COMPREHENSIVE FOOD SECURITY AND VULNERABILITY ANALYSIS

TANZANIA 2012

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In collaboration with the World Bank

POVERTY AND FOOD INSECURITY PERSIST DESPITE STRONG NATIONAL GROWTH

In recent years, Tanzania has experienced rapid national economic growth, with Gross Domestic Product (GDP) growing at around 7% a year from 2005–2010[1] largely thanks to the agriculture and manufacturing sectors as well as the emerging gold-mining sector, which was the fastest growing industry.

This growth occurred despite the severe drought of 2009, which hit crop production, livestock and power generation and the global high oil and food prices of 2007 and 2008 followed by the global financial crises, which negatively affected the volume and prices of exports, the flow of capital and investment, and earnings from tourism.

The country has seen marked improvements in access to education, notably at secondary level, as well as to healthcare, water, energy, telecommunications and infrastructure, particularly roads.

Yet this significant economic growth has not been matched by improvements in the living conditions of the country's poor population. Food security gains are not matching national economic gains. The share of the population living below the food poverty line – which represents the cost of obtaining sufficient food to meet the calorific needs of the poorest 50% of households – decreased only very marginally, from 19% in 2000-01 to 17% in 2007[2].

The country's poor farming households need better livelihood support such as access to credit and training so they can improve their agricultural inputs and techniques, increase yields and alleviate their poverty.

Methodology

The report's findings are based on household level data from the nationally representative 2008– 09 and 2010 –11 Tanzania National Panel Surveys (NPS).

The NPS interviewed a total of 3,265 households in phase 1 (October 2008 to September 2009) and 3,846 households in phase 2 (October 2010 to September 2011) across Tanzania. Households provided information about their expenditures, food security, assets and livelihoods, nutrition, farming practices and impact of recent economic and other shocks.

The nutrition data are from the 2010 Tanzania Demographic and Health Survey (DHS), which collected nutrition information about children aged under five. Key indicators captured included weight-for-age (underweight), height-for-age (stunting), and weight – for – height (wasting).

[1]IMF 2011
[2]Household Budget Surveys (2000-01 and 2007).

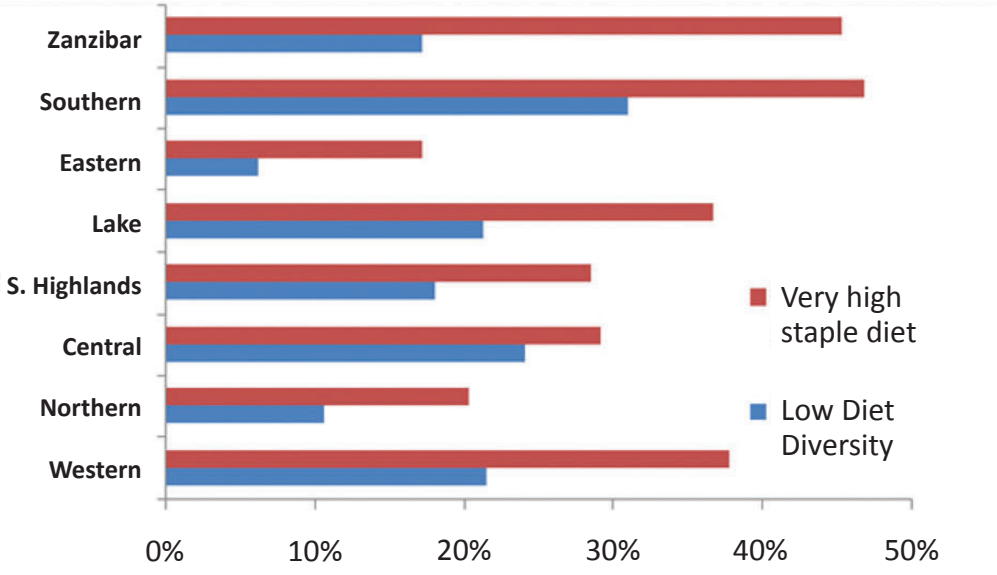
FOOD ENERGY DEFICIENCY IS WORSE - BUT DIETS ARE MORE DIVERSE

Overall some 43% of households were not consuming enough calories in 2010–11 (based on WHO recommendations) compared with 36% in 2008–09. The proportion of Tanzanian households classified as highly food energy deficient went up from 24% in 2008–09 to 29%. The proportion with food energy deficiency[3] was higher in rural areas (48% up from 39% in 2008/09) than urban (31%).

The proportion of households classified as having low diet diversity[4] decreased from 25% in 2008–09 to 18% in 2010 –11. Households in the Southern, Central and Western zones and Zanzibar were more likely to have low dietary diversity than elsewhere as were rural households (21% vs 9% for urban).

Another way of gauging lack of micronutrient consumption is to look at households' staple dependency. More than half of Tanzanian households (53%) derived too high a share of their calories from staples (cereals, roots and tubers): 23% had a high staple diet and 30% a very high staple diet.[5] Again the proportions were much higher in rural than urban areas. Households in the Southern, Lake and Western zones and Zanzibar were more likely to be very highly staple dependent.

FIGURE 1: LOW DIET DIVERSITY AND VERY HIGH STAPLES DIET, BY ZONE (2010-11)



[3]Food energy deficient households are those which given the age/sex composition of household members, do not meet the daily recommended energy intake. Highly food energy deficient households are those experiencing a high calorie deficit – that is, deficient by more than 300 calories daily per household member.

[4]Households that, over the course of a seven day recall period, consumed foods from four or fewer of the seven food groups, namey: 1) cereals, roots and tubers; 2) pulses and legumes; 3) dairy products; 4) oils and fats; 5) meat, fish, eggs; 6) fruit; and, 7) vegetables are classified as having low dietary diversity.

[5]High Staple Diet (HSD) - derive 65-75% of their calories from staples. A Very High Staple Diet (VHSD) derive more than 75%.

ONE IN EVERY 12 HOUSEHOLDS IS FOOD INSECURE

'Poor dietary intake' (PDI) is an indicator that has not been used before. In this report PDI is used as the main indicator of food insecurity. It identifies households that are both food energy deficient and have low diet diversity. Households classified as being food energy deficient and low in diversity in both phases of the survey (i.e. 2008-09 and 2010–11) are described as having chronic PDI.

In 2010-11 about 730,000 households were food insecure or vulnerable to food insecurity (8% of all households). Of these, around 150,000 households (or 2% of all households) were considered chronically food insecure.[6] This is a slight decrease from the first phase (2008-09), in which 10% of households were classified as food insecure. The zones with the highest rates of chronic food insecurity were Central (5%), Zanzibar (4.5%) and Lake (4%).

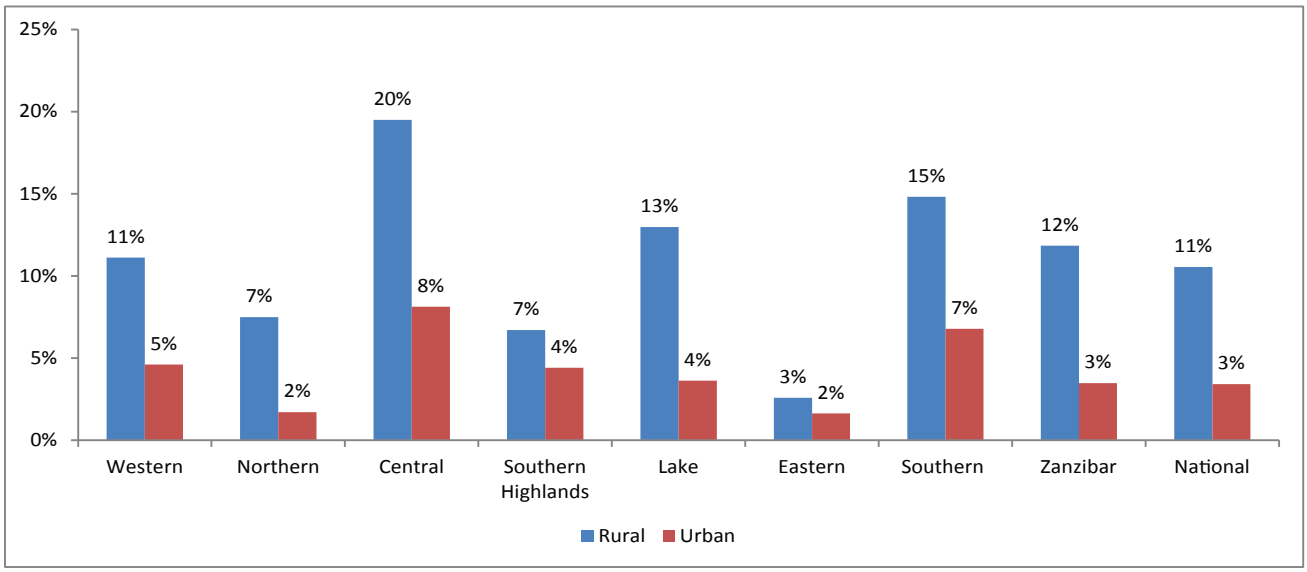
Some 87% of Tanzania's PDI households were in rural areas. The highest rural PDI prevalence was in the Central (20%), Southern (15%), and Lake (13%) zones. Around 63% of households consumed a diet considered to be adequate–i.e., they experienced neither food energy deficiency or had low diet diversity – with the proportion higher in urban (76%) than rural areas (57%). There was a slight rise in the proportion with an adequate diet in most zones, except the Northern, where the percentage fell from 75% in 2008/09 to 67%.

People in households classified as having PDI consumed, on average, an alarmingly low 1,068 kilocalories daily, far below the recommended average intake for an adult male undertaking light physical activity (2,050 kcals) and far below that of the rural and urban average (1,944 kcals and 2,325 kcals respectively).

Some 80% of the kcals (around 850 daily) consumed by PDI households came from staples (cereals, roots or tubers) compared with 70% (1,290 kcals) for the total population. PDI households consumed far less meat, fish and eggs, deriving less than 3% of their food energy from this protein-rich food group compared with over 6% for non PDI households.

Almost one third (30%) of PDI households stated that - in the 12 months preceding the survey–they faced a situation in which there was not enough food to feed the household. Most PDI households that reported facing this situation (57%) said the main cause was 'inadequate household stocks due to drought/ poor rains'.

FIGURE 2: PDI PREVALENCE, RURAL AND URBAN, BY ZONE (2010-11)



[6]Food insecurity is based on the poor dietary intake indicator throughout this report.

POOR RAINFALL PROMPTS SEASONAL SHORTAGES

In the 12 months before the phase 2 interview, a fifth of households reported facing at least one situation when there was not enough food to feed members, on average for around 3.5 months of the year. Lake (26%), Western (25%), and Central (24%) zones were most likely to report a food shortage and the Southern Highlands and Zanzibar least likely. In the week before the survey, 42% of households employed at least one coping strategy to manage a food shortage situation.

Overall, households in the country's northern bimodal zone were more likely than unimodal households to experience a shortage (23% vs 17%) largely because of drought and rainfall shortages.

After drought, rural households blamed shortages on small land size and lack of farm inputs while urban households blamed lack of money and high food prices alongside drought, reflecting the fact that town dwellers are more likely to buy than produce their food. A very high 72% of Zanzibari households that experienced food deficits pinpointed drought as the main cause.

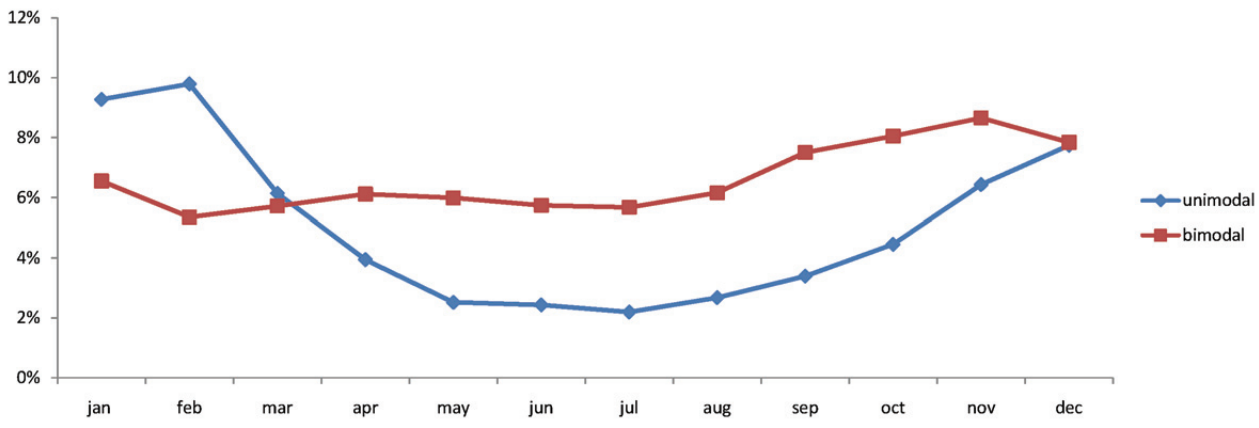
Tanzania's dual rainfall regime

The unimodal zone covers the south and west, and experiences one long rainy season from December to April with planting taking place in November and harvesting in June and July.

The bimodal zone – Tanzania's north, east and northern coast – experiences a short rains period from October to December and long rains from March to May. Short rains harvesting occurs in late January and February and long rains harvesting in July/August.

For unimodal households shortages reportedly peaked outside the main harvest periods, between October and February, reaching a shortage peak at the onset of the rainy season. The bimodal north experienced a more consistent – though much higher – rate of food shortages throughout the year with shortages peaking during the short rains (October-December), and not dropping below 5% for any month.

FIGURE 3: HOUSEHOLDS EXPERIENCING FOOD SHORTAGES BY MONTH, BY RAINFALL REGIME



WHO ARE TANZANIA'S FOOD INSECURE?

The rural poor

Food insecurity is intrinsically linked to poverty: two thirds (66%) of food insecure (PDI) households fell below the poverty line vs. 18% of all households in Tanzania and 47% were below the food poverty line.

In 2010-11, the poorest geographic zones were also the least food secure. The highest rates of poverty were in the Central (27%), Western (25%) and Southern (23%) zones. Correspondingly, households in these three zones were least likely to consume diets that were satisfactory in terms of both quality and quantity.

In the lowest expenditure quintile households, 20% of children aged 5-13 years and 10% of under five year olds, had not eaten breakfast compared with 10% and 4% of these age groups respectively on a national level. The lower the expenditure quintile the higher the share of expenditure a household directed towards food, making these households far more vulnerable to price fluctuations.

Counting Tanzania's poor

The Poverty Line represents the value of a standard consumption bundle of goods and services deemed adequate for an average adult to live satisfactorily. In 2010-11 the total poverty line per adult equivalent was 23,933 Tanzanian Shillings a month, calculated using October 2010 – September 2011 prices.

The Food Poverty Line measures a more severe form of poverty. It identifies households whose total consumption value falls short of that required to purchase the minimum value of foods, given the household's number of adult equivalents based on a daily intake of 2,200 kcals per adult. Foods selected for the food bundle are based on consumption patterns and prices paid by the bottom 50% of the population. For 2010-11 it was set at 18,719Tsh.

According to the 2010-11 NPS, 18% of Tanzania's population fell below the Poverty Line with rural dwellers more likely to be poor than urban (22% vs 5.2%). And 8% of Tanzanians were deemed to live below the Food Poverty Line: of these 94% lived in rural areas.

Smallholder farmers and those reliant on their own produce for food

Tanzanian agriculture is dominated by smallholder farmers. Overall 43% of households derive more than half of their income from producing crops, a further 6% from livestock and 8% are dependent on a mixture of agricultural wages, livestock and crop production.

These households were more likely to be food insecure than those in the other main livelihoods: 12% were classified as having PDI – more than double the PDI prevalence of the two main non-agriculture livelihoods. Some 82% of PDI household heads worked in farming. They were more dependent on staples and directed a greater share of expenses to food (71% directed more than 75% of their household expenditures to food).

On average Tanzanians derived 37% of their food energy from their own production, rising to 45% for PDI households and 62% for farming households. Of the 9% of households that derived more than 90% of their food energy from own-production, 22% were classified as food insecure compared with the abovementioned national average of 8%.

The poorly educated

In 2010-11, 15% of households with non-schooled heads were food insecure compared with 6% of those whose head went to school. Those with non schooled heads were also more likely to direct a very high share of household expenditures to food (70% vs 46% for schooled) and they were more likely to have worried about not having enough to eat (48% vs 32%) in the seven days before being surveyed.

At the national level, 24% of household heads did not attend school, rising to 37% in the Central zone and 27% in Zanzibar. The majority of farming household heads never attended school (65%). Households with school-aged children (6-14 years old) not attending school were more likely to be food insecure too. Nationally, approximately 10% of households with school–aged children were not sending any kids to school rising to 22% and 13% in the Central and Western regions respectively.

Households whose income mostly came from money transfers

On average 6% of households were reliant on transfers as their main livelihood source, peaking at 10% in Zanzibar followed by the Northern and Central regions (8%). Alongside crop–producers this livelihood group had the highest incidence of food insecurity with approximately 13% of households having PDI. Their vulnerability is further highlighted by other indicators: around half of these livelihood groups derived a very high share (>75%) of their calories from staple foods (cereals, roots and tubers), and over 70% spent a very high proportion (>75%) of their expenditures on food. Transfers-dependent households were more likely to be headed by women (56%). And they formed the poorest livelihood group: 44% of these households belonged to the lowest expenditure quintile.

Households with high number of dependents and those headed by women

In 2010-11, the average household size in Tanzania was 4.9 and about half had five or more household members. The TZNPS found that the dependency ratio[7] averaged 41%. Around 10% of households recorded a high dependency rate (more than 70%), peaking in the Southern Highlands (13%) and Northern regions (12%). Approximately 14% of households with high dependency rates were classified as having PDI compared with 8% of households without high dependency rates. Female headed households accounted for around a quarter (26%) of all households nationally and were slightly more prone to experiencing food insecurity: in 2010–11, 11% of female headed households were classified as having PDI compared with 7% of male headed.

[7]Dependency ratio is a measure of the portion of household members who are too young or too old to work (ie. below 15 years or above 65 years).

TANZANIA'S CHILDREN: FOUR IN TEN TOO SHORT FOR THEIR AGE

Stunting (low height for age) is a measure of chronic malnutrition characterized by a slowing in the growth of a child. It is associated with chronically inadequate levels of protein and energy and/or micronutrient deficiencies, frequent infections and inappropriate feeding practices over a sustained period. At the national level, four out of 10 children (42%) aged under five years were stunted, 17% severely so.[8] Children in rural areas were more likely to be stunted (45%) than their urban counterparts (32%).

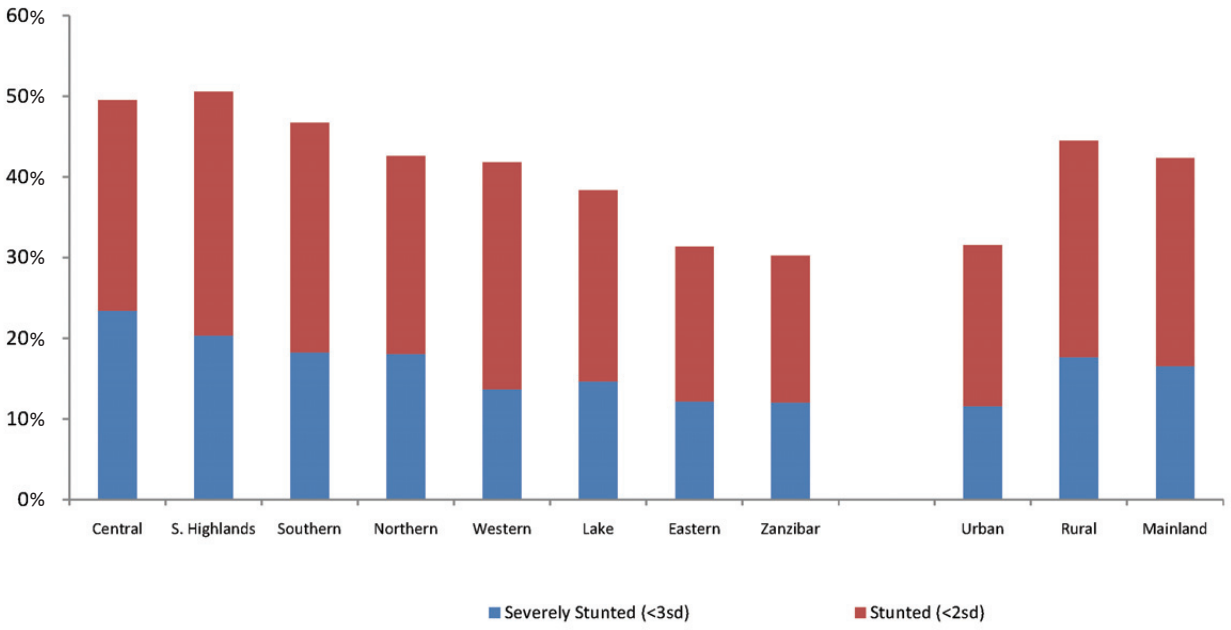
The Southern Highlands zone stood out as exhibiting very high rates across all its regions: Iringa (52%), Rukwa (50%), Mbeya (50%). Other regions reporting high stunting prevalence included Dodoma (56%) and Lindi (54%). Stunting was more prevalent in poorer households and those in which the mother had little or no formal education.

Wasting (or thinness) represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Nationally, 5% of children were wasted and 1% severely wasted. Zanzibar had a higher prevalence of wasting than mainland Tanzania (12% vs. 5%).

Underweight is a composite index of stunting and wasting. It takes into account both chronic and acute malnutrition. Nationally, 16% of children were underweight. Prevalence was higher for rural children (17%) than urban (11%), and Zanzibar children were more likely to be underweight than their mainland counterparts (20% vs. 16%). In mainland Tanzania, Arusha (in the Northern zone) had the highest rate of underweight children (28%).

The Central and Northern zones were among the zones with highest prevalence for all three indicators. While the prevalence of severe wasting in Zanzibar was at least double that of the other zones, the archipelago's young children were the least likely of all zones to be stunted.

FIGURE 4: PREVALENCE OF STUNTING, CHILDREN < 5 YEARS, 2010-11



[8]All nutrition findings are from the DHS, 2010.

IMPROVE AGRICULTURAL TECHNIQUES AND KNOWLEDGE TO INCREASE FOOD SECURITY

Agriculture is the backbone of Tanzania's economy. The industry contributes almost a quarter of GDP and employs 70% of the active labour force,[9] making it the main source of livelihood. From 2000–2010 the sector grew steadily (between 3% and 6%). [10]

Crop production is centered on several key food crops – maize, which is the dominant staple, cassava, sweet potatoes, bananas, sorghum and sugar cane. Maize yields are typically low (0.75 tons per hectare) with production growing very little from 2007-2010 (1%).

While root crop production grew annually by more than 4% between 2000–2007, vegetable production stagnated and that of pulses, rice and sorghum declined. Cassava was one staple food crop experiencing steady growth. Some of the fastest growth rates were for export-oriented cash crops, such as cotton, sugar, tobacco, cashew nuts, coffee and tea thanks to an increased use of improved seedlings, good farming techniques, an expansion of farming areas and renewed farming on abandoned farms.[11]

In recent years growth in fisheries has kept pace with overall agricultural production, while income from livestock and poultry are important for smallholder and low income families in many parts of the country, although the livestock sector has not performed as strongly as that of crops and fisheries.

In spite of some successes growth did not keep pace with overall national growth and food producers in Tanzania are the most likely to be poor and food insecure. Rural poverty rates fell just one percentage point – from 39% to 38% from 2000-01 to 2007-08.[12]

Small scale producers are chiefly subsistence level farmers (around 85% own fewer than four hectares of land[13]). The potential gains from modern machinery, improved seed varieties, irrigation and fertilizer remain outside the economic and skills – reach of most farmers. In 2010-11, less than a third (32%) used fertilizer[14] and only 17% sowed improved variety (IV) seeds designed to enable crops to grow in adverse conditions – such as drought. Over 95% were still using hand hoes.[15] Only 2% of cultivated land was irrigated, making farmers highly reliant on rainfall and rendering them vulnerable to extreme weather conditions.

Many smallholder farmers suffer from either pre-harvest losses largely because of drought or post – harvest losses because of inadequate storage. Lack of access to credit is a major barrier to increased productivity and income: in 2010-11, only 2% of farmers reported receiving credit for the purchase of agriculture inputs.

These factors all compound to create the entrenched situation of Tanzania's farming households experiencing a particularly great vulnerability to food insecurity.

Planned operational interventions are set out in the sector's major development programmes:

- The Agricultural Sector Development Program (ASDP) for Tanzania Mainland
- The Agricultural Sector Plan (ASP) for Zanzibar
- Tanzania's Comprehensive Africa Agriculture Development Programme (CAADP)

The interventions aim to enable farmers to access and use agricultural knowledge, technologies, marketing systems and infrastructure, and to promote private investment in an improved policy environment.

[9]GoT, 2011
[10]Ministry of Agri, 2011
[11]GoT, economic survey 2011
[12]GoT, Economic Survey, 2011
[13]NBS, 2012
[14]NBS, 2012
[15]NBS, 2012

NUTRITION INTERVENTIONS

In recent years, nutrition has gained prominence on Tanzania's policy agenda. Two strategic papers – the National Nutrition Strategy (NNS) for Tanzania Mainland and the Zanzibar Food Security and Nutrition Policy (ZFSNP) – set the agenda for all Tanzanians to attain adequate nutritional status. Government partners support interventions such as feeding practice support for mothers, food fortification and micronutrient supplementation. Two key partner initiatives include the Scaling up Nutrition (SUN) and Feed the Future programmes.

The agriculture sector should be central to these efforts because most of the country's poor live in rural areas, where health conditions and health services are worse. And many rural households get most of their food from their own production.

The NNS aims to boost food access and food security for farming households by improving conditions for household food production, harvest and post-harvest handling, storage and preservation, food processing and preparation, animal husbandry and fishery. It also aims to establish services in which farming households are introduced to readily available, accessible and affordable farming technologies. It identifies the critical need to establish formal and informal lending institutions as well as effective extension services to help improve agricultural and livestock rearing practices.

Food processing and preparation techniques need to be geared towards retaining more of the nutritional quality of foods, and extending food shelf-life to ensure greater availability. For non-farming households, income – generating activities are needed so members can afford to purchase healthy foods. Once food is available at the household level – for farming and non-farming households alike – there must be equitable distribution of food among members to ensure all household members are well nourished. More recommendations are outlined below.

Crop and livestock diversification	Livestock programmes – in which rural households are given dairy cattle, goats and chickens – improve households' direct access to animal food products. Nutrition improves as milk and egg consumption increases; earning potential also improves as households can sell items not consumed. To encourage small farmers to diversify their crops, the government needs to invest in fruit and vegetable production, processing and marketing. Widespread education campaigns should be undertaken about the importance and source of micronutrients for child development.
Fortification	Opportunities exist to enrich foods such as maize, wheat flour, sugar, oil and salt with nutrients such as iron, vitamin A and zinc. The few small scale efforts underway should be expanded and the nutritional impact properly assessed. For households dependent on consuming their own produce, home – based fortification interventions are required, and planned under the NSS. This requires widespread distribution of nutrient powders to community level millers and the marketing of nutrient sprinkles.
Biofortification	This refers to breeding crops in a way that increases their nutritional value – either by conventional selective breeding, or genetic engineering. The process adds nutrients to the foods as they grow rather than during the processing phase. Regular consumption of staple foods enriched with key micro – nutrients such as iron, zinc, and vitamin A can considerably reduce micronutrient deficiencies in staple dominated diets.
Changing behaviour via nutrition campaigns	Education campaigns should be wide – ranging to cover which foods to eat, food preparation, sharing foods across household members and growing food. Additionally, informing and educating adolescent girls and women about breast feeding and appropriate complementary feeding of young children is likely to help reduce child malnutrition. The scope of agricultural extension services in Tanzania should be broadened to incorporate nutrition (for example, encouraging smallholder famers to embrace crop diversification).
Nutrition supplements	Supplement preparations containing high doses of nutrients can treat the diseases that cause and aggravate nutrient deficiencies but are more useful for treating symptoms of undernutrition in a short – term programmatic manner.

POLICY LEVEL RECOMMENDATIONS

Tanzania's comprehensive policy infrastructure and environment appears satisfactory for tackling food insecurity. But a coordinated cross – sector approach to rolling out food security interventions is needed. To this end, in 2011, the government of Tanzania launched the Tanzania Agriculture and Food Security Investment Plan (TAFSIP), which is described as a sector – wide approach to coordinate and harmonise the resources needed to realise existing initiatives and to launch new ones that address national, regional and sectorial development priorities. In addition we recommend the following:

Strengthen existing programmes to boost agricultural productivity by focusing on the supply side of the value chain	These schemes must be wide-reaching and targeted to the areas of most need. The introduction of technologies must be accompanied by sufficient and comprehensive training and extension services.
Focus food security specific policies and interventions on household livelihoods and income generation	Design food security interventions that support a variety of different livelihoods. Income generating opportunities must be realised across the different sectors.
Reinforce disaster preparedness and response measures with focus on household coping and resilience	Opportunities are emerging to establish systematic disaster preparedness and response measures to reduce future drought and other shocks. The United Nations Development Assistance Plan identifies the need for greater capacity within line ministries to ensure better coordination and rapid response when disaster strikes. Also develop a strategy regarding the resupply of strategic emergency warehouses.
Conduct studies into Tanzania's food security situation at lower geographic levels	Richer information is critical for the planning, implementing and tracking of interventions at the Local Government Area levels. If conducted on a small – scale, studies should focus in on areas known to be particularly vulnerable to food insecurity to refine targeting of food – based interventions such as school feeding, food for work and cash for work.
Scale up safety net schemes	PDI households are in need of immediate relief. Several safety net programmes have been initiated by the government and partners including different forms of school feeding and food for work.

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