PRE-SCHOOL SURVEY 2018

GRENADA FOOD & NUTRITION COUNCIL

February – June 2018

The 2018 Pre-school Survey was conducted to assess the nutritional status of children attending Pre-schools in Grenada, Carriacou and Petite Martinique.

Grenada Food and Nutrition Council

Pre-school Survey Report 2018

GOAL

The goal of the survey was to evaluate trends in growth patterns within the target population,

POPULATION

Children attending Pre-schools in Grenada, Carriacou and Petite Martinique.

POPULATION DESCRIPTION IN TOTAL AND BY GENDER

Two thousand, nine hundred and fifty six (2956) pre-schoolers were assessed of which one thousand, four hundred and eighty seven (1487) were males and one thousand, four hundred and sixty nine (1469) were females.

METHODOLOGY

The assessments were done in eighty two (82) schools during the months of February to June 2018. Anthropometric (weight and height measurement) and personal identifiable data, (child's name, sex, school, date of birth, name of parish,) were collected.
The children were measured without shoes and pockets emptied to reduce inaccuracies in data.

The data was analyzed using, WHO Anthro and Anthroplus software, and the anthropometric indices, BMI-for-age Z score (BAZ) and height-for-age Z score (HAZ) were used to determine the nutritional status of the children.

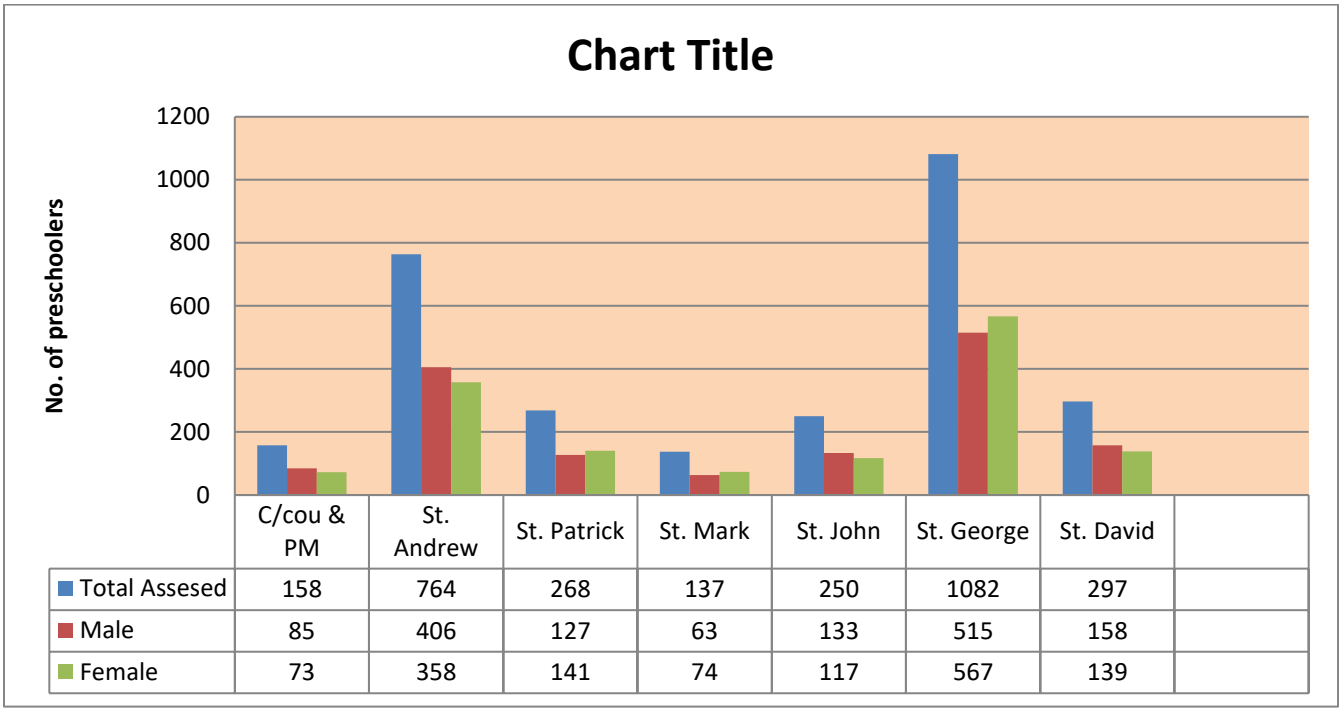
TOOLS USED

A Seca height measure and Seca digital flat scale were used to measure the children's height in centimetres and weight in kilos.

FREQUENCY of SURVEY

Every four years.

The following graph shows the distribution of pre-schoolers by Parish:



	C/cou & PM	St. Andrew	St. Patrick	St. Mark	St. John	St. George	St. David	
Total Assesed	158	764	268	137	250	1082	297	
Male	85	406	127	63	133	515	158	
Female	73	358	141	74	117	567	139	

Graph showing no. of schools assessed by parish:

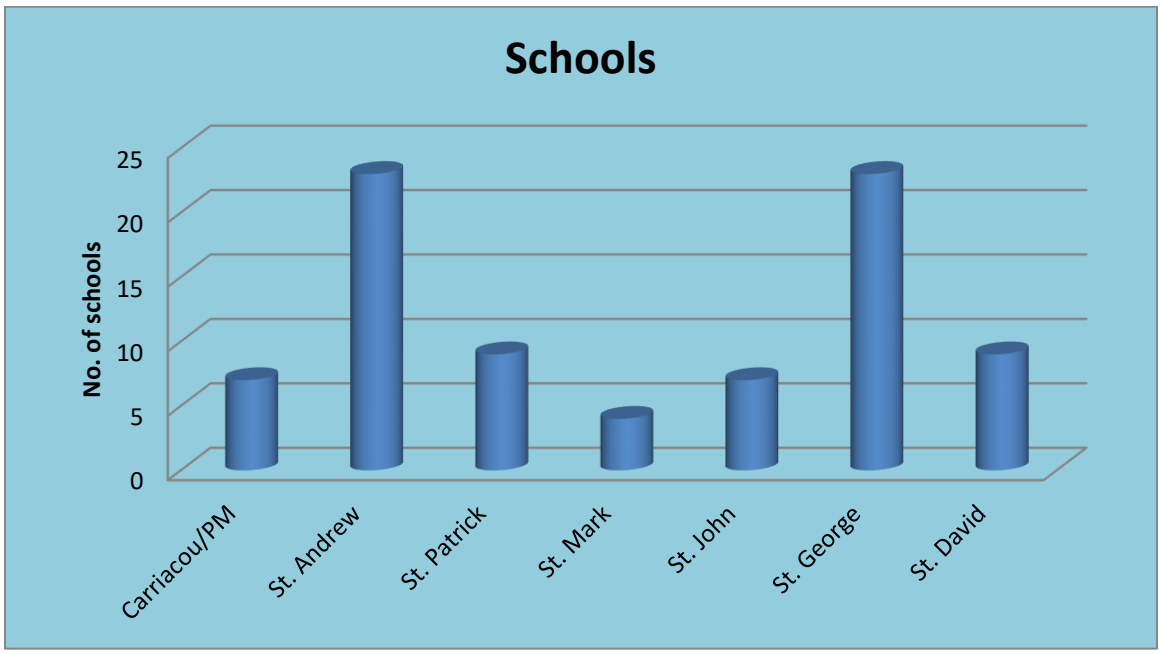


Table showing the distribution of gender by parish:

Parish	No. of schools	Pre-schoolers assessed	Male	Female
ST. ANDREW	23	764	406	358
ST. DAVID	9	297	158	139
ST. GEORGE	23	1082	515	567
ST. JOHN	7	250	133	117
ST. MARK	4	137	63	74
ST. PATRICK	9	268	127	141
CARRIACOU/PM	7	158	85	73
Total	82	2956	1487	1469

Table showing the key used to determine the nutritional status of children

Growth indicators

Z-score	**Height-for-age**	**BMI-for-age**
Above +3		Obese
Above +2		Overweight
Above +1		Possible risk of overweight
At -2 through to +1	Normal	Normal
Below -2	Stunted	Wasted
Below -3	Severely stunted	Severely wasted

Findings:

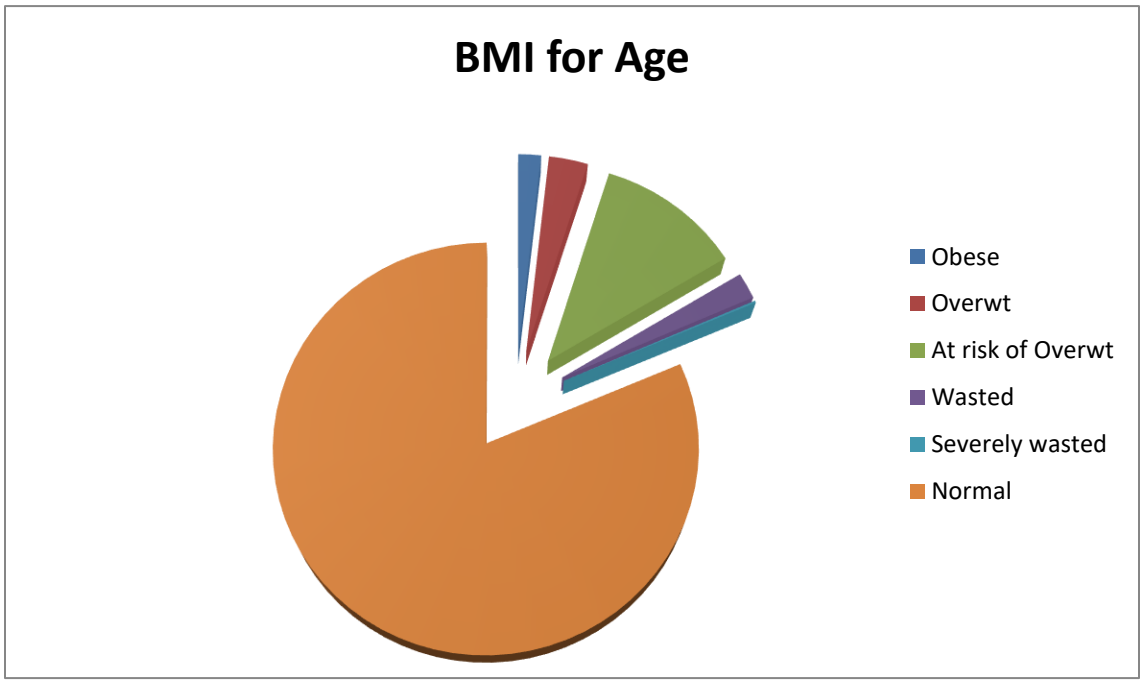
- A total of two thousand nine hundred and fifty six (2956) children were measured; 1487 males and 1469 females.
- Two thousand seven hundred and forty (2740) children or **92.69%** of the children assessed had normal status.
- Three hundred and thirty-nine (339) or **11.47%** with normal BMI-for age Z score are at risk of becoming overweight.
- One hundred and forty-four (144) or **4.87%** had BMI-for-age Z-score more than +2 which indicates overweight/obese; ninety-one (91) or 3.08% were overweight and fifty-three (53) or 1.79% were obese.

- Sixty seven or **2.27%** of the preschoolers had BMI-for-age Z-score (BAZ) less than -2 which indicate wasted or thin, of these five or 0.17% were severely wasted.
- Forty-seven (47) or **1.59%** had Height-for-age less than -2 which indicates stunted/severely stunted; thirty-nine (39) or 1.32% were stunted and eight or 0.27% were severely stunted.

Table showing nutritional status using BMI-for-age and Ht. for age indicators

Z-score	BMI-for-age	No.	%
Above 3	Obese	53	1.79
Above 2 below 3	Overweight	91	3.08
Above 1 below 2	Possible risk of overweight	339	11.47
At -2 through to +1	Normal	2401	81.22
Below -2 above -3	Wasted	62	2.1
Below -3	Severely wasted	5	0.17
Below -2	Stunted	39	1.32
Below -3	Severely stunted	8	0.27

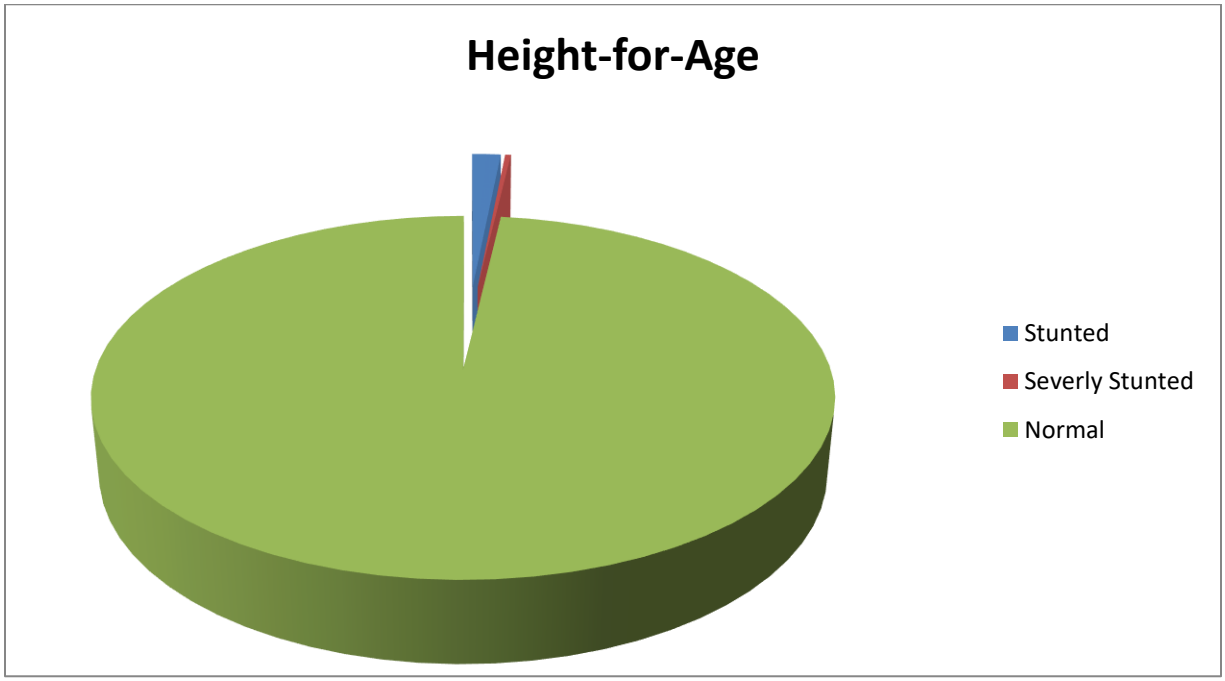
Graph showing distribution of pre-schoolers using growth indicator (BAZ)



Percentage of low Height-for-age

Z-score	Height-for-age	No.	%
Below -2 above -3	Stunted	39	1.32
Below -3	Severely stunted	8	0.27

Chart showing the percentage of low HAZ



Distribution of BAZ and HAZ by sex

		BAZ <-2		BAZ <-3		BAZ >2		BAZ >3		HAZ <-2		HAZ <-3	
Sex		**WASTED**		**SEVERELY WASTED**		**OVER WEIGHT**		**OBESE**		**STUNTED**		**SEVERELY STUNTED**	
	No. assessed	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	1487	25	1.68	5	0.34	41	2.76	28	1.88	21	1.41	6	0.40
Female	1469	37	2.52	0	0	50	3.4	25	1.7	18	1.23	2	0.14
Total	2956	62	2.1	5	0.17	91	3.08	53	1.79	39	1.32	8	0.27

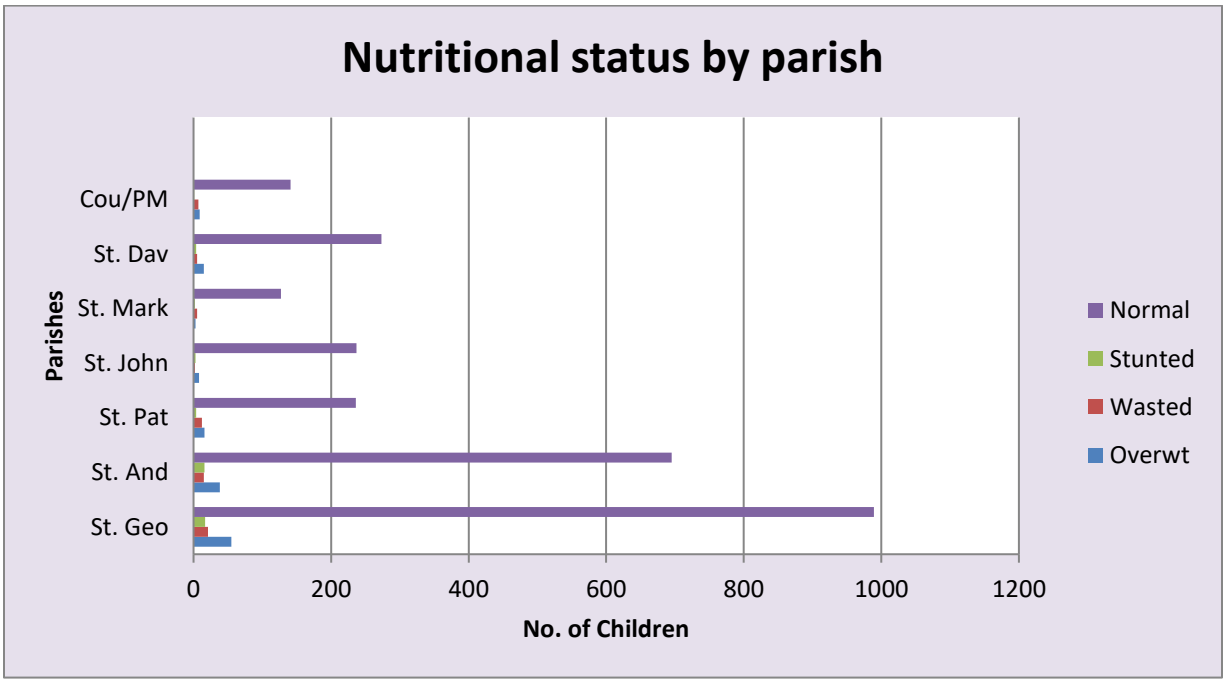
Observation by sex:

- A higher percentage of females were wasted and overweight.
- More males were obese, stunted and severely stunted when compared to females.
- Only boys were severely wasted.

Table showing the frequency BAZ and HAZ by parish

Parish		**BAZ <-2**		**BAZ <-3**		**BAZ >2**		**BAZ >3**		**HAZ <-2**		**HAZ <-3**	
		WASTED		**SEVERELY WASTED**		**OVER WEIGHT**		**OBESE**		**STUNTED**		**SEVERELY STUNTED**	
	No. assessed	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ST. ANDREW	764	15	1.96	0	0	26	3.4	12	1.57	13	1.7	3	0.39
ST. DAVID	297	4	1.35	1	0.34	9	3.03	6	2.02	4	1.35	0	0
ST. GEORGE	1082	19	1.76	2	0.18	34	3.14	21	1.94	15	1.39	2	0.18
ST. JOHN	250	2	0.8	0	0	6	2.4	2	0.80	2	0.80	1	0.4
ST. MARK	137	5	3.65	0	0	1	0.73	2	1.46	2	1.46	0	0
ST. PATRICK	268	11	4.1	1	0.37	9	3.36	7	2.61	2	0.75	2	0.75
CARRIACOU/ PM	158	6	3.8	1	0.63	6	3.8	3	1.9	1	0.63	0	0
Total	**2956**	**62**	**2.1**	**5**	**0.17**	**91**	**3.08**	**53**	**1.79**	**39**	**1.32**	**8**	**0.27**

Graph showing nutritional status by parish:



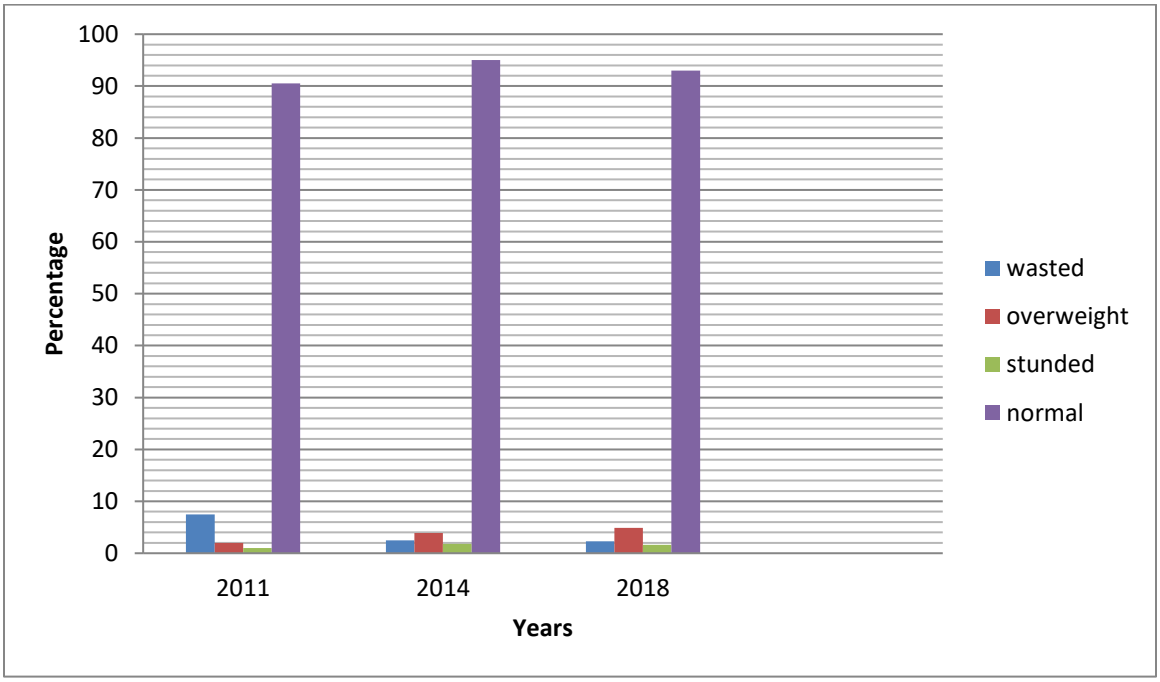
Based on the analysis of the data by parish the following observations were made:

- Less than 1% of the children measured were severely wasted or severely stunted.
- St. Patrick (4.1%) followed by Carriacou (3.8%) and St. Mark (3.65%) recorded the highest percentage of children with BAZ less than -2 Z score which indicates wasted/thin while St. George followed by St. Andrew had the highest numbers; Nineteen (19) and fifteen (15) respectively.
- Carriacou (3.8%) recorded the highest percentage of overweight followed by St. Andrew (3.4%) and St. Patrick (3.36%).
- St. David and St. George also recorded 3% of the children overweight.
- St. Patrick recorded the highest percentage (2.61%) of obese children followed by St. David (2.02%).
- St. Andrew had the highest percentage of stunted children 1.7%.

Percentage of abnormal status by age group (total assessed, 2956)

Age in Months		No.BAZ < -2	% BAZ <-2 (wasted/severely wasted)	No. BAZ > 2	% BAZ >2 (over weight/obese)
< 36	26	0	0	2	7.69
36 < 48	1085	26	2.4	55	5.07
48 - 60	1524	33	2.17	71	4.66
> 60 months	316	8	2.53	16	5.06
Unknown	5	NA	NA	NA	NA

Chart **comparing** the percentage of nutritional status **by years**



Summary

- 93% of the children measured had normal BMI-for-age nutritional status for their age.

- Based on the findings in this survey, there is a relatively low level of children of small status (stunted 1.6%) attending pre-schools in Grenada, Carriacou and Petite Martinique.

- Less than 1% of the children measured were severely wasted or severely stunted.

- Survey findings indicates a steady decline in children with low BAZ <-2 (wasted) among preschoolers; 7.5% in 2011 to 2.5% in 2014 and 2.27% in 2018.

- Based on results, children with BMI-for-age greater than +2 (overweight/obese) among the pre-schoolers are on the increase; 2% in 2011 to 3.9% in 2014 and 4.87% in 2018.

- There were a greater percentage of males obese and a higher percentage of female that were wasted, a new trend compared to previous surveys.

- A higher percentage of males were stunted than females.
- There was a higher percentage of females that were overweight when compared to males.
- The highest percentage of overweight was seen among children less than 36 months (8%)
- Of the forty seven (47) children with stunted status, seventeen (17) came from St. George's and sixteen (16) from St. Andrew, accounting for 70% of the children in that category.
- St. Patrick recorded the highest percentage of children with low BMI-for-age (wasted) [4.1%] and the highest percentage of children [2.61%] that were obese.
- Carriacou recorded the highest percentage of overweight [3.8%].

Recommendations

- Nutrition Officers for their respective parish must recheck all children identified with abnormal status.
- Nutrition Officers to conduct group sessions with all responsible caregivers and children to share nutritional information within the school settings.
- Nutrition Officers schedule one-to-one discussion with parents of children identified with abnormal status.
- Share this information with relative stakeholders and policy makers.
- Collaborate with Ministry of Social Development, Health and Education to plan interventions for children with low BAZ and HAZ that addresses their specific nutritional needs.
- Nutrition Officers to work along with the schools that have children with high percentage of overweight share healthy snacks recipes and tips on food portion/serving through the school feeding program where applicable and with administration and kitchen staff in other cases.
- Formalize a process to ensure that the children who are more than sixty months (5 Years) with identified abnormal status be referred to the school feeding programme for follow through.