

Glossary

2008 SNA	<i>System of National Accounts 2008</i>
ANA Survey	Annual National Accounts Survey
BOP	Balance of payments
CARTAC	Caribbean Regional Technical Assistance Centre
CIF	Cost, including insurance and freight
CIT	Corporate income tax
COE	Compensation of employees
CSO	Central Statistics Office
ECCB	Eastern Caribbean Central Bank
FCE	Final consumption expenditure
FISIM	Financial intermediation services indirectly measured
GDP-E	Gross domestic product by expenditure
GDP-P	Gross domestic product by economic activity
GFCF	Gross fixed capital formation
GVA	Gross value added
HES	Household Expenditure Survey
HFCE	Household final consumption expenditure
IC	Intermediate consumption
I/O ratios	IC to output ratios
IRD	Inland Revenue Department
ISIC	International Standard Industrial Classification of All Economic Activities
LFS	Labor Force Survey
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOU	Memorandum of understanding
NAS	National Accounts Section
NIC	National Insurance Corporation
NPISHs	Non-profit institutions serving households
PPI	Producer price indices
SDDS	Special Data Dissemination Standard
SUT	Supply and use tables
TA	Technical assistance
TTMs	Trade and transport margins
VAT	Value added tax
XMPIs	Exports and imports price indices
WHD	Western Hemisphere Department of the IMF

SUMMARY OF MISSION OUTCOMES AND PRIORITY RECOMMENDATIONS

1. **A technical assistance (TA) mission was undertaken by the Real Sector Statistics Advisor in the Caribbean Regional Technical Assistance Centre (CARTAC) to St. Lucia during September 17–28, 2018, to provide advice to the Central Statistics Office (CSO) on compiling supply and use tables (SUT) for 2016.** The 2006 base year for the GDP estimates is outdated and does not reflect the current structure of the economy. In addition, there is scope to improve the input data and methodology used in producing the GDP estimates and to implement the relevant *System of National Accounts 2008 (2008 SNA)* recommendations.
2. **There is significant demand from the Ministry of Finance (MOF) and the IMF's Western Hemisphere Department (WHD) for more robust and timely national accounts statistics.** The CSO is now providing quarterly GDP estimates to the MOF and WHD. In addition, it has commenced compiling the SUT to update the base year to 2016, implementing the relevant *2008 SNA* changes, and incorporating improved input data and statistical techniques that will result in more robust and internationally comparable GDP estimates for St. Lucia.
3. **Progress by the CSO in compiling the SUT for the 2016 base year has been slow due to inadequate staffing.** A significant effort was made by CARTAC and the WHD mission chief to successfully lobby the authorities to provide additional funding to increase staffing for the National Accounts Section (NAS). However, the CSO has yet to fill two vacant statistician positions, despite there being interest from suitable staff within the CSO. There is currently only one assistant statistician in the section, who is leaving shortly, and her position will also need to be filled. Two statistical assistants provide support with data collection activities. Greater progress can be made in compiling the SUT and rebasing the GDP constant price estimates if the vacancies are filled.
4. **The collection of input data for the SUT has also been limited due to the staffing situation.** The corporate income tax (CIT) system and financial statement data from the Inland Revenue Department (IRD) have only been collected for 173 businesses out of the proposed sample of 500 businesses. The data need to be classified to industry using the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4; and output, intermediate consumption (IC), and gross value added (GVA) estimates, as well as IC to output (I/O) ratios need to be produced. Data are still being collected for the construction industry and for larger non-profit institutions serving households (NPISHs). Financial data for nonbank financial institutions, the 15 local government councils and approximately 65 public entities are also required.
5. **The input data collected since September 2017 were reviewed, and data classification and quality adjustments were made.** The administrative and survey data collected by the CSO since the previous mission were reviewed in terms of classification,

coverage, time of recording and valuation. The value-added tax (VAT) system data for 2016 were extracted and sorted for 1,096 tax-payer units by industry. While the ISIC Revision 4 industry classification of the units needs to be rechecked, it was possible to use the data to produce preliminary output and gross trade margin estimates for the nonfinancial corporate sector.

6. Additional input data need to be collected for the agricultural, financial, households and public sectors. Current national accounts data were used for the financial sector. Additional data for nonbank financial intermediaries, offshore units and financial auxiliaries are still being collected. A breakdown of central government output and IC by industry was not available for 2016 and had to be estimated. While there were no data collected to update the IC for agriculture, fishing and the informal sector, gross income data from the Labor Force Survey (LFS) were used to produce the output estimates. Further classification and coverage adjustments were made to the household final consumption expenditure (HFCE) and trade in goods and services data.

7. Preliminary SUT product and industry balances have been compiled using various input data and the I/O ratios for 2016 from the national accounts database. The preliminary estimates are around 15.7 percent higher than the current GDP estimates for 2016 due mainly to the improved coverage of formal sector economic activity using the VAT system data; the informal sector based on the labor force data; and the updated household consumption expenditure estimates from the 2015/16 Household Expenditure Survey (HES) data. However, further revisions to the estimates are expected once all the data quality issues are resolved and the additional input data are incorporated. The CSO staff was trained on industry coding and quality assurance of the input data and compiling the SUT industry and product balances.

8. Subject to additional staff being recruited and the additional input data being collected, a follow-up TA mission is planned for February 25–March 1, 2019 to assist with finalizing the SUT. The CSO staff need to complete data collection by the revised milestone of December 2018. The I/O ratios and SUT industry and product balances will need to be recompiled in January 2019. Finally, the input-output industry table estimates will be compiled during February 2019, once the additional CIT data are available.

9. To support progress in the above work areas, the mission assisted in updating the project action plan and identified the following priority recommendations:

Table 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
November 2018	<i>Fill the vacant statistician positions in the NAS.</i>	CSO
December 2018	<i>Complete the collection of the input data needed to compile the SUT.</i>	CSO
January 2019	<i>Revise the SUT industry and product balance estimates.</i>	CSO

PREREQUISITES, DATA SOURCES, AND COMPILATION

A. Strengthening Prerequisites, Staff Capacity and Other Resources

10. The statistics capacity and infrastructure of the CSO was reviewed during the CARTAC mission in September 2015 and several recommendations for improvements were made. The detailed findings are provided in the *St. Lucia—Technical Report on the National Accounts Statistics Mission (September 7–18, 2015)*. The structure of the CSO needs to be improved to prioritize and facilitate timely data collection for national accounts purposes, as well as providing for effective succession planning. In addition to the proposed reorganization, there is a need to develop more detailed annual work programs; with clearer allocation of responsibilities and tasks for the Assistant Director, section heads and other staff.

11. Three statisticians are required for the NAS to be able to produce timely national accounts statistics and to rebase the constant price GDP to 2016 by September 2019. The NAS has an establishment of three statisticians and two statistical assistants. There is currently only one assistant statistician (who is leaving for further studies), and two statistical assistants in the section. The Director of the CSO will need to fill all three NAS statistician positions as soon as possible. The current staff spend most of their time on data collection and quality assurance; with compilation work being delayed. There is a need to ensure that the survey areas provide data to the NAS in a timely manner, quality assured, and in the format required; and the NAS staff is responsible for ensuring that data requirements are clearly specified.

12. Improving and expanding the national accounts and prices statistics, as part of the longer-term goal of subscribing to the IMF's Special Data Dissemination Standard (SDDS), will require more staff. An additional statistician is required to compile the producer (PPI) and exports and imports (XMPIs) price indices; and two statisticians to improve the quality of the quarterly GDP by economic activity (GDP-P); and develop quarterly GDP by expenditure (GDP-E) estimates, annual GDP-E estimates at constant prices, and the institutional sector accounts up to net lending/borrowing. Without the additional staff, the scope to expand and improve real sector statistics to meet the SDDS requirements is limited.

13. Access to CSO vehicles for economic data collection purposes needs to be improved. Office space appears to be adequate; although a commensurate increase in computers, office equipment and other resources for the new staff will be needed.

14. The CSO staff have benefited from CARTAC training on national accounts and price statistics during missions and at workshops over several years. It is intended that this training will continue to be provided in the future.

15. Expanding the range of real sector statistics will require additional TA and funding for data collection activities. Previous CARTAC missions have recommended expanding and improving the data collection, including expanding the Annual National Accounts (ANA) Survey and prices collection to compile the PPI and XMPIs. In addition, formal memoranda of understanding (MOU) need to be established with the main data providing agencies and departments to improve and expand the range of administrative data being provided to the CSO. These institutions include the Customs Department, Eastern Caribbean Central Bank (ECCB), IRD, Ministry of Agriculture (MOA), MOF and National Insurance Corporation (NIC). These data collection and coordination activities require additional financing; with the TA being provided by Statistics Canada. TA is being provided by Statistics Canada on redeveloping the CSO website, which is expected to be launched in December 2018. The CSO will then be able to publicly release the quarterly GDP-P estimates that it has been disseminating to key data users via email.

Recommended Actions:

- Restructure the CSO, clarify roles and responsibilities, increase delegation, and develop detailed annual work programs.
- Fill the three vacant positions in the NAS and increase CSO staffing by a further three statisticians to improve the quality and expand the range of national accounts and prices statistics.
- Increase access to official vehicles for economic survey staff; and computers, office equipment, and other resources commensurate with the increase in staffing.
- Increase the CSO budget financing to conduct benchmark surveys, as well as to expand and improve ongoing economic surveys and administrative data collections.
- Establish effective MOUs with the key data providers to improve access to data reporting, its quality and timeliness.
- Complete development of the CSO website so that the quarterly GDP-P estimates can be publicly disseminated by December 2018.

B. Compilation of the SUT Industry Estimates and the Additional Data Required

16. The revised SUT now includes 82 industries, mostly at the 2-digit ISIC Revision 4 industry level, as production data and I/O ratios are available. The industries were selected based on their contribution to GDP, the level of policy interest (e.g., growing of bananas), and the ability to compile reliable and updated I/O ratios for 2016.

17. The preliminary output and IC estimates for agriculture, fishing and quarrying are based on partial data and additional data are required. The administrative data on the output of bananas, other crops, and livestock have been used to compile the preliminary SUT balances. Where relevant, the output estimates have been cross-checked with exports data and supplemented using the VAT data for corporations and the gross income data from the LFS reported by workers in these industries that are household businesses. However, the NAS needs to collect the 2014 Fisheries Census IC and output data from the MOA; and any other data that may be available to update agriculture and fishing I/O ratios. Conservative estimates have been developed for trapping of land crabs but estimates for forestry products, such as firewood and charcoal produced onsite need to be made. For quarrying, the output estimates are based on applying a ratio of cement import volumes to sand and gravel portions needed to produce concrete; with the LFS mixed income used as a proxy of GVA to calculate the GVA to output ratios to derive the IC estimates.

18. The output, IC, and trade and transport margins (TTMs) for the non-financial corporate sector have been compiled using VAT revenue and I/O ratios from the national accounts database. The VAT system data for 2016 were extracted and sorted for 1,096 tax-payer units by ISIC Revision 4. The sales were adjusted to remove the VAT payable to derive the proxy output estimates. There were no data available to adjust for inventory changes. The domestic purchases and imports data reported were adjusted to add excise and import duties to derive the TTMs for wholesalers and retailers, as well as proxy I/O ratios that have only been used where the ratio is higher than the current I/O ratios that were felt to be underestimated. The TTMs calculated are around double the current estimates. While it was anticipated that the TTMs would be higher given the limitations of the previous estimates, the new estimates are much higher than expected and need to be reviewed. In addition, there are production estimates for industries that were not previously captured. Therefore, it is very important that the ISIC Revision 4 classification of both the ANA Survey and the VAT units be checked to ensure correct industry coding (e.g., bakeries not being classified as retailers). The estimates for the non-financial corporate sector need to be adjusted using matched NIC employment to VAT turnover data to gross up the output of the 1,096 VAT paying units to the approximately 1,800 active CIT units.

19. The CIT financial data needed to update the I/O ratios have only been collected for 173 businesses out of the proposed sample of 500 businesses. The CIT data are supposed to be used to supplement the ANA Survey data, given the low response rates. Therefore, the CSO

needs to significantly increase staff resources to complete collection and processing of around 330 financial statements from the CIT database. The CIT data need to be classified to ISIC Revision 4; and output, IC, I/O ratios, GVA, compensation of employees (COE), gross fixed capital formation (GFCF) and changes in inventories estimates need to be produced. As a last resort, it may be necessary to supplement the 2016 CIT data with 2015 data collected for 232 businesses.

20. The government accounts, ANA Survey, and financial data for banks from the ECCB have been used to compile estimates for the government sector and financial intermediaries but there are data gaps that need to be addressed. While the financial data for the banks regulated by the ECCB and the insurance companies are available; data for credit unions, cooperatives and other financial sector activities need to be collected as the VAT data are incomplete. The ANA Survey data have been used for insurance companies but there is scope to improve the estimates for insurance agents and brokers—where LFS data are used. Additional data are required to correctly calculate central government output and IC by industry (including financial intermediation services indirectly measured (FISIM)), and to compile estimates for the NIC, 15 local government councils and approximately 65 public bodies. In addition to the recurrent expenses, some of the capital projects budget was used for government employees who are employed on short term programs, and their COE needs to be incorporated.

21. The gross income data from the LFS and HFCE estimates have been used to compile the industry production estimates for household businesses. Gross income data by 1-digit industry for self-employed persons that do not keep a full set of accounts was extracted from the LFS database and prorated across 2 to 3-digit industry using the output splits and I/O ratios from the current national accounts estimates. It would be better to use the I/O ratios from the 2009 Informal Sector Survey for household businesses. The assumption made was that full accounts are kept by businesses for tax purposes, so the LFS dataset excluded CIT registered businesses. For actual and imputed rentals of dwellings, education, health, social work, household, personal and other services, the HFCE estimates have been used instead of or to supplement the LFS data. For the informal wholesalers and retailers, the TTM ratios developed for the corporate sector have been used. The estimates can be improved using NIC employment and contributions/earnings data once the coding of the approximately 5,000 employing units and self-employed to ISIC Revision 4 is completed.

22. Data are still being collected for the construction and NPISHs. The data will be incorporated into the SUT industry balances once available.

Recommended Actions:

- Collect the 2014 Fisheries Census IC and output data; and any other data that may be available to update the agriculture and fishing I/O ratios.

- Collect information to develop production estimates for forestry products, such as firewood and charcoal produced onsite.
- Confirm with the IRD that the domestic and imported inputs reported on the VAT form exclude excise and duties; and include zero-rated and exempt inputs.
- Review and improve the ISIC Revision 4 industry classification of the VAT paying units as a high priority.
- Complete collection and processing of the 500 financial statements from the CIT database, and classify the data by industry to produce the production and gross capital formation estimates.
- Extract the output and IC data by SUT industry from the 2009 Informal Sector Survey to calculate I/O ratios for household businesses.
- Complete ISIC Revision 4 coding of the NIC units and produce estimates of COE and workers by SUT industry.
- Match the NIC employment to VAT turnover data to rate up the output of the VAT paying units to the active CIT units.
- Collect data for credit unions, cooperatives and other financial sector activities.
- Collect data for central government output and IC by industry, the NIC, 15 local government councils and the 65 public entities.
- Complete collection of production data and ratios for the construction industry and NPISHs.

C. Compilation of the SUT Product Balances and the Additional Data Required

23. The revised SUT now includes 98 product groups classified to align with the relevant producing industries. The number of product groups has been reduced by 3 products from the previous 101 product groups as there is no domestic production and it is difficult to split out the data for HFCE and merchandise imports.

24. The product groups were selected based on the need to be as detailed as the available source data can support; and to ensure outputs from one industry used as inputs to other industries are clearly identified. For example, being able to identify the main types of building materials used as IC for construction and the main products used as IC by restaurants. The intention being that the resulting SUT estimates can be used to derive weights to develop composite IC price indices so that the double deflation methodology can be more fully implemented.

25. The supply-side estimates for the SUT product balances have been compiled using output estimates from the industry balances, and adding imports of goods and services, taxes less subsidies on products, and TTMs. As the imports data valued on a cost including insurance and freight (CIF) are of good quality, the data were not changed. Adjustments were made to the balance of payments (BOP) imports of services. The travel debits were distributed across product groups for food, beverages, other goods, accommodation, food and beverage services, transport, tours, entertainment, health and other services. However, the medical expenses estimate needs to be improved and education expenses added for residents studying abroad (e.g., University of West Indies in Barbados and Jamaica) using government accounts and the HFCE data. The HFCE tertiary expenditure is all currently allocated to output as the proportion of overseas expenditure was not known at the time of the mission. The BOP services imports also do not include an estimate for imports of FISIM that will need to be estimated.

26. Product taxes and subsidies have been allocated across the product groups and reconciled with the government accounts data. Domestic taxes, excise and subsidies were allocated to the specific product groups using Customs and government accounts data. The government accounts data for excise on petroleum and transport equipment imports was used rather than the higher Customs numbers. The distribution of import duties across product groups was used to allocate the other Customs levies and then prorated again to align with the government account control totals. For the non-refundable VAT, the VAT system data were used to estimate the percentage of goods and services that are subject to VAT, compared to zero-rated and exempt goods for each product group. These product group ratios were then applied along with the VAT rate of 10 percent for hotel and restaurant sales, and 15 percent for other sales to the estimates of HFCE purchases, tourist expenditure, and IC and GFCF of non-VAT paying businesses. The resulting estimates were then readjusted so that the sum equaled the government accounts control total of net VAT receivable. However, these estimates need to be checked by the NAS staff to ensure that VAT has not been inadvertently applied to any VAT exempt product groups. The breakdown of product subsidies is based on 2015 data that need to be replaced by 2016 data.

27. While the HFCE and final consumption expenditure (FCE) for government have been allocated across product groups, the government data are incomplete and FCE data for NPISHs are not yet available. Further adjustments were made to the HFCE estimates to incorporate overseas travel expenditure and for underreporting of household pets, land crabs, animal feed, alcohol, tobacco, information and telecommunication equipment, other durables, postal and courier services, FISIM and explicit financial service fees, actual and imputed rentals of dwellings, real estate agents, rental and leasing of vehicles and equipment, other professional services, and health and social services. The output data for NPISHs need to be added and adjusted to deduct any sales of goods and services to derive the total FCE of NPISHs. The government output data need to be adjusted for the NIC and local government councils, with any sales of goods and services by government deducted and any goods and services purchased by government provided to households added to derive the total FCE of the government sector.

28. Preliminary gross capital formation estimates have been incorporated and the IC estimates for each product group have been derived as residuals. The GFCF estimates for construction have been derived by adding the industry output less IC use for repairs and maintenance plus cost of ownership transfer. Any expenditure on scientific research and development, development of intellectual property, databases and software identified from the ANA Survey, financial statements and government accounts will need to be added. For GFCF of machinery and equipment, the preliminary estimates have been compiled at the SUT product level. The estimates need to be compiled at a more detailed level using the relevant imports CIF, excise and import duties, and TTMs. The coverage of GFCF also needs to include estimates of biological assets (e.g., breeding livestock, dairy cows, and fruit trees), if these can be estimated. The SUT estimate for the acquisition less disposal of valuables has been compiled for the household sector. To this household estimate, expenditure by businesses and government need to be added. Relevant data from the ANA Survey data and financial statements should be used to compile these estimates, as no estimates have been made at this stage.

29. Several adjustments were made to the Customs goods exports and BOP exports of services data due to data gaps and quality issues. The Customs exports data had to be regenerated as there were significant differences between the BOP merchandise exports and the data provided to the mission. The revised estimate of ECD 275 million is much lower than the BOP merchandise exports of ECD 336 million, which includes around ECD 20 million adjustments for aviation fuel exports and exports of construction materials to non-resident construction companies operating in St. Lucia for less than a year. The travel credits were distributed across product groups for food, beverages, other goods, accommodation, food and beverage services, transport, tours, entertainment, health and other services using more detailed information from the Tourist Board. The mission added air crew accommodation and catering services provided to non-resident carriers to exports. As a result, the BOP estimates of exports will need to be revised.

Recommended Actions:

- Reallocate HFCE for tertiary education between domestic output and education travel debits.
- Review the allocation of taxes less subsidies on products, especially for the non-refundable VAT and subsidies, and revise as necessary.
- Review the adjustments made to HFCE for under coverage and misclassification; and readjust where necessary.
- Incorporate the additional data required for FCE for government and NPISHs.
- Incorporate estimates of expenditure on scientific research and development, development of intellectual property, databases and software to GFCF.
- Compile estimates of GFCF of machinery and equipment at a more detailed level using the relevant imports CIF, excise and import duties, and TTMs.

- Improve coverage of GFCF to include estimates of biological assets, if possible.
- Use data from the ANA Survey data and financial statements should be used to compile the SUT estimates for changes in inventories.
- Recheck the SUT exports of goods and services estimates; and revise the BOP exports of goods and services estimates in consultation with the ECCB.

DETAILED TECHNICAL ASSESSMENT AND RECOMMENDATIONS

Priority	Action/Milestone	Target Completion Date
Outcome: Staff capacity increased through training, especially on developing source data, compilation methods and dissemination		
H	Increase staffing of the NAS by three statisticians.	11/30/2018
H	Restructure the CSO to improve organizational effectiveness, including integration of work plans.	12/31/2019
H	Train the NAS staff on the use of improved source data, statistical techniques and dissemination practices.	12/31/2020
Outcome: Data are compiled using the framework, concepts and definitions of the 2008 SNA		
H	Prerequisites: Implement formal data coordination through MOUs with key data providers (e.g., Customs, ECCB, IRD, NIC).	6/30/2019
H	Improve data reporting enforcement procedures for the monthly and annual business surveys.	12/31/2019
H	Increased budget funding to improve regular data collections and to conduct benchmark surveys.	1/31/2020
H	Secure additional TA from PRASC and other development partners to implement this project.	6/30/2019
H	Data Sources: Work with the IRD and the NIC to develop an integrated business register.	12/31/2019
H	Complete the collection of the input data needed to compile the SUT.	12/31/2018
H	Improve data sources and indicators used to compile improved annual current and constant price GDP-E estimates.	6/30/2019
H	Improve data sources and indicators used to compile the quarterly GDP-E in current and constant prices; and other quarterly national accounts aggregates.	12/31/2019
M	Improvement of data sources and indicators used to compile annual institutional sector accounts.	6/30/2020
M	Collect data to produce updated I/O ratios for agriculture.	12/31/2018
H	Collect the output and IC data from the 2014 Fisheries Census.	12/31/2018
H	Conduct of the ANA Survey, including the largest NPISHs for reference year 2016, and produce the survey results.	11/30/2018
H	Improve classification (including ISIC Revision 4) and quality of the VAT and CIT systems data.	10/31/2018