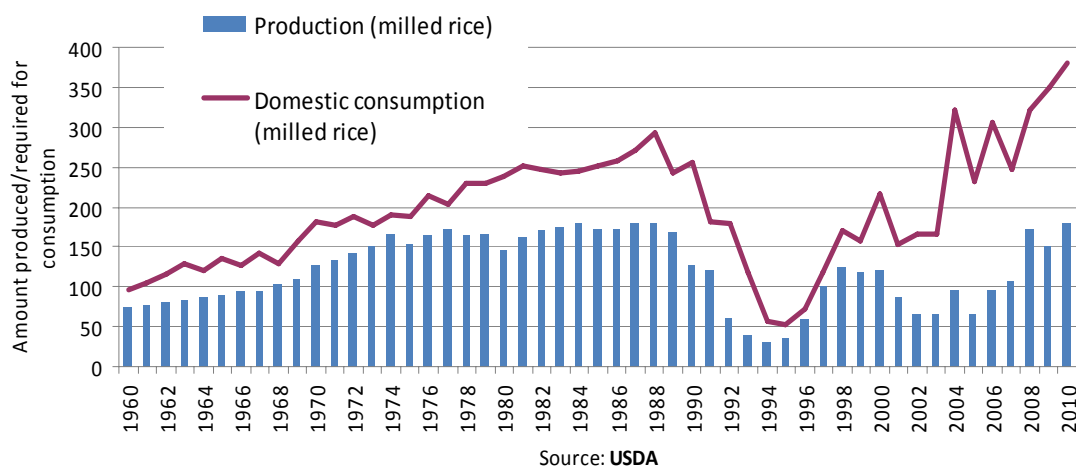
Liberia remains heavily reliant on imports of food to meet domestic requirements with more than two thirds of food requirements being imported. Imports range from staple foods to vegetables, pulses, chicken, meat and condiments.

Liberia has never been self sufficient in cereal production. The country’s most self-sufficient year in terms of grain production was 1974 when it produced 87% of its grain consumption requirements. The subsequent decline in self-sufficiency reached a low of 23% in 1995 followed by a brief period of improvement between 1996 and 1999 before plummeting at the beginning of the 21st century as the war intensified. While production has been on upward trend since 2006 it is still less than half of domestic requirements.

The absence of a duty on imported rice (combined with the long-standing policy to encourage cheap rice imports) puts local rice production at a disadvantage. In the long term it is likely to make Liberians more reliant on cheap imports and have a profound disincentive effect on local rice farming.

What’s more, food requirements are intensifying. Liberia has a population growth rate of 2.1% (2008 population census), which is higher than many sub-Saharan post conflict countries, including Sierra Leone (1.8%), Cote d'Ivoire (1.6%) and Sudan (1.9%), but comparable with similar countries that did not experience civil war including Guinea (2.2%), Ghana (2.1%) and Nigeria (2.2%). If this growth rate is maintained, the population will double by 2041. With the low growth in agricultural productivity (see next issue) the import gap is expected to widen further in the future.

Rice production gap



Issue 2 – Under-performance of the crop farming sector

Agriculture is the mainstay of the Liberian economy and accounts for over half of GDP in the post-war period (compared to one-tenth in the late 1970s). A large proportion of the economically active population of Liberia is engaged either directly or indirectly in smallholder subsistence agriculture or fisheries. Production of Liberia’s two main staple crops - rice and cassava - is mainly a subsistence activity. Rice is usually harvested between October and December depending on the area (south eastern Liberia starts harvesting in September while northwest starts in November). Cassava can be harvested throughout the year but the main harvest takes place during July and August. Most subsistence farmers sell their surplus produce immediately after the harvest in order to settle accumulated debts.

Since the conflict ended and helped by the 2008 food price crisis, local rice production has bounced back. However, Liberia still has one of the lowest yields in the region - 1.5 mt/ha compared to Senegal’s 3.6 mt/ha. Liberia relies on extensive forms of cropping, such as ‘slash and burn’ in the uplands, which entail substantial environmental costs. The post-harvest loss rate is also very high at 35-45%.

For Liberia to realize significant production to bridge the huge deficits and reduce dependency on food imports, the country has to address the following constraints impeding the sector and preventing commercial production:

- Limited access to quality inputs (e.g. certified seeds and fertilizers)
- High levels of pests and diseases
- Limited agro-processing capacity, particularly at the smallholder farm level
- Poorly developed agricultural value chains
- Poor road and market infrastructure
- Competition from cheaper imported rice and cassava
- High post-harvest losses.



LOCAL RICE PRODUCTION IS UP SINCE 2008 (PHOTO: OCHA)

Issue 3 - Persistent poverty, high levels of unemployment and low educational achievements

Some 1.7 million Liberians live below the national poverty line. Of these, about 1.3 million people live in extreme poverty. Poverty is higher in rural areas (68%) than in urban areas (55%). On average households spend 53% of their total cash expenditure on food. Rice is the number one food purchase.

Overall, 48.5% of households are involved in food crop production followed by petty trading (34.7%), regular salaried employment (23%), palm oil production (13%), cash crop production (12.8%), unskilled/casual labor (12%) and internal support (10%). Other significant livelihood activities include hunting/gathering (6.7%), skilled labor (6.6%), fishing (6.5%) and commercial trade/shop owners (6.4%). There has been a marked shift in livelihoods since 2006 as households have been able to restore their traditional livelihoods, in particular food crop and cash crop farming, following the end of the civil war.

Educational levels remain considerably low, with illiteracy rates reaching 53% at the national level. Net primary school enrolment is as low as 65%. Secondary school enrolment is even lower at 38%. Low school enrollment is especially high among food insecure households.

With high levels of chronic malnutrition, Liberia will take longer to overcome the human capital obstacle as stunted children do not have the

School enrollment

	School enrollment	
	Primary	Secondary
National	66.1	40.0
Rural	57.4	24.6
Urban	76.2	50.4
Poor food consumption	45.4	18.9
Borderline food consumption	59.2	27.5
Acceptable food consumption	73.4	46.4



PRIMARY SCHOOL ENROLMENT IS JUST 65% (PHOTO: WFP)

same intellectual capacity as healthy children. They have lower academic performance as children and lower productivity as adults, thereby slowing the economic development of the country. Among other factors, chronic malnutrition fuels poverty incidences.

The protracted civil war has undermined the skills training of the Liberian people, particularly of young people who for a long time knew nothing other than the weapons of war. More than half of the country's youth (18 – 35 years old) are not educated or trained to be absorbed into the labor sector. Thousands of reintegrated ex-combatants form a significant part of the unemployed population.

Issue 4 - Limited road infrastructure

The war devastated the country's basic infrastructure and rendered access to most productive inputs, services and output markets impossible. Although significant progress has been made in repairing dilapidated roads, the fact remains that large parts of the country are inaccessible, especially during the rainy season. The situation is most severe in south eastern counties. Weak infrastructure undermines income earning opportunities, limits access to health and education facilities, raises the price of goods and services and weakens food security. Women and children bear the brunt of poor infrastructure as they spend more time carrying water and other goods, are more vulnerable to crime and have poorer access to health facilities, raising the risk of child and maternal mortality.



POOR ROADS ARE HINDERING AGRICULTURAL DEVELOPMENT (PHOTO: MISSION LIBERIA)

The CFSNS reveals that areas with the poorest road networks are the most food insecure. The critical lack of infrastructure, particularly of the road network, in Liberia is hampering agricultural sector development since farmers are prevented from bringing their surplus production to market. Deprived of a route to market they have no incentive to up production and are therefore locked in a cycle of subsistence production.

Issue 5 - Political stability and security

The origins of the civil conflict in Liberia can be traced to two broad factors. Firstly, significant portions of society were systematically excluded and marginalized from institutions of political governance and barred access to key economic assets. The founding constitution was designed for the needs of the settler population, with less consideration and involvement of the indigenous people. Secondly, economic collapse helped to propel the crisis. Liberia's economy posted steady economic growth averaging four to seven percent a year throughout the 1960s, but most of the gains were concentrated within the elite, and the majority of Liberians saw little benefit. The economy began to unravel in the 1970s with the combination of a sharp increase in world petroleum prices and a decline in the prices of key export commodities. By the latter part of the decade all indicators pointed to a looming crisis. Unemployment and consumer prices, and particularly food prices, all rose at alarming rates, while growth stagnated, and tensions rose sharply.

Today, both these factors remain a threat to political stability and prosperity in Liberia.

4. State of Food Security

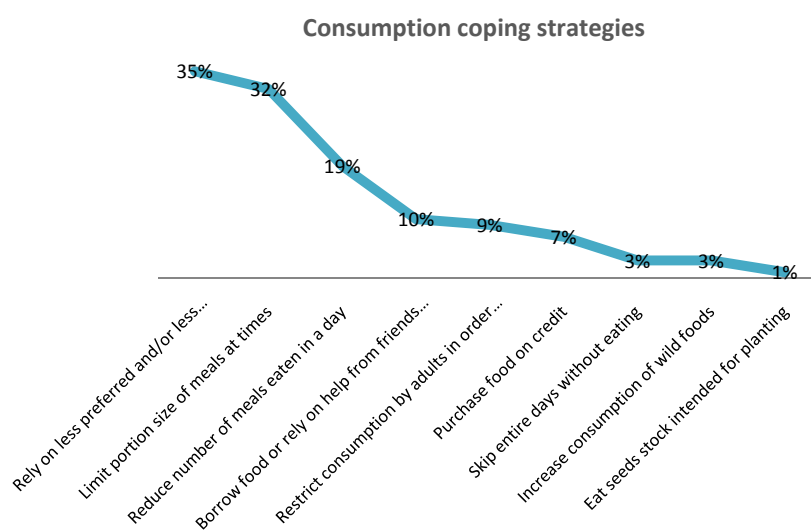
Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life (1996 World Food Summit). Food insecurity in Liberia is predominantly caused by the inability of people to access food, especially in rural areas.

Households at risk of food insecurity include:

- **Households headed by widows/widowers**
- **Households headed by the elderly** (those aged 60 years and above) which account for 14.2% in rural Liberia and 7.5% in urban areas. The prevalence of poor food consumption in this age group is estimated at 22% in rural areas.
- **Households with a chronically sick or disabled member**, which account for an estimated 5.8% of households. Almost one quarter of households with a chronically ill person have poor food consumption in rural areas.
- **Families residing in poorly constructed houses.** In rural areas about one fifth of households living in un-durable houses have poor food consumption. In urban areas, the likelihood that a household with poor food consumption resides in un-durable housing conditions is three to five times as high as for food secure households.
- **Households within the lower wealth categories**, indicating their limited asset base and resilience to shocks.
- **Households involved in just one or two income activities rather than several** (on average, households are engaged in two income activities). The prevalence of poor food consumption drops from 15% for households engaged in one or two income activities to only 9% for those with three income activities and to 6% for households involved in four or more.
- **Households in rural areas that depend on agricultural activities** such as crop production, charcoal production, rubber tapping and palm oil production. Generally, more than 20% of these households have poor food consumption.
- **The unemployed, self employed or casually employed.** Nationally, it estimated that at least 60% of employed Liberians work in the informal sector (self-employed working in agriculture sector, casual laborers such petty traders, and those that dependent on contract work and voluntary workers) and 68.4% of household heads are self employed mainly as food crop producers, charcoal producers and palm oil producers, who are particularly vulnerable during the rainy season as their activities are inhibited and they tend to exhaust their stocks during the lean months. Unemployment is reported by 6.3%.
- **Households headed by a person with no or limited education.** Prevalence of food insecurity decreases as the educational attainment of the household head improves. 57% of households with below acceptable consumption levels are head by someone with no schooling. Worse is that, households with poor food consumption tend to send fewer children to school irrespective of age and gender of the children.

Coping with food insecurity

More than half of all households (55.8%) experience difficulties in accessing food. How do households cope? Over a third (35%) rely on less preferred food, i.e. not rice, 32% limit their food intake by serving smaller portions, 15% reduce the number of meals eaten in one day and 10% borrow food. Three percent of the households go to bed hungry with no meals consumed during the day.



5. State of Nutrition Security

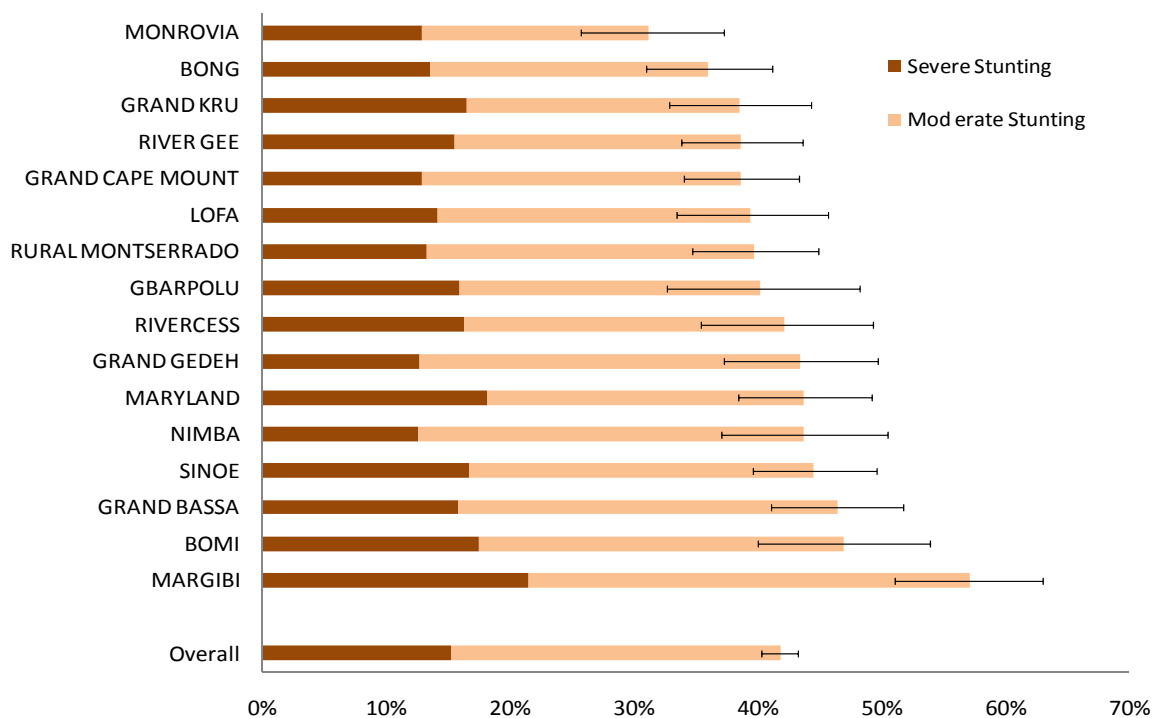
Malnutrition is a multi-factorial problem. It is an outcome of two common interrelated causes: inadequate food intake and disease load. This, in turn, is caused by inappropriate feeding practices, inadequate access to appropriate quality and/or quantity of food, insufficient maternal/child care, and inadequate health care and hygiene practices. These underlying causes exist in the community due to lack of awareness, gender and empowerment issues, and social, political, and economic issues at different levels of society.

Nutrition status of children

Chronic Malnutrition

Stunting is a measure of chronic malnutrition due to cumulative effects of poor nutrition and disease. A low height for age indicates poor linear growth where a child has not been able to grow to their full potential by poor diet, caring conditions and illnesses suffered. Children's height is considered to be the best predictor of future human capital (Black et al, Lancet 2008).

- The overall stunting prevalence in Liberia is 41.8% (the WHO cut-off threshold for very high is 40%) as presented on the graph below.



- Rural areas have more cases of stunting than in urban areas. Monrovia has the lowest prevalence of stunting (31%), with estimates significantly lower than the four counties with the highest prevalence of stunting (Sinoe, Grand Bassa, Bomi and Margibi), at 44% or higher.
- Nine counties are above the WHO threshold of 40% with a total of 218,857 children estimated to be stunted.

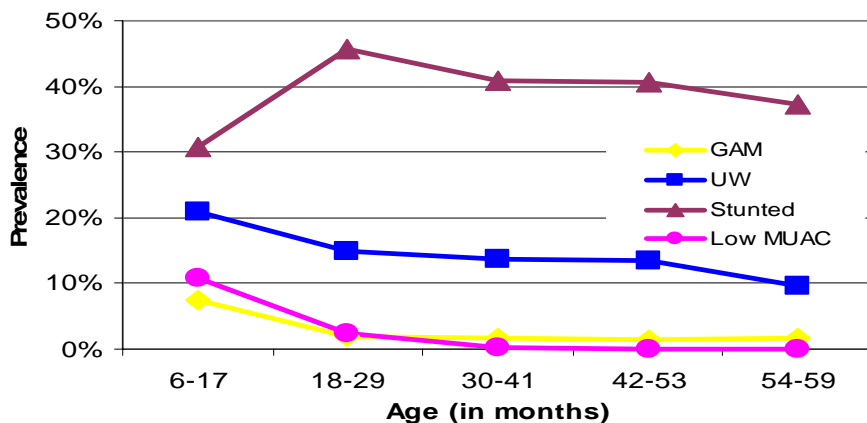
The consequences of stunting are grave and important to understand: it causes irreversible brain damage, delays normal growth, increases the risk of death due to ordinary child illnesses and increases the risk of chronic diseases later in life. Malnutrition perpetuates poverty with its adverse effects on survival, productivity and education. This makes malnutrition one of the most important public health problems in this country. On a positive note, however, stunting is preventable. Children become stunted



MONITORING CHILD NUTRITION (PHOTO: UNICEF)

very early in life, normally before they turn two years old – therefore, there is a small window of opportunity for timely preventive measures between a child’s conception and his/her second birthday.

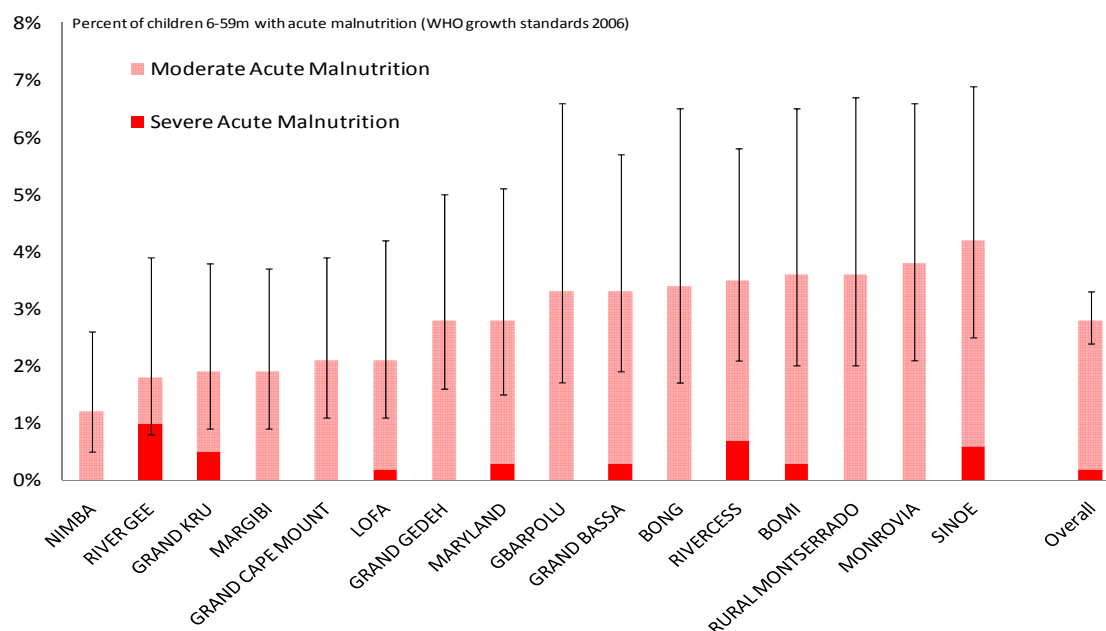
- Children between 18 and 29 months have the highest level of moderate and severe stunting (45.6%), while far fewer 6-17 month olds are stunted (30.7%). This contrasts with Global Acute Malnutrition (GAM) which is much higher in children aged 6-17 months (7.1%) than in any other age group, where the prevalence is less than 2%.



- Stunting and child illness was less common in households with acceptable food consumption—underlying the inter-linkage between food intake and malnutrition.

Acute Malnutrition

- The level of acute malnutrition as measured by wasting, including presence of oedema, shows an improvement from previous surveys and is considered normal. It is prevalent in 2.8% of children aged between 6-59 months old.
- The range of acute malnutrition is from 1% to 4% in counties with Monrovia and Rural Montserrado as among the counties with the highest estimates of GAM.

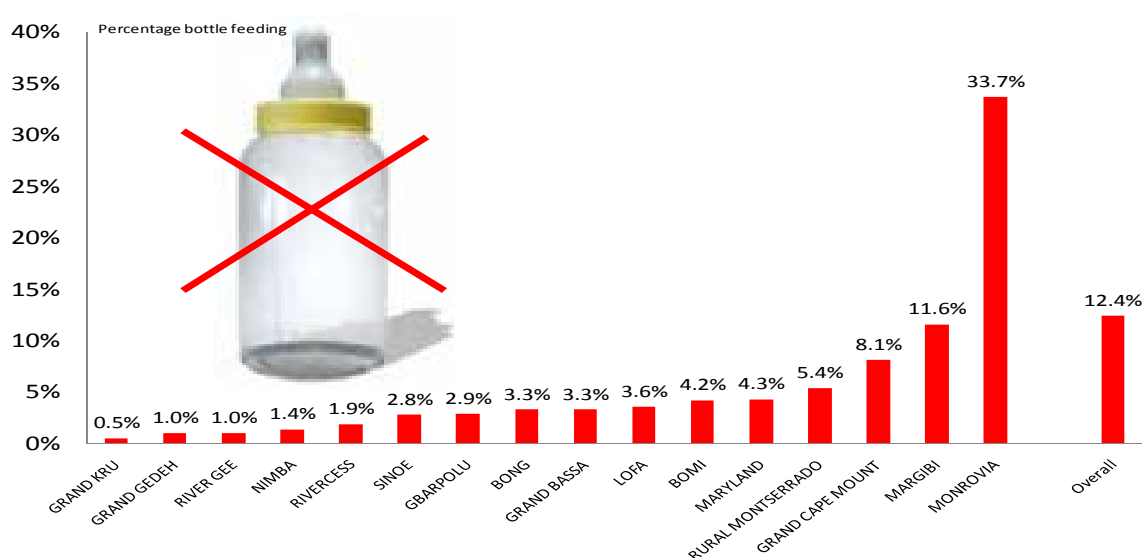


- An estimated 16,000 children were acutely malnourished at the time of the survey.
- Children demonstrated less malnutrition and less sickness when their mothers/caretakers had higher educational attainment.

Care Practices: Infant & Young Child Feeding

Infant and young child feeding (IYCF) practices directly affect the nutritional status of children under two years of age and impact child survival. Improving infant and young child feeding practices in children 0–23 months of age is critical to improved nutrition, health and development of children.

- Initiation of breastfeeding in the first hour after birth has been identified as a neonatal mortality intervention due to the effects of colostrum, protection from hypothermia and timely detection of life threatening conditions. The nutrition survey results found that while almost all children breastfeed, only 44% of children initiated breastfeeding in the first hour after birth (not shown).
- Exclusive breastfeeding is the only feeding that a child needs in the first six months of life. Non-exclusive breastfeeding in the first 6 months of life is estimated to cause 10% of disease burden in children under 5 years of age (Black et al, Lancet 2008). Although exclusive breastfeeding is high in children in the first two months of life (around 80%), it drops quickly to less than half of children from 2 to 3 months of age, then to only one in three children from 4 to 5 months of age.
- 44% of newborns start breastfeeding in a timely manner, a third of children start eating complementary foods too early, while almost half (49%) begin eating complementary foods too late.
- The average length of breastfeeding for Liberian children is about 18 to 19 months. The international recommendations are for continued breastfeeding for 24 months or longer. Most children (60%) do not continue breastfeeding up to two years old.



- For good health and nutrition of children, bottle feeding is to be completely avoided. Hygienic practices during food preparation and feeding are critical to prevent illness. The survey results show that bottle feeding is less than 5% in all domains but three (Grand Cape Mount, Margibi, Monrovia and Rural Montserrado).
- In Monrovia, one-third of all children from 0-23 months of age are fed with a bottle. The population in Monrovia most likely represents the largest concentration of middle to high quintiles of socio-economic status. This social group are quite influential and therefore are critical in defining the appropriate behaviors associated with economic wellbeing. Significant efforts are needed to change bottle feeding behaviors and ensure that it is not considered as a better method for child feeding.

Access to safe drinking water and adequate sanitation

Poor sanitation and inadequate water quality and quantity are related to child malnutrition. At the national level only 58% and 37% have access to improved water and sanitation facilities respectively. In rural Liberia, only 40% of the households have access to improved water sources. Access to improved sanitation in rural areas is also low as only 19% of the rural households have access to improved sanitation. Almost three-quarters of rural households report defecating in the open. Water and sanitation conditions need to be greatly improved for the efforts to reduce child illness and malnutrition.



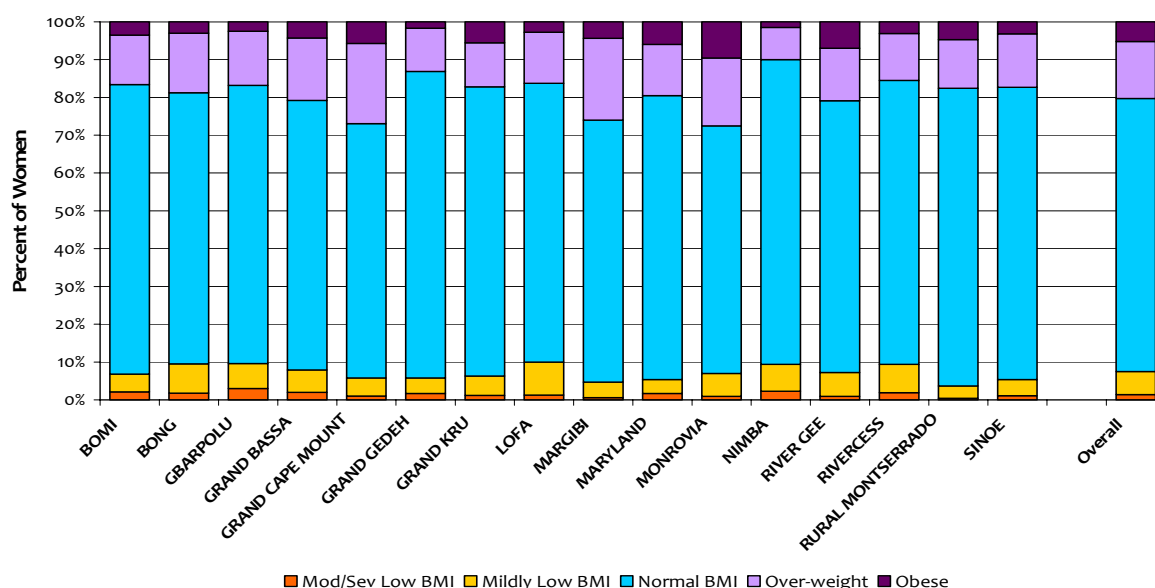
POOR LIVING CONDITIONS CONTRIBUTE TO MALNUTRITION AND CHILDHOOD ILLNESS

Nutrition status of women

Women's nutrition is critical for the life of the individual, her children, community and country. Conclusions from the Standing Committee on Nutrition's 6th report on the world nutrition situation state that improving women's nutrition is critical for assuring women's full potential health and development thereby break the intergenerational cycle of growth failure where malnourished women giving birth to low birth weight and most often malnourished children.

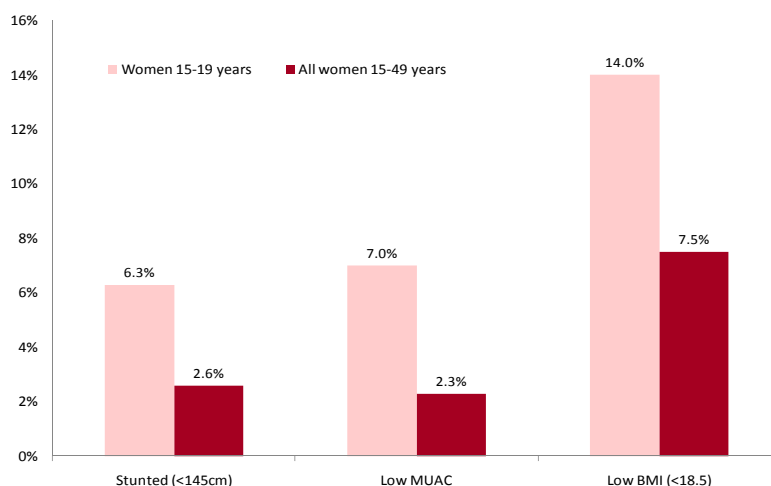
- The overall prevalence of low BMI (or under-nutrition) in non-pregnant women is 7.5% where it is highest in Grand Gedeh, Gbarpolu, Lofa, Nimba, and River Cess.
- On the other hand, the prevalence of low MUAC is 2.3% where it is highest in rural Montserrado and Maryland.

Women's malnutrition status



Small women are more likely to have low birth weight children than taller women. Adolescent fertility is very high in Liberia. The average age at first birth is 19.1 years as reported by the Liberia DHS 2007. One of the major reasons for low birth weight of adolescent mothers is due to the fact that the pregnancy occurs before the women have completed their growth potential. In developing countries, especially in rural areas, women do not complete their growth until around the age of 20 years.

- The prevalence of stunting in women was estimated at 2.6% with a range from 1.6 to 5.9 % throughout the counties. The highest prevalence were noted in River Gee, Bomi and Margibi (5% or over).
- Prevalence of under-nutrition is greatest in 15-19 year old women (15%), a worrying trend in Liberia where teenage pregnancy is common. A significant opportunity for improvement of birth outcomes and child nutrition in Liberia is found with adolescent women.



As women get older, they have a higher prevalence of over-nutrition. Over-nutrition in women in Liberia is more prevalent than under-nutrition although they are occurring simultaneously, known as the “double burden” of malnutrition.

- The prevalence of high BMI (or over-nutrition) is nearly three times that of under-nutrition at 20.3%
- Just over 5% of 15-19 year olds are over-nourished, while almost 30% of women in their 30s and 40s are over-nourished.
- Trends over the past several years indicate that under-nutrition in women of reproductive age has improved.

People who are overweight have a significantly higher risk of facing chronic diseases such as diabetes and/or cardiovascular disease. These diseases cause premature death and are very expensive to treat. Overnutrition and its ill effects are the challenges Liberia will face along with undernutrition in the coming decade.

Access to health services

Both malnutrition and child illness are adverse outcomes of a wide range of factors, specifically of poor living conditions (i.e. unhealthy environment and poor health services), inadequate care, and food insecurity. The two outcomes are interlinked with each one exacerbating the other i.e. sick children are more likely to get malnourished and malnourished children are more likely to get sick. Children who are malnourished are more likely to die when they fall sick, and malnutrition is reported as one of the single biggest contributors to child mortality.

Child morbidity by county

County	Any illness	Diarrhea	Cough	Fever
BOMI	58.1%	7.7%	47.8%	47.5%
BONG	79.9%	31.4%	55.5%	58.0%
GBARPOLU	82.3%	18.9%	57.8%	61.1%
GRAND BASSA	74.9%	16.1%	50.3%	60.7%
GRAND CAPE MOUNT	71.1%	11.8%	53.8%	59.7%
GRAND GEDEH	81.5%	26.6%	62.2%	68.9%
GRAND KRU	81.0%	27.2%	48.4%	52.7%
LOFA	54.4%	3.20	34.1%	45.9%
MARGIBI	68.8%	12.9%	43.6%	49.3%
MARYLAND	64.3%	10.1%	53.3%	52.5%
MONROVIA	36.3%	1.8%	26.9%	29.9%
NIMBA	84.0%	33.1%	52.1%	70.8%
RIVER GEE	75.8%	20.1%	51.3%	63.8%
RIVERCESS	76.5%	23.8%	42.1%	51.8%
RURAL MONTSERRADO	86.7%	24.9%	50.1%	55.2%
SINOE	67.9%	15.7%	45.7%	52.0%
LIBERIA	63.5%	15.2%	43.2%	50.1%

Child morbidity is high. Only 36% of children in the CFSNS sample had no illness in the two weeks preceding the interview, with higher child illness in rural areas. Counties with the highest prevalence of child illness were Rural Montserrado, Nimba, Gbarpolu, Grand Gedeh and Grand Kru, all with more than 80% of children suffering from at least one illness during the recall period. Monrovia and Lofa demonstrated lower levels of child morbidity, with Bomi having the fewest children with diarrhea. Sick children, whether with diarrhea, cough, fever or any combination of the three (any illness), had statistically higher levels of malnutrition.

6. Towards ensuring Food and Nutrition Security in Liberia

Recommended actions

The major underlying reasons for high prevalence of food and nutrition insecurity in Liberia are widespread poverty and high levels of unemployment. Low agricultural productivity, limited infrastructure and high food prices exacerbate the situation.

Since Liberia has an agricultural economy it makes sense to approach the food security challenge via the agricultural sector. The Comprehensive Africa Agriculture Development Program (CAADP) rightly proposes budget increases to address the key agricultural sector constraints, which include high pre and post harvest losses, lack of processing and storage facilities, limited use of improved seeds and access to markets.

The findings of the survey also clearly highlight that in order to reduce stunting significantly and in sustained manner, there is a need to improve household food security and as well as child and maternal care practices such as infant and young child feeding, disease prevention and health service utilisation and hygiene and sanitation practices. The high prevalence of malnutrition is depriving children of survival, optimum growth and development. Malnutrition in early years not only increases the risk of death due to ordinary child illnesses, it also associated with higher risk of chronic diseases later in life. From the period of conception to first two years of life the physical growth and cognitive development is most rapid and during this period brain also develops significantly. If a child is malnourished during this critical window of opportunity, it leads to impaired intellectual growth and the damage is irreversible. Compared to children who are not stunted, stunted children often enroll later, complete fewer grades, and perform less well in school. In turn, this underperformance leads to reduced productivity and income-earning capacity in adult life.

Strategy 1: Specific interventions to boost the agricultural sector.

Recommendations include:

- Improving local production of food and cash crops, especially rubber, cocoa and palm oil, and introduce swamp rice farming.
- Strengthening both food and market-based approaches including capacity building on storage, processing and general market analysis in addition to offer markets for local produce through the Purchase for Progress (P4P) initiative.
- Initiating value addition programmes in the agricultural production chain such as improving processing and even food fortification to make local produce more nutritious.
- Improving post-harvest management/storage/preservation of produce.
- Improving agricultural extension services across the country
- Establishing a conducive environment that encourages private sector involvement in the rural economy—specifically encouraging financial institutions to provide loans and credits to farming households.

Strategy 2: Since poverty is widespread, implementation of social protection programmes need to be considered. These include:

- Targeted public works programmes.
- Generating employment opportunities for the poor through public works.
- Improving road infrastructure and market access.
- Seasonal income support activities specifically targeting the south eastern part of the country.

Strategy 3: A long term strategy towards the eradication of poverty and food insecurity in Liberia must focus on improving primary and secondary education as well as providing vocational training opportunities. This should include programmes such as:

- Skills development of young people.
- Encourage enrolment in primary education, with particular focus on girls.
- Re-invigorate adult literacy classes.
- Continuing with the provision of free school meals and extending the school feeding campaign to the most food insecure counties.

Strategy 4: Address the malnutrition situation in the country. The following programmes and interventions are recommended:

- Chronic malnutrition should be addressed by focusing on the first 1,000 days with evidence based interventions focused to prevent malnutrition
- The national program for management of acute malnutrition should be integrated into the health system including its prevention, detection and treatment, in order to reduce child morbidity and mortality and accelerate progress towards MDG 4.
- Promotion of exclusive breastfeeding, complementary feeding and breastfeeding up to 24 months.
- Promotion of adequate iron and vitamin A intake.
- Support with feeding the sick and malnourished child and maternal nutrition.
- Increase access to improved water and sanitation facilities for families, coupled with hygiene promotion
- Strengthen and encourage activities to promote child health and prevent child illness, particularly by increasing access to health services at both facility and community level for children and their families.
- Women's nutritional status and delaying the first birth needs to be made a priority in health programming
- Media campaign on healthy eating as well as programmes to prevent overweight and obesity should commence.

Strategy 5: Strengthening institutional capacity of the national government in management of food security and nutrition programs. The following are recommended:

- A proper program monitoring and evaluation system needs to be established to monitor delivery and impact.
- The food and nutrition monitoring system requires further strengthening and the role of the Food Security and Nutrition unit in coordinating food security initiatives must be supported.
- The FSN coordination unit should ensure the inclusion of the above recommendations in sectoral plans and strategies e.g. in the upcoming 10 -year National Health Plan and the Basic Package for Health Services.
- The coordination unit should ensure the promotion of food and nutrition security as a cross-cutting agenda, mainstreaming technical input in issues related to poverty reduction, safety nets, economic development etc.
- The nutrition survey should use SMART methods to improve data quality, improve accuracy of measures and reduce costs.