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SERA Policy Brief

*Food Basket Costs in Tanzania **

Food is the largest expenditure item for the typical Tanzanian household and accounts for significantly more than half of total expenditures for the poorest. Consequently, food prices and food costs are very important to consumers and to the Government of the United Republic of Tanzania (GOT) as it addresses food security concerns. Since the typical diet and food prices vary greatly across Tanzania, it is important to consider the cost of the entire food basket in each region in order to fully understand the implications for food security. The SERA Policy Project and the Economic Research Service of the U.S. Department of Agriculture worked closely with the Department of Food Security and the Department of Policy and Planning of the Ministry of Agriculture, Food Security, and Cooperatives to develop and pilot a comprehensive and systematic approach to measuring food costs. This approach is referred to as the Food Basket Methodology (FBM), and it is used to measure the monthly costs of the typical food basket.

This Policy Brief explains the Food Basket Methodology and provides estimates of the monthly food basket costs from January 2011 to July 2015 for 21 regions in Tanzania and considers the implications for food security. Food basket costs can be used to provide early warning of regional food cost increases, but they can also provide valuable insights into broader food security issues by showing how prices of individual food items affect overall food basket costs and how food prices are related within a region and between regions. This information can be used to assess the impact of a particular food price increase on food basket costs. For example, maize is the main food staple in Tanzania accounting for about 40% of total calories in the typical diet; but it accounts for only 14.5% of the cost of the typical food basket and less than 8% of the food basket cost in Dar es Salaam. Consequently, an increase in maize prices has less of an impact on food costs and food security than implied by its calorie share or market visibility. Such detailed knowledge of food basket costs can contribute to better understanding of food security in Tanzania and lead to better policy decisions and better targeting of food assistance by identifying vulnerable regions and their consumption patterns.

* This Policy Brief was prepared by Don Mitchell and Aneth Kayombo, Senior Advisor and Policy Analyst, respectively, of the SERA Policy Project. It relies heavily on the methodology and initial analysis done by Nancy Cochrane of the U.S. Department of Agriculture but extends the analysis to 21 regions and focuses on the implications for food security. Thanks are given to the National Bureau of Statistics for providing data used in the calculations and the Ministry of Agriculture, Food Security, and Cooperatives for piloting the Methodology and providing valuable insights into regional food costs. Comments should be addressed to Marialyce Mutchler, the SERA Chief of Party, at marialyce.mutchler@tzsera.com. The SERA Policy Project is a USAID-funded Feed the Future project that seeks to improve agricultural policies and develop capacity for policy analysis and advocacy in Tanzania. The project is implemented by Booz Allen Hamilton.

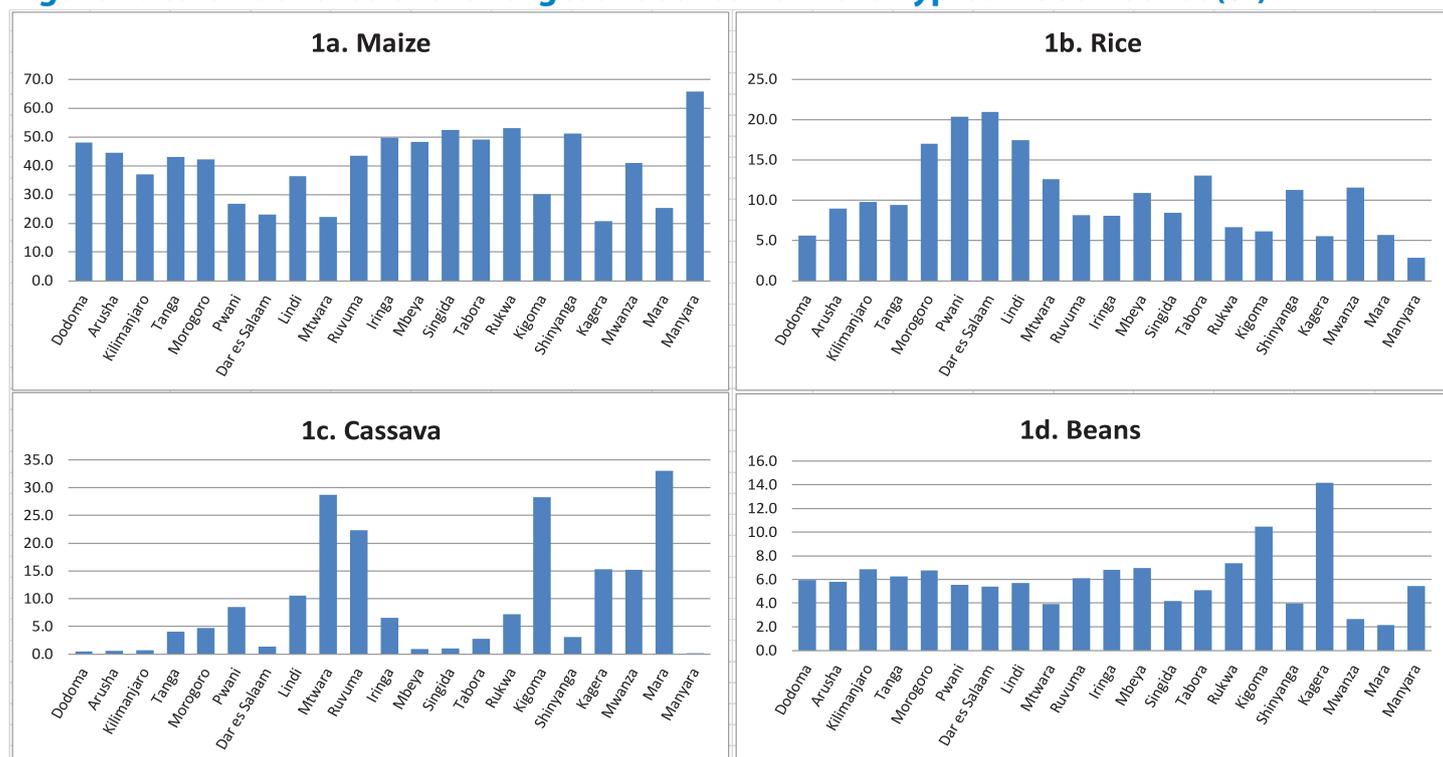
Food Basket Methodology

The typical food basket is comprised of a large number of food items, but relatively few items account for the bulk of the food basket's calories and costs. For the FBM, the 17 food items with the largest contribution to the total calories in the Tanzanian diet were selected to be included in the typical food basket. This was done partly due to data limitations and partly to reduce the computational burden of including a larger number of food items with small calorie shares in the food basket. These 17 food items account for an average of 88% of total calories in the typical regional food basket. The contribution of the remaining food items was estimated by scaling up the food basket to the total daily calories consumed per person per day in Tanzania.

The costs of the 17 food items in the typical food basket were computed based on monthly retail prices and per capita consumption. The retail prices for the major urban center in each region were obtained from the National Bureau of Statistics and calorie shares were obtained from the National Panel Survey 2010/2011. The calorie shares are nationally representative, but the sample sizes are not sufficient for the calorie shares to be statistically representative at the regional level and, thus, regional results should be used with caution. A sensitivity test was performed in order to determine the share of food basket cost differences between regions that were due to prices and those that were due to the composition of the food basket. The results showed that about 70% of the differences in regional food basket costs compared to the national average were due to the composition of the food basket and about 30% were due to differences in prices. This highlights the importance of the composition of the food basket in food costs and the importance of improving estimates of regional consumption patterns. There was wide variability in these results. For example, nearly all of the difference in Mtwara region was due to prices while nearly all the difference in Dodoma region was due to the composition of the food basket. The Dar es Salaam region was representative of the national average, with 29% of the difference in food basket costs compared to the national average due to prices and 71% due to the composition of the food basket.

Composition of the Typical Diets

Maize is the dominant food staple in Tanzania, accounting for an average of 40.6% of the share of total calories in the 21 regions during 2011-2014. However, the share of maize varied, accounting for less than 25% of total calories in Kagera, Dar es Salaam, Mara, Mtwara and more than 50% in Manyara, Rukwa, Shinyanga and Singida (Figure 1a). Rice was the second largest item in the typical diet, accounting for an average of 10.5% of total calories in the 21 regions. The calorie shares from rice ranged from a low of 2.9% in Manyara to a high of 20.9% in Dar es Salaam (Figure 1b). Cassava was the third largest component of the diet, accounting for 9.3% of total calories and the largest share of calories in Mtwara (28.7%), Mara (33.0%), and Kigoma (28.3%) regions but only 0.6% in Arusha and 1.3% in Dar es Salaam (Figure 1c). Dry beans ranked fourth in their contribution to total calories in the typical diet, accounting for 6.1% and having less variability than either maize or rice (Figure 1d). Bananas were an important contributor to the diets in Kagera, but a relatively small component of the diets in most other regions. Fish and animal products accounted for only 1.1% and 3.4% of total calories, respectively. The three largest food items accounted for 65% of total calories in the typical diet. Diets were more diversified in more urban regions and higher income regions and less diversified in more rural regions. Annex Table A1 provides the calorie shares for all regions.

Figure 1. Calorie Shares of the Largest Food Items in the Typical Food Basket (%).

Source: SERA based on National Bureau of Statistics data.

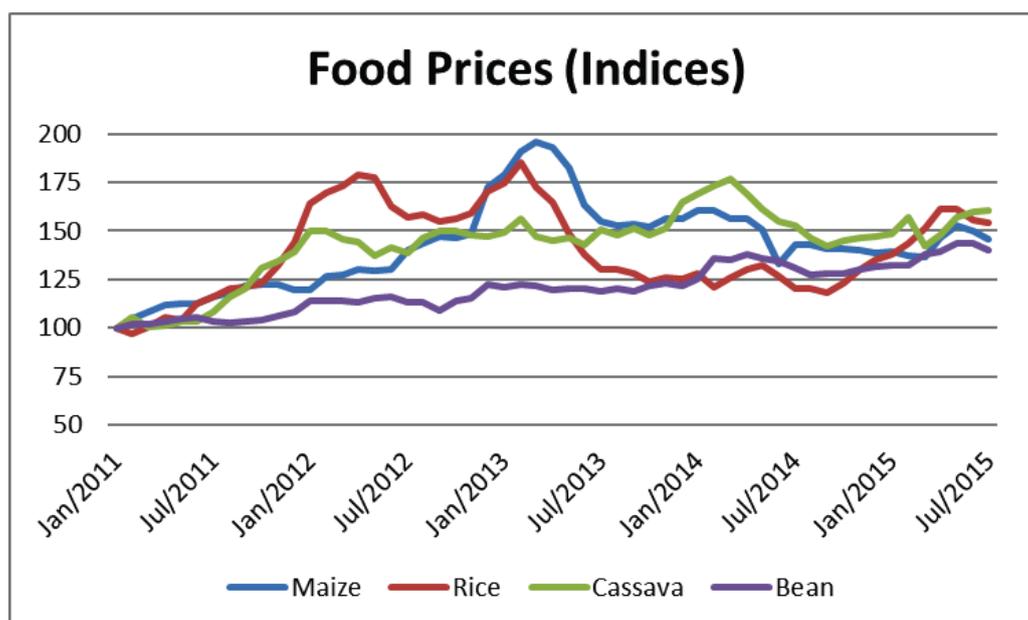
Food Prices

Retail food prices varied widely across Tanzania with perishable foods, such as mangoes and bananas, having the highest variability, with the highest average price among the 21 regions more than triple the lowest price. Staples, such as maize and cassava, had highest prices that were more than double the lowest prices. Rice, wheat flour, and sugar had the lowest variability with the highest price above the lowest price by 31%, 24%, and 18% respectively. Improved roads, better storage, and improved market information would all contribute to reducing the price differences and result in higher prices for producers, lower prices for consumers, and improved food security. The range of prices and the coefficient of variation (CV)² of prices are shown in Annex Table A2.

A number of regions had the lowest or highest prices in more than one commodity which, at least in part, reflects transportation costs and linkages. Rukwa had the lowest prices for maize and rice, Singida had the lowest prices for cooking oil and fresh fish, Kagera had the lowest prices for beef, beans, and cooking bananas; and Kigoma had the lowest prices of cassava, sweet potatoes, sweet bananas, and mangoes. Mtwara had the highest prices for fresh fish, beef, cooking bananas, and chicken; Lindi had the highest prices for beans, finger millet, and mangoes; and Kilimanjaro had the highest prices for cassava and sweet bananas. The southern regions of Mtwara and Lindi accounted for the highest prices for 7 of the 17 food items and are regions not well linked by transportation. These regions are especially vulnerable to food insecurity if local food production is disrupted by drought or other events.

Food prices were not found to be highly correlated which has important implications for food security and policy responses. The monthly retail prices of the four food items with the largest calorie shares in the typical food basket are shown in Figure 2. The average correlation coefficient between these food prices was about 0.50 which means that approximately one-quarter of the variability in one food price was explained by the variability in another food price. This has important implications for food security because it means that individual food prices have not historically risen or fallen together and that gives consumers greater opportunities to switch

² The coefficient of variation is defined as the standard deviation divided by the mean of the data series.

Figure 2. Prices of Four Largest Food Items in the Typical Diet.

Source: SERA based on National Bureau of Statistics data.

Note: The indices are for nominal food prices in TZS/kg, with January 2011=100.

among food items when the price of one item rises. Nominal prices for these important food items have not trended higher since 2013, and prices for each region are shown in Annex Table A3.

Food Basket Costs

The average nominal food basket costs during 2011-2014 ranged from a low of 21,921 TZS per person per month in Kigoma to a high of 44,020 TZS per person per month in Dar es Salaam (Table 1). The lowest food basket costs were generally concentrated in surplus producing regions such as the regions in the Southern Highlands and the highest were in more urbanized regions such as Dar es Salaam and more remote regions such as Mtwara and Lindi. Mwanza also had high food costs. Comparing food basket costs across regions is not

Table 1. Nominal Food Basket Costs by Region, (TZS/ Person/ Month)

Region	Average 2011 - 2014	Region	Average 2011 - 2014
Dodoma	25,739	Mbeya	26,550
Arusha	39,849	Singida	26,576
Tanga	28,460	Tabora	29,974
Kilimanjaro	41,212	Rukwa	25,679
Morogoro	31,774	Kigoma	21,921
Pwani	42,040	Shinyanga	33,310
DSM	44,020	Kagera	31,991
Lindi	32,988	Mwanza	40,101
Mtwara	41,111	Mara	38,735
Ruvuma	23,854	Manyara	28,688
Iringa	27,645	Average	32,486

sufficient to identify regions vulnerable to food insecurity because it does not consider the ability to access food. Access to food depends on income as well as food costs and other factors, and is usually measured as the share of household income spent on food. The USDA³ study concluded that the households in the bottom two income quintiles⁴ in Tanzania face problems with access to food because the cost of a minimal food basket is close to 100% of the average income of the bottom quintile and 80-90% for the second lowest quintile. Access to food in Tanzania was not measured because data on household incomes is not readily available. Per capita GDP is available for regions, and while not a good measure of household incomes, it does provide some evidence of the ability of households in various regions to access food. It shows that more urbanized regions, such as Dar es Salaam, have greater access to food because incomes in those regions are high enough to offset high food basket costs. The surplus producing regions in the Southern Highlands also have better access to food because they have both low food costs and relatively high incomes. The regions with the poorest access to foods are Kagera, Mara, Mtwara, and Shinyanga because they have high food costs and relatively low incomes.

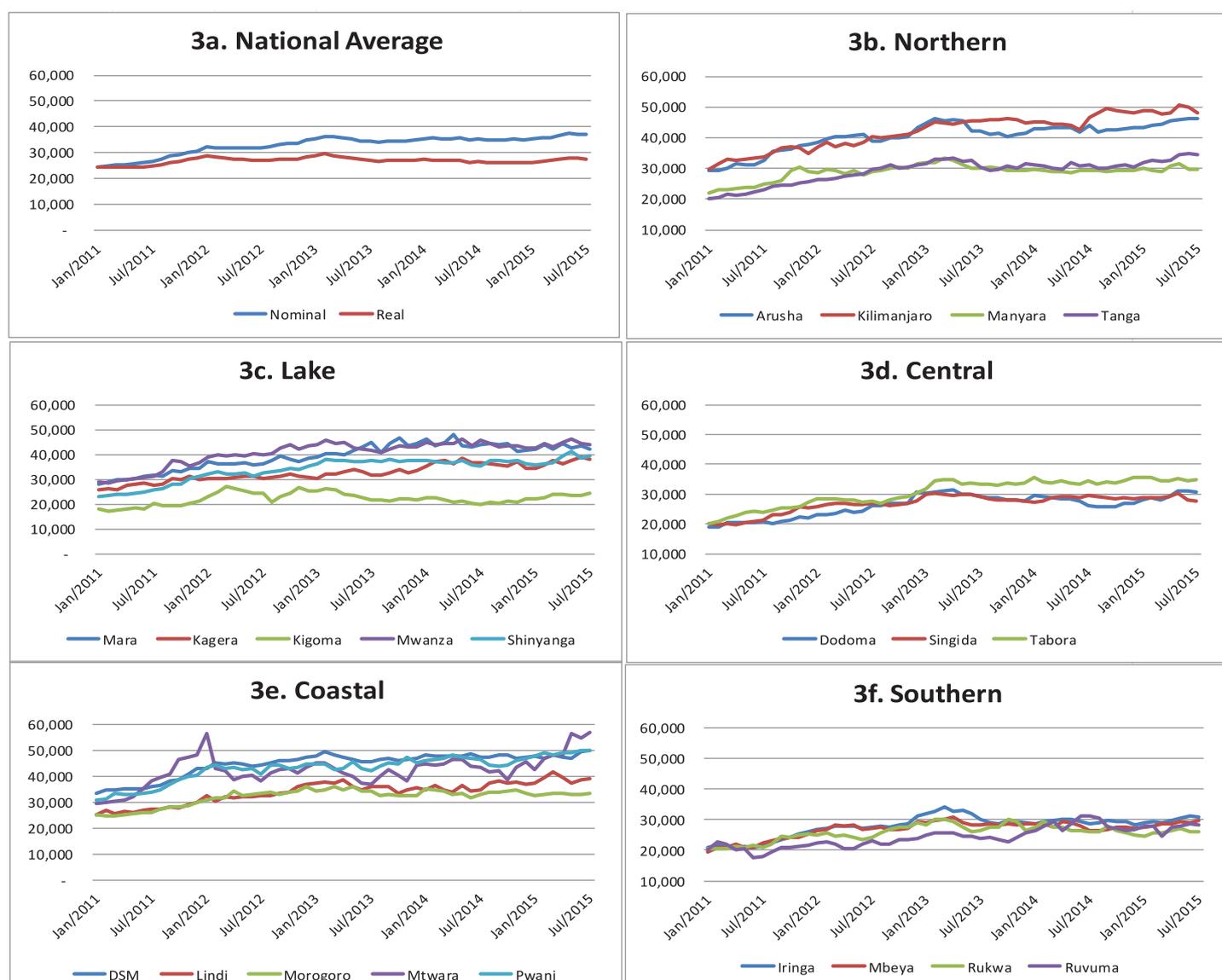
While not an adequate measure of access, comparing food basket costs across regions provides useful information on relative food basket costs and regional differences. National average food basket costs are shown in Figure 3a in real⁵ and nominal terms, and food basket costs for all other regions are shown in Figure 3(b-f) only in nominal terms because regional price deflators are not available to compute real regional food basket costs. Real food basket costs for Tanzania have been relatively stable since 2012 (Figure 3a) while nominal food basket costs have increased modestly. Real food basket costs peaked in January 2013 and declined 6.4% through July 2015 while nominal food basket costs increased 2.6% over this period. Comparing nominal food basket costs across Zones shows that Coastal and Lake Zones had the highest food basket costs while the Southern and Central Zones had the lowest. There were significant differences in food basket costs within Zones, with Kigoma region having much lower costs than other regions in the Lake Zone and Manyara and Tanga having much lower food basket costs than Arusha and Kilimanjaro in the Northern Zone. Mtwara in the Coastal Zone has had significantly greater variability in food basket costs than other regions in that Zone and was experiencing a period of rapid food basket cost increases in mid-2015. This illustrates the usefulness of the Food Basket Methodology as an early warning tool.

The contribution of individual food items to food basket costs contrasts sharply with the contribution of these food items to total calories in the diets. Fish and animal products (beef, dairy, and poultry) accounted for 34% of the cost of the typical food basket but contributed only 5% of total calories, while cereals (maize, rice, millet, sorghum, and wheat flour) contributed 26% to the cost of the typical food basket but 54% to total calories (Annex Table A4). Fish had the largest contributions to food basket costs (16.7%), followed by maize (14.5%). Rice was the third largest cost component of the typical diet (8.6%), but ranked first in Dar es Salaam at 13.9%. Cassava was largest in Kigoma and Mara and fourth largest nationwide accounting for 7.5% of total food basket costs. Beans, which are an important source of protein accounted for 6.1% of total calories and 5.8% of total costs. The relatively low share of beans in the calories and costs of the typical diet suggest that beans could improve the protein content of the diet at relatively low cost. Food basket costs were much less variable during 2011-2014 than the prices of the major food items that comprised the basket. For example, the coefficient of variation (CV), was about half as large for the cost of the typical food basket as for the individual prices of the food items that comprised the food basket. The average coefficient of variation of the typical food basket was .121 compared to the average coefficient of variation of individual food prices of .223. The CVs for the prices of individual food items are reported in Annex Table A2 and were computed as the average of the CVs in each region for monthly retail prices from January 2011 to December 2014. The average CVs for the four food items with the largest calorie shares in the food basket were: maize (.226), rice (.186), cassava (.214), and beans (.124).

³ USDA, Economic Research Service, "Measuring Access to Food in Tanzania: A Food Basket Approach" by Nancy Cochrane and Anna D'Souza, February 2015

⁴ A quintile is 20%, so the lowest income quintile would be the households with the lowest 20% of incomes of all households.

⁵ The non-food CPI was used as the deflator because food is a large component of the overall CPI and deflating by it would understate food price inflation.

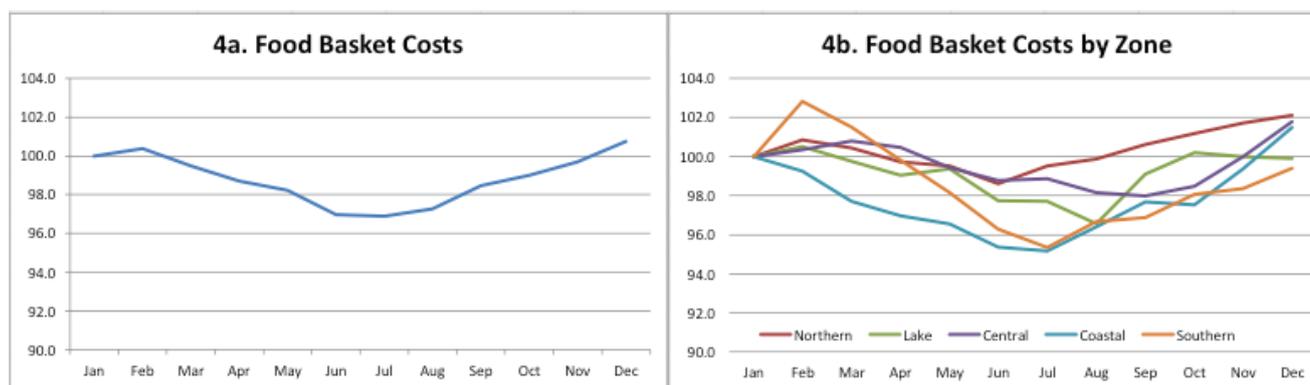
Figure 3. Food Basket Costs, January 2011-July 2015 (TZS/month/person).

Source: SERA based on National Bureau of Statistics data.

Seasonality

Food basket costs and food prices had strong seasonal patterns during 2011-2014, with prices reaching a peak during November to February and then declining to their lows during June to August⁶. This pattern was evident in all regions and for most food items. Figure 4a shows the pattern for the national average food basket measured in real terms relative to non-food consumer items in the economy. Food basket costs declined about 4% from highs to lows and then returned to their highs during the end-of-year period. Figure 4b shows the food basket cost index for geographic Zones and shows a similar pattern. The crop-based food prices (maize, rice, cassava, beans) had a similar seasonal pattern to the food basket costs, while the non-crop-based food item (fish, chicken, beef, milk) did not follow the same seasonal pattern as closely. Real fish prices did not have an evident seasonal pattern as prices rose steadily throughout the year, while beef showed a similar seasonal price pattern to crop-based food prices. Chicken and milk had a less pronounced seasonal pattern than crop-based food prices but followed the same pattern. The seasonal pattern in food basket costs was less variable than the seasonal pattern for individual crop-based food items.

⁶ The seasonal indices were computed as the average of the price movements of real (deflated) prices in each year relative to January which was set equal to 100. Real prices were used instead of nominal prices to remove the tendency for nominal prices to increase throughout the year and thus appear as seasonal trends.

Figure 4. Seasonal Food Basket Costs and Food Prices, Index with January=100.

Source: SERA based on National Bureau of Statistics data.

Conclusions and Policy Implications

Food is the largest expenditure item for the typical household in Tanzania and accounts for significantly more than half of total expenditures for the poorest households. The typical food basket contains a large number of food items, but relatively few account for most of the calories in the food basket. Maize accounts for about 40% of total calories, but only 20% in some regions such as Dar es Salaam. Rice and cassava are the second and third most important foods based on their contribution to calories in the diet, and each contributes about 10% of total calories. Cassava is an important food item in a few regions such as Mara, Kigoma, and Mtwara where it contributes about 30% of total calories but is less important in most other regions. The contribution of individual food items to food basket costs is significantly more diversified than the contribution to calories in the diet. Maize accounts for 14.5% of total food basket costs while rice and cassava contribute 8.6% and 7.5%, respectively. Cereals (maize, rice, millet/sorghum, and wheat flour) account for about one-third of total food basket costs while contributing 54% of total calories to the diet. Animal products and fish account for about one-third of total food basket costs but contribute only 5% to total calories. The three largest food items in each region accounted for an average of 65% of total calories in the typical diet but only 40% of food basket costs.

Food prices have large variations between regions, with highly perishable foods such as mangoes and bananas having average prices in the region with the highest prices that are more than triple those in the region with the lowest prices. Maize prices are less variable than highly perishables, but the highest prices are still more than double the lowest prices. Rice, sugar, and wheat flour have the least variability; with the highest prices above the lowest prices by 31%, 18%, and 24% respectively. Part of the variability of prices is due to high transport costs, especially for foods such as maize, cassava, and potatoes that have low value-to-weight. But, others such as cooking oil that have high value-to-weight also have high variability and this may reflect market imperfections or a lack of market information that would encourage traders to profitably transport these items between regions. Improvements in roads, storage, and information systems would reduce these price differences and result in higher prices for producers and lower prices for consumers.

Food basket costs also vary widely between regions, with Dar es Salaam having the highest average food basket costs and Kigoma the lowest. The surplus producing regions of the Southern Highlands generally have the lowest average food basket costs at approximately 25,000-30,000 TZS per person per month. The Central Zone has the next lowest average food basket costs at slightly more than 30,000 TZS per month; and the Coastal, Lake, and Northern Zones have the highest food basket costs. However, there are large differences within these Zones (refer to Table 1 for details). Mtwara has the most volatile food basket costs and that seems to reflect the poor transportation linkages with other regions and highlights the vulnerability of this region to food insecurity when domestic production is disrupted. The differences in food basket costs between regions are due both to differences in prices and differences in consumption patterns, with about 70% of the differences due to the

composition of the diet and 30% due to differences in prices for Tanzania. Nominal food basket costs have increased over the 2011-2015 period, but real food basket costs have declined by about 6% since 2013. Real food basket costs have not shown the large seasonal variations that occur in individual food prices.

Main Findings and Policy Implications

Food prices are not highly correlated.

The prices of the four food items that account for more than two-thirds of total calories in the typical diet (maize, rice, cassava, and beans) are not highly correlated.

Policy Implication: A price increase in one of these food items does not typically mean that the prices of the other food items will be significantly affected. That reduces the food security concern when the price of one of these important food items increases.

Food basket costs are less variable than food prices.

The typical food basket is comprised of a large number of food items and the cost of the food basket is about half as variable as the prices of the items in the food basket.

Policy Implication: The cost of the typical food basket should be considered in monitoring and responding to food security concerns rather than just the prices of the basic staples.

Staple foods, such as maize and rice, account for a relatively small share of food basket costs.

Maize accounted for an average of 14.5% of total food basket costs and rice accounted for 8.6% in Tanzania. In politically sensitive Dar es Salaam, maize accounts for only 7.7% of the total food basket costs and rice accounted for 13.9%.

Policy Implication: Maize and rice are highly visible indicators of food security in Tanzania, but they account for a relatively small share of total food basket costs. The GOT should consider the entire food basket in its response to food security concerns, and should not focus on only the most visible food items.

Food consumption patterns vary widely across Tanzania.

Maize is the most important food item in most regions; but cassava, rice, and beans are also important. As incomes increase and diets diversify the importance of maize in the diet will decrease and other food items will become more important.

Policy Implication: Food assistance should not rely only on maize to meet the food needs of the poor and a cash transfer program would be more appropriate for responding to food security concerns in those regions where maize is not the basic staple.

Food prices vary widely between regions

The prices of most food items vary widely between regions due to high transportation costs, inadequate storage, and imperfect markets which are slow to adjust to price differences.

Policy Implication: Reducing this variability through investments in infrastructure and information systems would improve food security and increase prices to producers while also reducing prices to consumers.

ANNEX

Table A1. Calorie Shares of Food Items for 21 Regions (%).

	Arusha	DSM	Dodoma	Iringa	Kagera	Kigoma	Kilimanjaro	Lindi	Manyara	Mara	Mbeya
Maize	44.6	23.1	48.0	49.7	20.7	30.1	36.9	36.3	65.9	25.4	48.2
Rice	9.0	20.9	5.6	8.1	5.6	6.1	9.8	17.5	2.9	5.7	10.9
Beans	5.8	5.4	5.9	6.8	14.2	10.5	6.9	5.7	5.4	2.1	7.0
Bananas	2.9	1.2	0.0	1.6	16.6	3.4	11.1	0.8	0.7	1.7	3.2
Millet/Sorghum	1.1	0.8	16.9	0.4	0.2	0.2	0.7	4.4	0.5	11.5	0.6
Potatoes	0.4	0.8	0.3	1.3	1.3	0.1	0.3	0.1	0.2	0.2	1.3
Sweet Potatoes	0.2	0.4	0.6	0.9	3.1	1.9	0.5	0.6	0.1	0.9	0.9
Wheat/Other Grains	0.0	0.7	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.1
Cassava	0.6	1.3	0.5	6.6	15.3	28.3	0.7	10.5	0.2	33.0	0.9
Poultry	0.4	0.5	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.5	0.3
Beef/Goat	2.1	1.5	0.9	1.0	0.7	0.4	2.2	0.1	1.6	1.2	1.0
Fish	0.6	1.1	0.4	0.6	1.2	1.0	1.1	1.2	0.4	2.0	0.8
Cooking Oil	7.2	8.4	3.9	4.7	3.0	3.7	9.2	3.2	5.8	4.3	5.8
Ripe Bananas	0.5	0.6	0.2	0.6	0.9	0.5	0.5	0.3	0.1	0.2	0.7
Mangoes/Other Fruit	0.4	1.0	0.3	0.8	1.8	0.6	0.5	0.4	0.3	1.4	0.8
Sugar	5.8	5.5	2.5	3.7	3.5	1.7	6.6	2.5	4.6	3.0	3.1
Dairy	6.5	1.0	2.3	0.9	1.1	0.2	5.2	0.2	6.4	2.6	1.7
Total Calorie Share	88.0	74.2	88.7	88.1	89.4	88.7	92.8	84.2	95.4	95.6	87.2
Three Largest Share	60.8	52.4	70.8	64.6	52.6	68.8	57.8	64.3	78.2	69.9	66.1
	Morogoro	Mtwara	Mwanza	Pwani	Rukwa	Ruvuma	Tabora	Tanga	Shinyanga	Singida	Average
Maize	42.2	22.3	41.0	26.8	53.1	43.5	49.1	43.0	51.2	52.5	40.6
Rice	17.0	12.6	11.6	20.4	6.7	8.1	13.1	9.4	11.3	8.5	10.5
Beans	6.8	3.9	2.7	5.6	7.4	6.1	5.1	6.2	4.0	4.2	6.1
Bananas	3.9	0.8	0.8	2.4	1.4	1.0	0.3	3.2	0.3	0.3	2.7
Millet/Sorghum	0.2	1.9	1.8	0.6	1.6	0.3	3.5	0.3	3.2	11.8	3.0
Potatoes	0.6	0.2	0.1	0.4	0.4	0.2	0.1	0.4	0.2	0.2	0.4
Sweet Potatoes	0.8	0.3	6.3	0.7	1.6	1.2	2.9	0.4	3.5	0.6	1.4
Wheat/Other Grains	0.1	0.1	0.1	0.4	0.1	0.0	0.6	0.1	0.4	0.2	0.2
Cassava	4.7	28.7	15.2	8.5	7.2	22.3	2.7	4.1	3.0	1.0	9.3
Poultry	0.5	0.3	0.7	0.5	0.1	0.2	0.6	0.5	0.6	0.5	0.4
Beef/Goat	0.6	0.4	1.2	0.4	0.5	0.4	1.2	1.0	1.2	1.6	1.0
Fish	0.9	1.6	2.7	1.9	1.5	1.0	0.8	0.8	0.8	0.8	1.1
Cooking Oil	4.6	3.0	4.0	4.6	3.8	3.2	5.0	6.2	4.0	5.8	4.9
Ripe Bananas	0.7	0.2	0.3	0.6	0.4	0.5	0.3	0.2	0.2	0.2	0.4
Mangoes/Other Fruit	1.2	1.4	1.2	0.7	0.3	0.2	0.6	0.3	0.2	0.7	0.7
Sugar	2.6	2.8	3.0	4.3	2.0	2.5	2.6	5.9	3.3	2.4	3.5
Dairy	0.6	0.2	1.4	0.5	1.2	0.1	3.0	1.8	3.8	1.2	2.0
Total Calorie Share	88.0	80.6	94.0	79.3	89.2	91.0	91.5	83.9	91.2	92.5	88.3
Three Largest Share	65.9	63.6	67.7	55.7	67.6	73.9	67.3	58.7	66.4	72.8	65.0

Source: SERA based on National Bureau of Statistics data.

Table A2. Average Prices of Food Basket Items, 2011-2014, Range, Average, and CV.

	Lowest	TZS/kg	Highest	TZS/kg	Average	Range %	CV
Maize	Rukwa	404	Morogoro	953	651	136	0.226
Rice	Rukwa	1,306	Arusha	1,716	1,544	31	0.186
Beans	Kagera	1,180	Lindi	1,956	1,502	66	0.124
Bananas	Kagera	405	Mtwara	1,647	754	307	0.197
Millet/Sorghum	Iringa	1,146	Lindi	1,694	1,462	48	0.267
Potatoes	Mbeya	351	Pwani	1,104	745	214	0.167
Sweet Potatoes	Kigoma	343	Dodoma	857	608	150	0.215
Wheat Flour	Morogoro	1,159	Kigoma	1,439	1,318	24	0.078
Cassava	Kigoma	321	Kilimanjaro	858	598	167	0.214
Poultry	Tanga	3,765	Mtwara	13,017	6,119	246	0.112
Beef/Goats	Kagera	3,699	Mtwara	6,047	4,992	63	0.109
Fresh Fish	Singida	4,004	Mtwara	8,704	6,193	117	0.219
Cooking Oil	Singida	2,936	DSM	6,281	3,712	114	0.077
Sweet Bananas	Kigoma	606	Kilimanjaro	1,740	1,089	187	0.196
Mangoes	Kigoma	445	Lindi	1,685	1,091	279	0.305
Sugar	Iringa	1,815	Mbeya	2,143	1,990	18	0.093
Dairy	Tabora	777	Mtwara	1,474	1,474	90	0.112

Notes: Prices are the average of monthly prices from January 2011 to December 2014. Regions with the lowest and highest prices are shown along with the average of the 21 regions. The range of prices is shown as a percent of highest to Lowest (i.e., the range of maize is 549 TZS and the highest is 136% of the lowest). CV is the average of 21 regions.

Source: SERA based on National Bureau of Statistics data on retail food prices.

Table A3. Prices of Major Food Items by Region (nominal TZS/kg).

	-----Maize-----					-----Rice-----				
	2011	2012	2013	2014	2015*	2011	2012	2013	2014	2015*
Dodoma	393	527	681	475	486	1427	1791	1583	1336	1657
Arusha	667	847	961	876	928	1474	1980	1825	1587	1895
Tanga	460	461	615	469	473	1283	1972	1775	1608	1971
Kilimanjaro	425	599	958	983	1000	1361	1924	1830	1528	1914
Morogoro	803	933	1100	977	954	1302	1893	1502	1235	1399
Pwani	740	791	777	800	843	1321	2097	1782	1505	1914
DSM	661	788	983	948	940	1304	1956	1753	1624	1734
Lindi	500	566	713	646	766	1342	2032	1965	1465	1722
Mtwara	731	892	825	554	507	1211	2019	1774	1450	1800
Ruvuma	454	322	529	351	375	1292	1817	1622	1453	1676
Iringa	417	513	775	642	600	1247	1758	1558	1244	1443
Mbeya	361	481	673	529	498	1205	1888	1633	1500	1743
Singida	425	567	600	592	536	1363	2067	1716	1355	1629
Tabora	574	671	931	813	891	1169	1670	1661	1350	1550
Rukwa	311	456	529	320	293	1070	1523	1399	1231	1551
Kigoma	414	516	619	469	444	1224	1676	1397	1281	1626
Shinyanga	502	742	992	950	857	1179	1611	1375	1267	1586
Kagera	663	835	994	983	971	1302	1714	1400	1317	1690
Mwanza	484	628	651	613	484	1264	1817	1526	1466	1790
Mara	567	617	679	608	543	1232	1741	1442	1375	1700
Manyara	429	557	671	519	456	1391	1936	1741	1449	1804
Average	523	634	774	672	659	1284	1851	1631	1411	1704

Table A3. continued

	Cassava					Dry Beans				
	2011	2012	2013	2014	2015*	2011	2012	2013	2014	2015*
Dodoma	681	873	1039	785	898	1339	1544	1500	1522	1743
Arusha	576	798	736	798	713	1378	1611	1522	1408	1761
Tanga	433	614	674	538	619	1235	1467	1483	1600	1971
Kilimanjaro	565	802	911	1151	1150	1154	1490	1835	1456	1847
Morogoro	483	623	581	568	588	1226	1466	1644	1753	1814
Pwani	336	647	804	929	972	1308	1522	1517	1675	1761
DSM	414	572	573	655	841	1341	1533	1614	1657	1680
Lindi	382	423	465	495	534	1800	1983	2000	2042	1976
Mtwara	402	449	521	571	637	1375	1511	1500	1927	2000
Ruvuma	394	431	428	735	603	1167	1200	1126	1650	1638
Iringa	575	679	829	778	776	1364	1411	1483	1700	1886
Mbeya	399	455	483	448	442	1370	1521	1615	1964	1642
Singida	538	800	667	732	571	1242	1308	1400	1467	1400
Tabora	491	482	553	677	559	1262	1317	1527	1549	1670
Rukwa	654	963	639	815	631	1417	1248	1806	2252	2202
Kigoma	263	341	365	314	299	1236	1180	1272	1485	1494
Shinyanga	429	478	472	448	441	1167	1464	1517	1603	1743
Kagera	453	485	441	476	389	1119	1133	1217	1250	1299
Mwanza	549	794	725	740	736	1525	1583	1808	1917	1962
Mara	595	715	783	771	679	1500	1667	1517	1917	2000
Manyara	455	494	613	495	505	1316	1500	1467	1500	1615
Average	479	615	633	663	647	1326	1460	1541	1681	1767

Source: SERA based on National Bureau of Statistics data.

*January to July average.

Table A4. Food Basket Cost Shares of Major Food Items (%)

	Arusha	DSM	Dodoma	Iringa	Kagera	Kigoma	Kilimanjaro	Lindi	Manyara	Mara	Mbeya
Maize	16.3	7.7	16.9	18.4	9.8	12.0	11.6	11.6	21.8	7.1	16.2
Rice	6.8	13.9	5.9	7.5	4.4	6.9	6.9	15.9	2.9	3.8	11.3
Beans	4.1	3.6	6.6	7.1	10.1	11.9	4.8	6.5	5.3	1.8	8.2
Bananas	2.8	1.2	0.0	1.9	10.0	3.0	6.6	1.1	0.9	1.2	2.6
Millet/Sorghum	0.8	0.5	16.9	0.3	0.2	0.2	0.5	4.2	0.4	8.1	0.7
Potatoes	0.5	1.2	0.6	3.3	3.0	0.3	0.4	0.3	0.3	0.3	1.4
Sweet Potatoes	0.3	0.4	1.2	1.1	3.0	1.8	0.6	0.7	0.1	0.6	1.1
Wheat/Other Grains	0.0	0.3	0.1	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.1
Cassava	0.4	0.7	0.7	7.3	9.6	17.8	0.6	6.0	0.1	26.2	0.7
Poultry	1.9	2.1	3.5	2.4	3.4	2.2	1.6	4.2	4.7	3.3	3.0
Beef/Goat	16.1	10.0	10.2	9.9	4.5	4.7	17.1	0.9	14.7	7.7	10.3
Fish	7.3	12.6	6.7	12.4	12.9	17.8	13.7	22.9	5.8	18.7	13.8
Cooking Oil	5.6	8.7	3.7	3.9	2.6	4.0	6.1	3.3	4.5	4.2	4.9
Ripe Bananas	1.3	1.0	0.3	1.1	1.9	1.0	1.5	1.0	0.2	0.4	1.5
Mangoes/Other Fruit	1.3	3.3	1.8	3.8	6.9	1.3	2.5	2.3	0.8	4.0	2.1
Sugar	4.4	3.9	3.0	3.9	3.5	2.6	5.0	2.5	5.2	2.5	4.0
Dairy	18.0	3.1	10.5	3.7	3.7	1.1	13.1	0.7	27.8	5.6	5.6
Total Cost Share	88.0	74.2	88.7	88.1	89.4	88.7	92.8	84.2	95.4	95.6	87.2
Three Largest Share	50.5	36.4	44.3	29.8	33.0	47.7	43.9	50.4	64.3	53.1	41.3

Table A4. continued

	Morogoro	Mtwara	Mwanza	Pwani	Rukwa	Ruvuma	Tabora	Tanga	Shinyanga	Singida	Average
Maize	22.0	7.1	10.6	8.6	14.5	13.1	21.3	13.2	21.3	18.8	14.5
Rice	14.0	8.7	7.7	14.3	6.0	9.3	11.3	9.7	8.1	9.1	8.6
Beans	6.2	2.9	2.2	3.8	9.3	6.4	4.6	6.1	3.3	4.1	5.8
Bananas	3.1	1.6	0.7	3.4	2.6	1.2	0.4	2.3	0.3	0.4	2.3
Millet/Sorghum	0.2	1.4	1.3	0.5	1.4	0.4	2.9	0.3	2.2	10.2	2.8
Potatoes	0.9	0.3	0.2	0.8	0.8	0.5	0.3	0.9	0.3	0.5	0.8
Sweet Potatoes	0.9	0.3	4.0	0.9	2.2	1.4	3.2	0.7	3.6	0.8	1.5
Wheat/Other Grains	0.1	0.1	0.0	0.2	0.1	0.0	0.5	0.1	0.3	0.2	0.1
Cassava	3.6	14.6	11.4	5.9	9.2	20.0	2.2	3.5	1.8	1.1	7.5
Poultry	3.6	4.4	3.4	2.2	1.8	1.9	4.7	2.8	6.5	7.1	3.5
Beef/Goat	5.6	3.5	6.9	3.3	5.1	5.4	8.8	9.5	9.3	14.7	8.0
Fish	11.0	26.6	31.6	23.7	23.5	22.3	14.4	16.4	13.9	9.3	16.7
Cooking Oil	4.6	1.9	2.3	2.8	3.4	3.2	3.7	5.5	2.9	4.7	3.8
Ripe Bananas	1.4	0.4	0.6	1.4	1.4	1.1	0.6	0.4	0.4	0.6	0.9
Mangoes/Other Fruit	6.2	3.9	5.1	2.9	1.4	1.0	1.8	1.1	0.8	2.9	2.8
Sugar	2.6	2.2	2.5	3.1	2.5	3.3	2.8	6.1	3.3	2.8	3.3
Dairy	2.0	0.6	3.4	1.3	3.9	0.4	8.0	5.4	13.0	5.1	6.1
Total Cost Share	88.0	80.6	94.0	79.3	89.2	91.0	91.5	83.9	91.2	92.5	89.0
Three Largest Share	47.0	49.9	53.6	46.7	47.4	55.4	47.0	39.3	48.3	43.7	39.8
Source: SERA based on National Bureau of Statistics data.											

Reference:

USDA, Economic Research Service, "Measuring Access to Food in Tanzania: A Food Basket Approach" by Nancy Cochrane and Anna D'Souza, February 2015.

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