

# **Report on the Conduct of the Saint Lucia Survey of Living Conditions and Household Budgets 2016 (SLC/HBS 2016)**

*By Edwin St Catherine, Director of Statistics, July 7, 2016*

## **Status of SLC/HBS 2016 Survey**

The SLC/HBS 2016 commenced on the 2<sup>nd</sup> of November 2015. The survey was preceded by a one-week training period to prepare enumerators for the conduct of the enumeration over the months November – April 2016. The sample for the conduct of the SLC/HBS 2016 was selected from the Census 2010 household frame developed by the Central Statistics Office. The sample was adjusted to ensure that the statistics on monetary and multi-dimensional poverty produced from the survey would be statistically significant at the administrative district level and by extension at the national level.

In order to conduct the survey four supervisors and twenty-five enumerators were hired and assigned to these supervisors. All interviewers, supervisors, editors, coders attended the one-week training seminar which was held at the commencement of the exercise. This training was conducted by the survey coordinator, the Director of Statistics, Mr Edwin St Catherine. The representative at the World Bank, Poverty and Global Practice responsible for the Caribbean region, Yevgeniya Savchenko was present for the four-day training activity.

Based on the budget and the requirement for precision of sample estimates on statistics at the administrative district level 1,500 households were selected for interviewing with the weights skewed towards smaller administrative districts. In the initial planning for the survey it was decided that interviewing would proceed at a rate of roughly 250 households per month ensuring that the survey would be completed by the end of April 2016. This however proved to be too difficult to achieve and this effort had to be adjusted downwards to a rate of 200 per month. The interview with households lasted approximately 2.5 hours and in many cases multiple visits to the household was necessary to complete the total number of interviews allocated to each enumeration district and to each enumerator. At the end of April 1,100 households were completely interviewed with a large number of re-visits required due to incomplete data on consumption being collected on the remaining 150 households.

## **The Subject Matter of the SLC/HBS 2016 Survey**

The SLC/HBS 2016 while it includes a core module to capture labour market conditions it expands on the OECS Labour Force Survey (LFS) questionnaire's core questions which measures multi-dimensional poverty. In addition to core questions on food insecurity contained in the LFS, the SLC/HBS 2016 contains the full food insecurity module recommended by FAO (metrics from an initial assessment of this data follows in the penultimate section of this report), therefore whereas the SLC/HBS 2016 contains 8 questions the LFS only covers one question on food security. The SLC/HBS covers questions of vulnerability to natural disasters, has detailed health questions not covered by the LFS. The LFS has one health question on actions taken by the member of the household after illness, the SLC/HBS contains this question but covers several additional health questions including, extent of chronic illnesses, morbidity type illnesses, effects of morbidity and chronic illness on levels of employment related

productivity, health insurance coverage and claims etc. With respect to education the LFS contains two questions, one on educational attainment and the other on level of education. The SLC/HBS 2016 contains these questions but in addition contains questions on basic literacy, truancy, an assessment of how well targeted the school feeding program is, it also measures the number of years of schooling which is perhaps the most targeted question on education. With respect to housing all of the questions in the LFS are included in the SLC/HBS 2016, in addition, the SLC/HBS covers questions on water scarcity levels, household level subjective poverty indicators, the quality of the dwelling unit (that is, its age, material makeup etc.). The LFS covers approximately nine assets, the SLC/HBS not only covers over 20 assets but the number of each type of assets, its age and market value.

However, there are many areas covered by the SLC/HBS 2016 which are not included in the LFS at all since the LFS is a 30 min duration survey compared to the SLC/HBS 2016 which last on average about 2.5 hours. The following are some of the areas not covered by the LFS but which are covered by the SLC/HBS 2016:

- 1) Detailed data on routine household expenditures (same as 2006 HBS)
- 2) Detailed data on major types of household spending, electricity, water, gas, internet etc (same as 2006 HBS)
- 3) Detailed data of expenditures on purchases of household items and their repair (same as 2006 HBS)
- 4) Detailed data on food items:
  - a. Quantity of food consumed in the last week (new compared to SLC/HBS 2006)
  - b. Quantity of food purchased in the last week (new compared to SLC/HBS 2006)
  - c. Value of food purchased in the last week (new compared to SLC/HBS 2006)
  - d. Quantity of food gifts received in the last week (new compared to SLC/HBS 2006)
- 5) Home grown food eaten or caught in the past month
- 6) Detailed data on Transportation
  - a. New and old vehicles purchased (New – clarification on who purchased from)
  - b. Value of purchases of fuel and other motor vehicle related expenses
- 7) Mortality and Personal Safety (new compared to SLC/HBS 2006)
  - a. Crimes against person or property
- 8) Deviant behavior and exercise (new compared to SLC/HBS 2006)
  - a. Alcoholism, domestic violence, beating of children, smoking
  - b. Regular exercise
- 9) Shocks to the household – Natural Disasters (new compared to SLC/HBS 2006)
- 10) Clothing and footwear expenses
- 11) Education, Health and entertainment expenses
- 12) Detailed income questions by source of income

It is also important to highlight that the SLC/HBS 2016 in the collection of food expenditure contained two questions directed at each individual about food consumed away from home, at restaurants and other food retail outlets. This is a very new development which was not covered by the SLC/HBS 2006. Extensive coverage is also given in the SLC/HBS 2016 of up to 20 types of public assistance programs which were provided by the government. The efficacy of these programs will be assessed using the quantitative information which will be obtained from this survey.

## Measurement of Multi-Dimensional Poverty and its Monetary Compliments

The previous section provided a detailed treatment of the content of the SLC/HBS 2016 when compared with the LFS. Both will allow for the computation of multi-dimensional poverty, however, the SLC/HBS 2016 provides for a far deeper and more extensive treatment of the MPI due to the availability of a more extensive array of variables which addresses poverty related dimensions and indicators. In addition, due to the extensive treatment of data collection on consumption expenditure and income the SLC/HBS 2016 will allow for the production of analyses combining MPI and monetary poverty and their interrelationships.

## Data Validation and Management

The CSO prepared a number of data validation routines in addition to the extensive number included in the tablet computer used for the collection of data. This routine identified a number of deficiencies which arose in some of the data collected particularly on food. Consequently, the supervisors of the survey rejected these questionnaires and they were returned to the enumerators to make a final visit to households to correct the data errors found in the data on the consumption of food. Based on a refusal/no contact rate of about 10%, the CSO selected a further sample of 250 households and extended the survey for an additional two months.

The following table shows a printout of survey solutions data on the conduct of the SLC/HBS 2016.

Teams and Statuses

*(ver. 3) SAINT LUCIA Survey of Living Conditions and Household Budgets 2016*

Supervisors	Supervisor assigned	Interviewer assigned	Completed	Rejected by supervisor	Approved by supervisor	Rejected by HQ	Approved by HQ	Total
<a href="#">olympia</a>	0	<a href="#">73</a>	<a href="#">59</a>	<a href="#">21</a>	0	0	<a href="#">241</a>	<a href="#">394</a>
<a href="#">urmain</a>	0	<a href="#">17</a>	<a href="#">98</a>	<a href="#">20</a>	0	0	<a href="#">413</a>	<a href="#">548</a>
<a href="#">martha</a>	<a href="#">6</a>	<a href="#">105</a>	<a href="#">190</a>	<a href="#">87</a>	<a href="#">255</a>	0	0	<a href="#">643</a>
<a href="#">darius</a>	0	<a href="#">29</a>	<a href="#">171</a>	<a href="#">5</a>	0	0	<a href="#">126</a>	<a href="#">331</a>

## Computations of Consumption Expenditure Aggregates and Food Line

As at the end of June 2016, the total number of interviews completed was 1,400. A number of wrapping up exercises are still being done to bring a conclusion to the survey and the total number of households completed is expected to be close to 1,500 as originally planned. Staff of the CSO have been working with Mr German Jeremias Reyes and Ms Yevgeniya Savchenko to assign Kilocalories and nutrition data to the information on food which has been collected from the survey in order to properly establish the food line from the SLC/HBS 2016. This is a core part of the computation of monetary poverty. Basic data files in STATA format containing the information collected is being reviewed by the World Bank and STATA programs have and are still being written to compute consumption aggregates required for a full analysis of the data to be generated.

Currently, STATA programs are also being written to generate other aggregates of consumption expenditure variables on non-food expenditure items collected during the survey. In addition, the FAO on examination of the food security module included in the questionnaire made the following basic findings based on the data which was submitted to Carlo Cafiero (ESS). These findings are still very preliminary and will need to be run on the data again when the full dataset is completed by the middle of July 2016.

### Food and Agriculture Organization Findings By Carlo Cafiero

“I have estimated the Rasch model on the dataset you shared and have the following results:

	severity	S.E.	Infit	Outfit
WORRIED	-2.21	0.15	1.11	1.85
HEALTHY	-2.12	0.15	1.00	1.15
FEWFOODS	-2.59	0.16	0.99	3.67
SKIPPED	0.95	0.17	0.89	1.19
ATELESS	-0.91	0.14	0.84	0.68
RANOUT	0.10	0.15	0.91	1.14
HUNGRY	2.63	0.21	0.67	0.80
WHLDAY	4.15	0.29	1.12	1.72

Rasch “flat”reliability = 0.8

Residual correlation matrix:

	WORRIED	HEALTHY	FEWFOODS	SKIPPED	ATELESS	RANOUT	HUNGRY	WHLDAY
WORRIED	1.00	0.04	-0.07	-0.11	0.00	0.00	-0.09	-0.13
HEALTHY	0.04	1.00	0.26	-0.03	-0.09	-0.06	-0.08	-0.16
FEWFOODS	-0.07	0.26	1.00	-0.04	0.05	-0.12	-0.11	-0.14
SKIPPED	-0.11	-0.03	-0.04	1.00	0.13	0.08	0.11	-0.05
ATELESS	0.00	-0.09	0.05	0.13	1.00	0.15	0.06	-0.02
RANOUT	0.00	-0.06	-0.12	0.08	0.15	1.00	0.10	-0.04
HUNGRY	-0.09	-0.08	-0.11	0.11	0.06	0.10	1.00	0.26

WHLDAY      -0.13    -0.16    -0.14    -0.05    -0.02    -0.04    0.26    1.00

The only slightly concerning result seems to be the high outfit of the FEWFOODS item.

Upon close inspection of the data, however, record No. 39 seems to be the culprit, as that record shows the following pattern of responses

WORRIED    HEALTHY    FEWFOODS    SKIPPED    ATELESS    RANOUT    HUNGRY    WHLDAY  
                   Y            Y            N            Y            Y            Y            Y            Y

which is very strange. Excluding that single record, the results are as following

	severity	S.E.	Infit	Outfit
WORRIED	-2.23	0.15	1.12	1.90
HEALTHY	-2.14	0.15	1.01	1.17
FEWFOODS	-2.63	0.16	0.97	0.88
SKIPPED	0.95	0.17	0.90	1.22
ATELESS	-0.93	0.15	0.84	0.69
RANOUT	0.09	0.15	0.92	1.18
HUNGRY	2.65	0.21	0.68	0.83
WHLDAY	4.23	0.30	1.13	1.87

Rasch reliability = 0.8

Residual correlation matrix

	WORRIED	HEALTHY	FEWFOODS	SKIPPED	ATELESS	RANOUT	HUNGRY	WHLDAY
WORRIED	1.00	0.03	-0.06	-0.12	0.00	-0.01	-0.09	-0.13
HEALTHY	0.03	1.00	0.27	-0.03	-0.09	-0.06	-0.09	-0.17
FEWFOODS	-0.06	0.27	1.00	-0.03	0.06	-0.11	-0.08	-0.11
SKIPPED	-0.12	-0.03	-0.03	1.00	0.13	0.07	0.10	-0.06
ATELESS	0.00	-0.09	0.06	0.13	1.00	0.14	0.06	-0.03
RANOUT	-0.01	-0.06	-0.11	0.07	0.14	1.00	0.09	-0.05
HUNGRY	-0.09	-0.09	-0.08	0.10	0.06	0.09	1.00	0.24
WHLDAY	-0.13	-0.17	-0.11	-0.06	-0.03	-0.05	0.24	1.00

Which are quite good. All items but one have infits between 0.8 and 1.2, and the only one with low infit is at the margin of the acceptable range.

Based on these results, the raw scores can be considered already an ordinal measure of food insecurity and could be used for classification.

Also, the scale seems to perform very similarly to the application in other countries.

Comparison of the (normalized) item severity parameters with the 2014 FIES global standard reveals the following

Which demonstrates that 7 of the 8 items can be considered “common” to the FIES global reference scale, thus providing an excellent basis for equating the measures.

To complete the analysis we shall need to wait for the full set of results and, to estimate prevalence rates, as you correctly point out, we need sampling weights.

I am attaching the R code I used to generate the results shown above. Let me know if you need clarifications.” - Carlo Cafiero (ESS)

## **Conclusion**

The Saint Lucia SLC/HBS 2016 has benefitted from three pilot tests done in 2014 and 2015 from which it evolved after the review of these exercises. Further refinements and improvements were made based on inputs provided by the UNDP, the WorldBank, UNICEF, the ILO, the CARTAC/IMF office amongst others. The SLC/HBS 2016 also benefited from the inputs of national institutions in Saint Lucia namely the Ministry of Social Transformation, Education and others. Sister Statistical Offices in the Caribbean also played a key role in improving the quality and the focus of the data collected in the SLC/HBS 2016, namely, the work of the Trinidad and Tobago Central Statistics Office on the SLC 2014.

It is clear from this report that dimensions and indicators covered in the SLC/HBS 2016 is not only the same as the core subset contained in the LFS but a much larger set of indicators and missing dimensions on crime, food security, housing quality, health and education, water scarcity amongst others are also covered. Combining the collection of consumption expenditure with the collection of detailed information on multiple dimensions of poverty will make for a richer analysis than heretofore has been done. In addition, the SLC/HBS 2016 extends and improves on SLC/HBS 2006 by including the food component in the main survey and eliminating the food diary used in 2006. It leverages the use of CAPI to ensure that the initial dataset produced is of very high quality avoiding the need for extensive and time consuming data cleaning procedures.

The data from the SLC/HBS 2016 needs a substantial amount of effort still and will need as much as possible to be supplemented by qualitative analysis. This will bring out all its nuances and actionable intelligence to provide the evidence base for intelligent policy actions.