TECHNICAL ASSISTANCE REPORT

DOMINICA
Improving Estimates of Gross Domestic Product (August 29–September 8, 2023)

SEPTEMBER 2023

Prepared By
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CARTAC

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Acronyms and Abbreviations

CARTAC	IMF's Caribbean Regional Technical Assistance Centre
CIT	Corporate Income Tax
COE	Compensation of Employees
CP	Current Price
CPI	Consumer Prices Index
CSO	Central Statistics Office
DEXIA	Dominica Export Import Agency
DSS	Department of Social Security
ECCB	Eastern Caribbean Central Bank
ECCU	Eastern Caribbean Currency Union
EC$	Eastern Caribbean Dollars
FISIM	Financial Service Indirectly Measured
GDP	Gross Domestic Product
GDP-P	GDP by Economic Activity
GVA	Gross Value Added
IC	Intermediate Consumption
IPD	Implicit Price Deflator
IRD	Inland Revenue Department
ISIC	*International Standard Industrial Classification*
KP	Constant Price
NAS	National Accounts Statistics
PIT	Personal Income Tax
SNA	System of National Accounts
SUT	Supply and Use Tables
TA	Technical Assistance

Summary of Mission Outcomes and Priority Recommendations

1.   **In response to a request from the Central Statistics Office (CSO) in the Ministry of Finance in Dominica, a technical assistance (TA) mission took place between August 29 and September 8, 2023, to support the office improve estimates of Gross Domestic Product (GDP).** The mission followed a previous mission undertaken by IMF Statistics Department in October 2022 which assessed the institution and other factors impacting the compilation of Dominica's GDP and price statistics and identified broader issues that impair the quality of the national accounts compilation program, including the timeliness and reliability of its outputs. In addition, a CARTAC mission in April 2023 initiated work to develop referenced estimates of GDP.

2.   **The mission therefore focused on three main aspects: supporting improvements of the GDP series in line with the *2008 SNA* standards,** including re-referencing the volume estimates of GDP to 2018 prices (updated from the existing 2006 base year); identifying data holdings which can be used to improve the quality of the estimates of GDP; and developing of a work program for improving economic statistics.

3.   **Historically, a key data source used in the compilation of GDP is the annual National Accounts Survey (NAS).** This is a sample survey of around 500 businesses. In recent years the response rates to the survey have been less than 10 percent. The previous CARTAC mission in April 2023 concluded that, in its current form, the survey results do not provide a robust basis for estimating either the level or the changes in GDP. Alternative sources of information were therefore developed, including data from the Inland Revenue Department (IRD) on the turnover and cost of business and data from the Department of Social Security (DSS) on the compensation of employees and employee numbers.

4.   **The methodology and data sources for the 46 main economic activities used in the GDP compilation were reviewed.** Improvements were identified and potential additional data sources discussed with the team. Improvements to the methods used to estimate output for agriculture, manufacturing, financial services, and real estate were introduced.

5.   **Series for GDP in current and constant 2018, prices were developed based on the International Standard Industrial Classification (ISIC) revision 4 from the current ISIC revision 3.1.** Analysis of revisions was undertaken, and a time series from 2000–2019 were produced.

6.   **To reduce considerable redundancy in the existing GDP compilation system, a new compilation procedure was completed comprising a single 'master' workbook and twenty-one supporting workbooks.** This replaces the numerous workbooks in the existing system, which include significant duplication of the data needed for compilation. The simplification of the process should enable the GDP team to compile the estimates more quickly based on consistent data for the key sources.

7.   **In terms of identification of potential other data sources which can be used to improve the quality of the estimates of GDP,** meetings took place with key government departments including the IRD, Discover Dominica Authority, Dominica Social Security, Customs and Excise, the Ministry of Agriculture, and the Dominica Export and Import agency. Access to key data holdings was discussed, and agreements reached in principle. Essential data needed to improve the estimation of GDP will be made available to the CSO.

8.   The mission was undertaken in 'workshop' mode with the national accounts team involved directly in all discussions and developments.

9.   The CSO has around 12 professional staff including three dedicated to the National Accounts (includes one new starter in November 2022). While some training was provided during the mission on the methods and concepts used to compile the GDP estimates, more is needed to realize the full potential of the team.

10.   To support progress in the above work areas, the mission proposed the following priority recommendations needed to improve estimates of GDP.

TABLE 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
October 2023	Update the data in the GDP system to produce estimates for all years from 2010 to 2021, and publish the referenced series together with a note describing the revisions resulting from the rebasing.	CSO
September 2023	Acquire unit level annual data, including company names, from the Inland Revenue Department's Corporate Income Tax, Personal Income Tax (for self-employed persons), and Value Added Tax.	CSO
October 2023	Code the IRD dataset to ISIC Revision 4 and link the records to the equivalent businesses in the DSS dataset to establish a business register.	CSO

11.   Further details on the priority recommendations and the related actions/milestones can be found in the action plan under Detailed Technical Assessment and Recommendations.

Section I. Introduction

12.   With support for the Eastern Caribbean Central bank (ECCB) the CSO compiles and releases current and constant 2006 price annual estimates of GDP by economic activities based on the International Standard Industrial Classification (ISIC) Revision 3.1. The estimates are broadly consistent with the standards set out in the *1993 System of National Accounts* (*1993 SNA*).

13.   The objectives of the mission were to (i) supporting improvements of the GDP series in line with the *2008 SNA* standards, including re-referencing the volume estimates of GDP to 2018 prices (updated from the existing 2006 base year); ii) identifying data holdings which can be used to improve the quality of the estimates of GDP; and iii) developing of a work program for improving economic statistics. These developments are considered in the following sections of this report.

# Section II. Improving the Estimates of GDP

14.   The sources used to compile the estimates of GDP include data from the Ministry of Agriculture, Ministry of Finance, financial statements of major companies, data from government agencies and regulatory authorities, data on insurance and finance from the ECCB, and an annual sample survey of companies, the National Accounts Survey (NAS). As noted in the report for the precious CARATC mission in April 2023, because of response rate of around 10 percent, estimates of value added derived from the NAS survey have required significant imputation, based largely on carrying forward the previously reported values.

15.   Therefore, consistent with the recommendation of the previous mission, the current mission replaced the NAS by incorporating alternative sources into the estimation of GDP. In particular, data from the Inland Revenue Department (IRD) on the turnover reported to the value Added Tax (VAT) system and data from the Department of Social Security (DSS) on the contributions to the social security funds and numbers of employees were introduced. The mission finalized the development of systematic bases for processing and updating these datasets and for producing time series by economic activity. Appendix I provides details.

16.   A number of improvements were introduced into the estimation methodology during the mission, including:

- The development of a simple work in progress model for the livestock production activity, covering cattle, sheep, goats, and pigs. This replaces the current estimates which are based on total stock of each animal type each year, multiplied by the price of the animals. This will have tended to misrepresent the total value of production, since it assumed that all animals are slaughtered each year.

- More detailed data for the quantities of fish caught was introduced to replace the current method which simply aggregated the tonnage of fish of various types.

- Estimates of output of manufacturing, renting of machinery and equipment, and a number of business and personal services were updated using data for the VAT system on the total sales of manufacturers.

- The estimates of Financial Services Indirectly Measured (FISIM) were brought in line with the *2008 SNA* methodology, including a simple allocation of FISIM consumed as intermediate consumption of the business sector.

- The estimates of the volume of output of Private Households with Employed Persons were updated to use the data on the number of employees for the social security dataset.

- The method used to estimate taxes on products and subsidies on products in constant prices was updated to use the volume of total gross value added (GVA) for all economic activities as an indicator of the change. The previous method had deflated the current price values based on an aggregate deflator for GVA.

17. **The mission finalized the basis for producing volume estimates of GDP referenced to 2018 prices.** The compilation process was integrated into a single 'master' workbook, linked to a small number of 'data' workbooks. The procedure was considerably streamlined compared with the existing system, with significant simplification of the procedures used, and greater consistency in the naming conventions and codes used introduced. The revised estimates use the International Standard Industrial Classification (ISIC) revision 4, updated from revision 3.1. The estimates were updated for all years from 2010–2019. Detailed business process documentation was developed for the GDP system (see Appendix II).

18. **A basis for quality assuring the estimates in both current and constant prices was introduced, based on the contributions to the annual percentage change in the total GDP from each economic activity.** This should be used in future as part of the standard checks undertaken by the national accounts team.

19. **Analysis of revisions compared with the previously published series was undertake for the years 2010–2019.** Of note:

In current prices:

- The level of GDP in current prices was estimated as 18 percent higher than the previously published level. This revision was largely the result of the use of data for the turnover of business based on the VAT system, replacing the estimates based on the NAS.

- Chart 1 compares the previously published growth rates of total GDP in current prices with updated estimates.

CHART 1. Previously Published & Updated Annual Percentage Changes in Total GDP in Current Prices
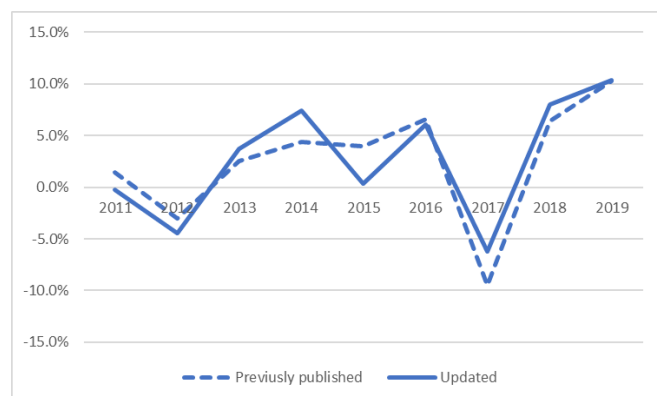
In constant prices:

- The weights used to aggregate the volume series for GDP were updated from those based on the published current price 2006 levels of value added to those based on the updated estimates for 2018. Chart 2 shows the changes in these shares.

CHART 2. Comparison of Weights Used to Aggregate the Volume Estimates of Value Added: Previously Published Current Price Shares of Total GDP for 2006 and Updated Shares for 2018
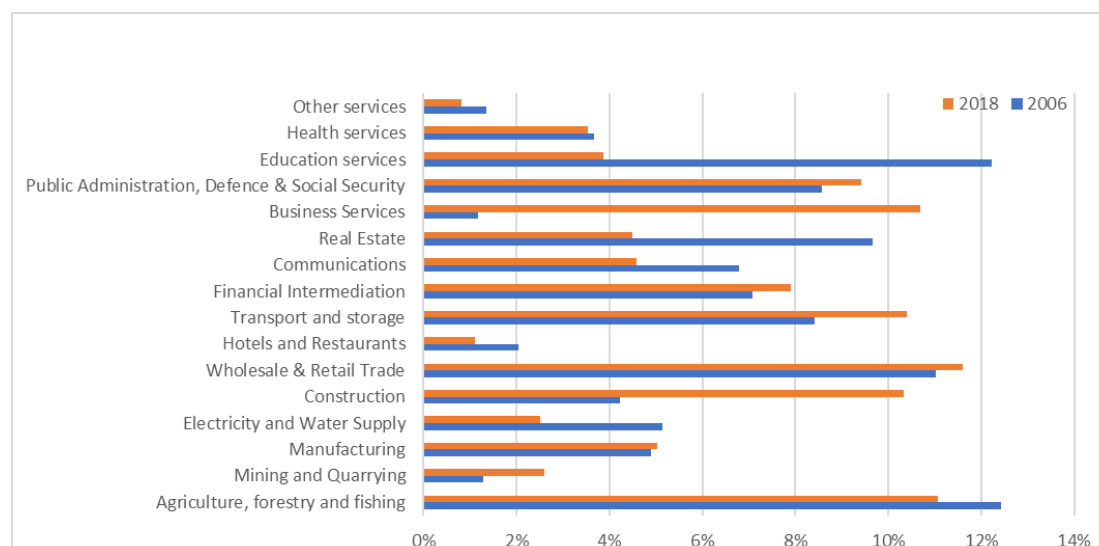
Of note, the chart shows,

- The share of education services declined from 12 percent in 2006 to just 4 percent 2018 mainly because of the closure of a major university at the end of 2017.

- Business services increased from a 1 percent share in 2006 to 11 percent in 2018, in part because of the of the introduction into the estimation of the data for business turnover from the VAT system (replacing the estimates based on the NAS survey).

- The share of Construction services increased from 4 percent in 2006 to 11 percent in 2018, largely because of the repair and construction work needed in the aftermath of hurricane Maria in September 2017.

- An increase of the share of manufacturing activity in total GDP as the result of improved data sources now being used (based on data form the VAT system)

- Chart 3 compares the previously published growth rates of total GDP in constant 2006 prices with updated estimates based on 2018 prices.

CHART 3. Previously Published & Updated Annual Percentage Changes in Total GDP in Constant Prices
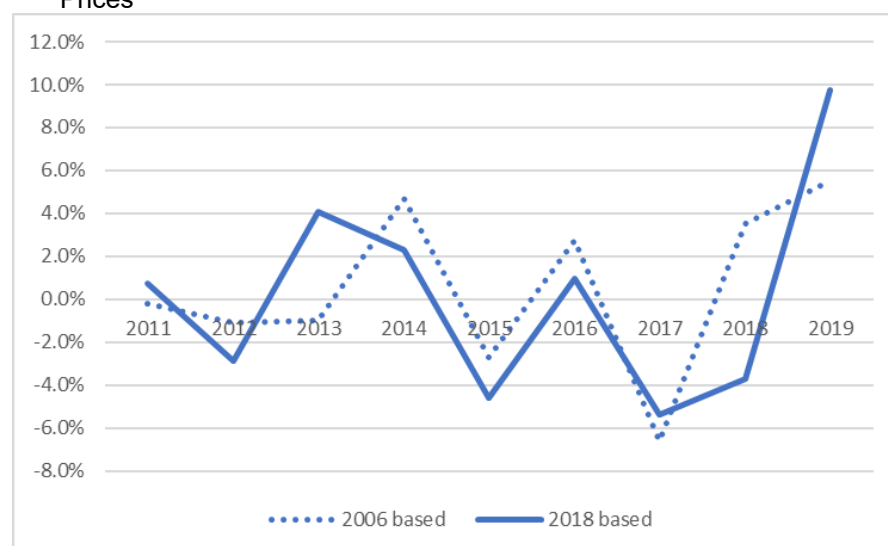
Of note, the chart shows,

- The annual percentage change in GDP in 2013 was revised from -1.0 percent based on the 2006 base year to 4.0 percent based on the updated 2018 based series, a revision of +5.1 percentage points. Of this total revision, 1.8 percentage points resulted from the introduction of the use of VAT turnover to estimate the Business services activity. A further 1.5 percentage points resulted for the introduction of the change in methodology for estimation of the volume of taxes on products (see paragraph 16).

- The annual percentage change in GDP in 2018 was revised from 3.5 percent based on the 2006 base year to -3.7 percent based on the updated 2018 based series, a revision of -7.2 percentage points. The revision was almost entirely the result of the improved method for measuring the volume of taxes (see paragraph 16), which accounted for -6.6 percentage points of the total.

- The annual percentage change in GDP in 2019 was revised from 5.5 percent based on the 2006 base year to 9.7 percent based on the updated 2018 based series, a revision of +4.2 percentage points. Again, much of this revision resulted of the improved method for measuring the volume of taxes (see paragraph 16), which accounted for 2.8 percentage points of the total revision, with revision to manufacturing and business services (resulting for the introduction of the VAT turnover data) accounting collectively for a further 2.5 percentage points. Agricultural output accounted for an additional 1.3 percentage points, resulting from the introduction of the improved estimates of output of the Livestock activity, based on the new work in progress model.

20.   Long run time series, from 2000 to 2019 were developed in both current and constant prices. In current prices, the method is straightforward and involves 'backcasting' the levels of GVA for each 'elementary' economic activity using the previously published growth rates and adding the components together to produce the aggregate series.

21.   In constant price the method is similar except that all levels (including aggregate GDP) are backcast based on previously published growth rates. This is the method referred to as 'chainlinking,'

and preserves the previous base years before the latest 'link' year (in this case 2012). The method is used to ensure the constant price series adequately reflects the structure of the economy in each year. To achieve this, it was necessary to chainlink the 2006-based constant series with the 2018-based constant price series. This linking is needed so that, for example, the weights used to aggregate the detailed series for economic activities in 2006 are based on estimates of the structure of the economy in that year. Chainlinking in this way requires a 'link year' to be chosen, which is usually the year half-way between the previous and latest base years. The year 2012 was chosen because it is approximately in the middle of the period between the two base years, 2006 and 2018. In this case, 2012 was selected as the link year. The basic concept here is to use the 2006 shares of current price GVA as the 'weights' for aggregating the constant price series for years between 2000–2012, while the 2018 shares are used for the later years. In short, chainlinked series have potentially many 'base years,' but only one 'reference year' (in this case, 2018).

22.   One feature of chainlinking is that the property of 'additivity' is lost in the years before the link, that is that the sum of constant prices GVA across all economic activities is not equal to the total constant price series for years before 2012. This lack of additivity arises because the constant price series are indexes of the change in the volume of economic activity and, as such, do not have an intrinsic 'level' (other than that they are referenced to the value of current price GVA in the relevant base year). In contrast, current price series are always additive in this sense.

Recommendations

The CSO should:

- Update the data in the GDP system to produce estimates for all years from 2010 to 2021.

- Publish the referenced series together with a note describing the revisions resulting from rebasing to 2018 prices and the incorporation of more comprehensive data.

Section III. Improving the Data Content of GDP and a Workplan for the Further Development of National Accounts and Price Statistics

23.   The mission reviewed the data sources that are available for use and/or are used for national accounts compilation purposes and identified areas for improvement. There is scope to improve the annual GDP estimates by economic activity (GDP-P) and to improve on the timeliness of these estimates. The proposed data strategy is to make greater use of administrative data and to conduct periodic studies/investigations to address current data gaps in livestock, transportation, and agriculture. These efforts would provide the necessary information to update benchmark estimates of economic activity through a supply and use framework which will also provide for a comprehensive rebased GDP-P estimate.

24.   An important source of data for compiling national accounts is administrative tax and regulatory data. A range of administrative and regulatory data are being produced by various government agencies and departments in Dominica that are being used or could potentially be used by the CSO. Data currently used include trade data, cargo, and shipping data from the Customs Department; financial and insurance sector data from the ECCB; employment and contributions data from the DSS;

Government accounts data from the Ministry of Finance. In addition, some data from the Inland Revenue Department (for some individual companies), as well as data for tourism data from DDA, and for fishing from the Fisheries Department,

Administrative Data

25.   Currently, the CSO only obtains aggregated VAT data from IRD and unit level employment information (excluding earnings) from the DSS. The mission incorporated some of the information from the VAT files into the estimates of value added for manufacturing, business services, and telecommunications. However, widespread use of the VAT information could not be implemented without the ability to fully review the classification of the micro data. The VAT information was provided by broad categories of activities. The potential for misclassification may be inherent in the aggregated data which may distort the quality of the activity results.

26.   Data that could considerably improve the quality of the GDP estimates include the unit level VAT turnover information, unit level personal and corporate income tax schedules (including the financial statements from the IRD), and insurable earnings from DSS. These are more comprehensive sources than provided by the VAT system in terms of the coverage of the population of businesses and the detail of the information available. If the CSO was able to access the detailed, micro level data, including company names, from the corporate income tax (CIT) and personal Income tax (PIT) systems, this would provide the opportunity to significantly increase the data content of the estimates of GDP. By cross referencing this information with data from the DSS on employment and earnings, it would also be possible to develop the basis of a register which can be used to ensure consistency of the industry classifications used between both sources and provide a frame for sample surveys. It would be helpful if the Ministry of Finance could facilitate for the CSO to obtain Access the micro level data from the VAT system.

Agriculture

27.   The mission team met with the Permanent Secretary of the Ministry of Agriculture, the chief veterinarian and the Agricultural officer f responsible for agriculture crops. In the absence of any current information on cultivated land, crops yields and market prices for other agriculture crops, the CSO derives an estimate of total supply of agriculture by extrapolating a historical benchmark for domestic consumption using the CPI for food and adds the total agriculture exports. The Real Sector mission in October noted that custom records do not provide accurate weights for certain export products. Hence, the current methodology may underestimate the importance of the agriculture sector.

28.   The Permanent Secretary (PS) provided an overview of the agricultural plans aimed to revolutionize the collection of agriculture statistics in Dominica. The Census of Agriculture is expected to begin in the second quarter of 2024. The PS plans to equip all agricultural enumerators numerators with computer assisted collection and auditing technology to enhance the collection, edit and imputation and accessibility of agriculture data. To improve response rates, the PS is providing incentives to agriculture wholesalers, exporters and other traders to comply with the data collection.

29.   The Chief Veterinarian discussed the livestock production cycle in Dominica and provided some of the key parameters required for the PIM model. In addition, sample information on livestock production was also provided. Currently, the collection of the data is not consistently and regularly provided to the MOA, however as part of the strategic data collection plans this situation will hopefully be remedied.

Dominica Social Security

30.   The DSS data are reasonably comprehensive and have been updated to ISIC Revision 4. The DSS regularly submits to the CSO unit level employment and contributions data for over 4000 businesses. During our meeting, two additional variables were requested – total salaries and wages and number of hours worked, however the DSS does not collect total compensation from employers nor hours worked, however, they can provide maximum insurable earnings.

Customs

31.   Collection of import data are very reliable as sufficient resources are allocated to ensure the various taxes on goods entering the country are collected. However, imports with a value of less than 150 EC enter the country duty free. As such, custom officers do not classify these goods and are not part of the submission to the CSO. The mission requested to obtain an estimate of the courier packages.

32.   On the contrary, exports and in particular exports of agriculture products are more challenging due to several factors, including:

- Exports of agriculture products are not exported with standardized size boxes/bags etc. Consequently, the weights associated with these may be under or over estimated.

- Insufficient officers to ensure accurate recording of exports.

Tourism

33.   Discovery Dominica is responsible for the collection of tourism data. Information for arrivals for tourist is collected from all ports of entry in Dominica. The agency collects arrival information and various attributes associated with the traveler including place of stay and type of accommodations in Dominica (although limited data are available for tourists arriving by yacht). The mission requested unit level information for each of the commercial accommodation types, maximum occupancy rate, length of stay and average price to improve the current output estimates (table 2 sets out a template for these data).

TABLE 2. Template for Table for Data on Stay Over Visitors by Place of Stay

ACCOMMODATION TYPE	Year			Maximum Occupancy Rate	Length of Stay	Average Price
	2022	2021	2020			
Apartment/Cottages						
Bed & Breakfast						
Campgrounds						
Dive/Eco Lodge						
Guest House						
Hotel						
Inns						
Medical School Housing						
Other						

ACCOMMODATION TYPE	Year	Maximum Occupancy Rate	Length of Stay	Average Price
Other Paid				
Private Homes				
TOTAL				

34.   The CSO with support from DDA conduct the Visitor Expenditure Survey (VES). During COVID the survey was suspended. The VES was relaunched in May 2022 and was planned to be conducted on a quarterly basis, however other priorities such as the CENSUS have interrupted the quarterly schedule. For 2023, the VES will only be available for the 4th quarter.

Dominica Export and Import Agency

35.   The Dominica Export Import Agency (DEXIA) is a Statutory Government Organization responsible for the promotion, development, and export of agricultural, agro-processing and manufactured products. The agency manufactures passion fruit pulp and it also imports bulk rice and sugar. The agency has two main warehouses and storage facilities. One of the main concerns of DEXIA is with the value and quantity of agriculture exports. As discussed previously, agriculture exports are not collected from a comprehensive source and may be underestimated. DEXIA will provide the CSO with all the information they have collected, however not all agriculture exports pass through their warehouses.

Other Activities

36.   The mission team reviewed all the economic activities in Dominica and highlighted three major areas that the CSO needs to improve the sources and methods. Each of these activities is discussed below.

Land Transportation

37.   The current and volume estimates for Land transportation – taxis, buses and truck need to be improved. Administrative tax data coupled with sample information on distance travelled and fares would strengthen the current price estimates of land transportation. Concerning the estimates for trucking services, the CSO has an estimate of the total stock of trucks in Dominica for personal and commercial use. However, the model could be improved by collecting information for licensed commercial trucks.

Telecommunications

38.   There are two main providers for telecommunication services in Dominica. Both of these provide information to the CSO, however the data is not consistent with the information on the VAT. When data becomes available from the administrative tax data and unit level VAT or CIT data, the CSO would be better able to confront their current estimates and make the appropriate adjustments.

Restaurants

39.   Current price GDP estimate for restaurants and meals outside the home are derived by extrapolating the number of bed nights from hotel and other accommodations sources and the CPI for meals outside the home. In Dominica, there is a significant amount of consumption by households which will not be accounted for by the current methodology. Similar to other activities, administrative data on the sales and costs of businesses in this sector could provide essential information for the formal sector.

The Way Forward

40.   The CSO should continue to access other administrative data from government departments and other public institutions. In addition to unit level data from the CIT, PIT and VAT systems would greatly improve the GDP estimates.

41.   One of the goals of the IMF Real Sector is to establish current benchmark estimates of economic activity through a supply use framework and to produce a comprehensive rebase GDP and to improve price statistics (both consumer and produce price indexes). In Dominica, the data required for such benchmarks include:

- Survey of Living Conditions data will be essential for compiling the SUT and rebasing the CPI and GDP.
- Data by SUT product group on the trade and transport margins
- Data on construction industry costs and mark-ups by type of construction
- Data from Ministry of Agriculture on cultivated land and yields
- Data from DEXIA on agriculture export prices
- Detailed Vat Data
- Corporate and personal income tax data
- Comprehensive data for land transportation – taxis, buses and trucks
- Data for restaurants sales and intermediate consumption
- Data for livestock including information on the lifecycle of animals.
- Tourism expenditures

42.   A workplan for a further 6-7 missions by the IMF Real Sector Division for the period up to December 2024 was agreed with the CSO team. These missions will aim to improve the development of economic and price statistics and produce benchmark GDP statistics from a supply and use framework to rebase GDP for 2023. After these missions have been completed, the CARTAC real sector advisor will provide a peer review.

Recommendations

The CSO should:

- Acquire unit level annual data, including company names, from the Inland Revenue Department's Corporate Income Tax, Personal Income Tax (for self-employed persons), and Value Added Tax.
- Code the IRD dataset to ISIC Revision 4 and link the records to the equivalent businesses in the DSS dataset to establish a prototype business register.
- Where relevant, incorporate the CIT/PIT data from these sources into the annual estimation procedure, notably for manufacturing business services.
- Work with the MOA and obtain data on area under crop cultivation and yield rates to improve the output and IC estimates.
- Collaborate with the MOA to obtain key parameter information for the livestock model.
- Request an estimate of the courier packages under 150 EC that can be brought into Dominica free of custom duties.
- Obtain additional information on inbound tourism.

- Establish a regular quarterly visitor expenditure survey.
- Work with DEXIA to understand the agriculture export process.
- Improve the sources and method for land transportation.

Section IV. Detailed Technical Assessment and Recommendations

TABLE 3. Detailed Technical Assessment

Priority	Action/Milestone	Target Completion Date	Actual completion date
Objective: Strengthen compilation and dissemination of macroeconomic and financial statistics for decision making according to internationally accepted statistical standards, including developing statistical infrastructure, source data, serviceability and/or metadata.			
Outcome: Higher frequency data has been compiled and disseminated internally and/or to the public			
Outcome: Data are compiled and disseminated using appropriate statistical techniques, including dealing with data sources, and/or assessment and validation of intermediate data and statistical outputs			
H	Assessment of GDP concepts, sources and methods	5/1/2018	Ongoing
Outcome: New benchmarks have been developed aligned to international statistical standards and using the latest most comprehensive source data available			
M	Base year for GDP updated to 2018	9/8/2023	Completed
Objective: Outcome: Staff capacity increased through training, especially on developing source data, compilation methods, and dissemination.			
Outcome: National accounts compiled and disseminated on a quarterly or monthly basis.			
M	Staff trained on national accounts concepts, sources and methods	5/1/2018	Ongoing
H	Train new entrants in the methods used to compile GDP.	4/28/2023	Ongoing

TABLE 4. Summary of Recommendations

Priority	Recommendation	Target Completion Date
H	Update the data in the GDP system to produce estimates for all years from 2010 to 2021.	October 2023
H	Publish the referenced series together with a note describing the revisions resulting from rebasing to 2018 prices and the incorporation of more comprehensive data.	October 2023

Priority	Recommendation	Target Completion Date
H	Acquire unit level annual data, including company names, from the Inland Revenue Department's Corporate Income Tax, Personal Income Tax (for self-employed persons), and Value Added Tax.	September 2023
H	Code the IRD dataset to ISIC Revision 4 and link the records to the equivalent businesses in the DSS dataset to establish a prototype business register.	October 2023
H	Where relevant, incorporate the CIT/PIT data from these sources into the annual estimation procedure, notably for manufacturing business services.	October 2023
M	Work with the MOA and obtain data on area under crop cultivation and yield rates to improve the output and IC estimates.	November 2023
M	Collaborate with the MOA to obtain key parameter information for the livestock model.	November 2023
M	Request an estimate of the courier packages under 150 EC that can be brought into Dominica free of custom duties.	November 2023
M	Obtain additional information on inbound tourism.	November 2023
M	Establish a regular quarterly visitor expenditure survey.	April 2024
M	Work with DEXIA to understand the agriculture export process.	December 2023

Section V. List of Officials Met During the Mission

Name	Institution
Ms. Denise Edwards, Financial Secretary	Ministry of Finance
Ms. Nella Jules, Statistician	Central Statistics Office
Ms. Marie-Ange Emanuel, Statistician	Central Statistics Office
Mr. Colin Dalrymple, Statistician	Central Statistics Office
Mr Brent Ismael, Statistical officer	Central Statistics Office
Mr. Dwayne Dick, Statistician	Central Statistics Office
Mr. Adisa Trotter, Agriculture Officer	Ministry of Agriculture
Mr. Lennox St. Aimee, Veterinarian	Ministry of Agriculture
Mr. Reginald Severin, Permanent Secretary	Ministry of Agriculture
Ms. Paula Plasko, General Manager of Dexia	Dominica Export Import Agency (Ministry of Foreign Affairs)
Mr. Bristol Lawrence, Manager of DEXIA's multipurpose packhouse	Dominica Export Import Agency (Ministry of Foreign Affairs)
Mrs. Sylma Scotland Lloyd, Comptroller of Inland Revenue	Inland Revenue Department

Name	Institution
Mrs. Annette George-Boney, Asst. Comptroller Inland Revenue Systems Unit	Inland Revenue Department
Mr. Ault Vidal, Assistant Comptroller of Customs	Customs Department
Mrs. Brinda Green-Charles, Database Management Specialist	Customs Department
Ms. Elizabeth Angol, Marketing Executive-Research and Statistics	Discover Dominica Authority
Mrs. Janice Jean Jacques Thomas, Director of Dominica Social Security	Dominica Social Security
Mrs. Johanna John Bertrand, Manager, Actuarial Services & MIS	Dominica Social Security
Mr. Marcus Jean Jacques, Assistant Manager, Actuarial Services & MIS	Dominica Social Security

Appendix I. Business Processing Documentation for the DSS Database

Author: Robin Youll

Last updated September 9, 2023

This document sets out the calculation steps and processes needed to maintain the Social Security database in Dominica.

The system was developed in April 2023, and comprises one 'master' workbook

<p style="text-align:center">Soc_Sec_Master.xlsb</p>

The workbook is used to create indexes of employee contributions and numbers of employees, based on data for the stoical security system.

The results are in the following worksheets:

Bus_Cont The individual business level time series of contributions
Cont_4_Digit The ISIC rev 4 time series of contributions (4-digit level)
Cont_2_Digit The ISIC rev 4 time series of contributions (2-digit level)
Bus_Emp The individual business level time series of number of employees
Emp_4_Digit The ISIC rev 4 time series of number of employees (4-digit level)
Emp_2_Digit The ISIC rev 4 time series of number of employees (42digit level)

To update the workbook:

1. Get the latest data from the Social Security department in the format:

Bus_ID	Name	Activity	Contributions	Employees	Economic Activity - Class
788012332	8TN PAINTING SERVICES	Other Comm., Social & Personal Services	3682.8	5	4761
788011747	A & HL LTD	Other Comm., Social & Personal Services	11165	1	4711

2. Add a new worksheet for the data, and call it yyyy (for example, 2022, 2023 etc.)

3. Copy, as values, the data from step 1 to the worksheet

4. Select the year to add to the registry.

5. Go the worksheet '**New**' and see which companies are new (in the sense that they are not currently stored in the registry worksheet '**Reg**'

6. Copy the new businesses to the end of the **Reg** list.

Appendix II. GDP System Business Processing Documentation

Author: Robin Youll

Last updated 9 September 2023

Contents

A. Introduction

This document sets out the calculation steps and processes needed to maintain the GPD-P estimates in Dominica.

The system was developed in April and September 2023, and comprises one 'master' workbook
GDP_Master.xlsb

Section C describes this workbook, and Section D sets out the basis for updating the GDP series, But first, Section B provides some general tips on housekeeping for the GDP system.

B. System Housekeeping

The systems consist of a set of integrated 'industry' workbooks, and one 'master' workbook which links to each of these.

It is critical to ensure that the linkages between the individual workbooks and to the master workbooks are maintained.

Some industry workbooks also link to others in the set so that data can be shared between them. **It is important therefore to ensure that the links between the industry workbooks and the master workbook are maintained.**

Check the links are all in order at the start and end of each GDP 'round'. Use the 'Data-Edit Links-> Check Status' procedure in Excel. If links are 'Not found,' then relink them to the correct version of the workbook (use the 'Change link' procedure in the 'Data->Edit Links' menu.

The naming connection used for the industry workbooks which are linked is strict: the names (as listed in Appendix 2) **must not be changed**. They should not be updated by adding, for example, initials or a date at the end, e.g., 08 Road Transport_RY.xlsb. If copies of the workbooks are needed for research purposes for example, then make a copy of the original workbook and change the name of the copy.

The folder in which the workbooks reside should have fixed names, e.g. **GDP_Live**.

Once a GDP 'round' is over, take a copy of the entire folder and save it as an archive version, for example as GDP_2021.

CRITICAL ISSUE: **DO NOT ADD ROWS OR COLUMNS IN ANY OF THE LINKED WORKBOOKS WITHOUT ALSO OPENING THE MASTER WORKBOOK FIRST, OTHERWISE THE LINKS WILL BE TO THE WTRONG ROWS/COLUMNS**.

Finally, note the workbooks are all in **.xlsb** format, which is 'binary' Excel files. This is because this format saves space and calculation is quicker than with the **.xlsx** format files.

To help navigate this document, In this document **worksheets** are coloured like this, and **workbooks** like this.

C. The GDP Master Workbook

GDP_Master.xlsb

This produces the results for the latest benchmark estimates of annual GDP in both current and constant prices based on the selected base year (currently 2018).

It comprises broad 'groups' of worksheets, as set out in Annex 1.

The purpose of each group and an outline of the methods used is provided in the sections below.

GROUP 1: DATA

Consists of the following worksheets:

ISIC
CPI
SS_Emp
SS_Conp
VAT_4dig
VAT_2Dig

SS_Comp and **SS_Emp** links to Soc_Sec_Master.xlsb which is where the Social Security data in Earnings/employees is maintained (see separate instructions for updating in that workbook).The data are used as current price indicators for some ISIC headings.

Column A has an **SUT_Activity**, which are the codes use for economic activities in the master workbook which are based on the activity classification used in the GDP compilation system.

VAT _4dig and **VAT_2Dig** link to **VAT_master.xlsb** which is where the VAT data (in this case matched-pairs indexes) are maintained (see separate instructions for updating in that workbook)

CPI links to the **CPI_A.xlsb** workbook, and is the complete list of CPIs which are needed in the system.

ISIC is just ISIC Rev 4

GROUP 2: ECONOMIC ACTIVITIES

There are 18 worksheets in this group, one for each economic activity and including some 'Data' worksheets (coloured light blue) which undertake some preliminary calculations with regard to each specific activity).

Activities			
Tax_Sub	Manu	Sea	Real_Est
Bananas	Elec	Air	Rent
O_Crops	Water	Aux_Trans	Comp
Livestock	Const	FISIM	Bus_Serv
Fishing	Trade	Banks_Data	Pub_Sect
Forestry	Accom_Data	Banks	Edu_Priv
Quarry	Accom	Aux_Fin	Health_Priv
Manu_ICO	Rest	Ins	Pers
Manu_Data	Trans_Data	Comms	Priv_HH
Manu_Q	Road	Real_Est_Data	

Some of these are linked to its own 'industry' workbook, see Annex 2 for a list of the workbooks which are linked.

Each of the dark blue worksheets is set up broadly in the same way, with:
   i)   Links (shown in light blue) to '**indicator**' data from the GVA system.
   ii)   Links to the **Base** worksheet (shown in brow/yellow) to the **benchmark levels** of Output, IC and GVA for each sub-activities included in the worksheet.

The broad procedure used in these worksheets is to link the quarterly series from each industry workbook (shown in blue) and use these as **indexes** to extrapolate the base year levels of the series (from the GDP published series)

The formulae in the worksheets are extended to 2026, so do not need updating until 2027. The linked workbooks do, however (see later).

IMPORTANT: In many of the worksheets, for example **Real_Est** and **Aux_Trans**, there are yellow cells indicated as:
Enter data
Indicating that the data for these needs to be entered directly into the worksheet.

GROUP 3: SUMMARY

Comprises six worksheets:

Summary
KP_GVA
KP_IC
KP_O
CP_GVA
CP_IC
CP_O

These worksheets provide a summary of all the worksheets in Group 1. They <u>are not used</u> other than as a basis for pulling together the data from the worksheets in Group 1.

They may be useful if more detail on specific industries is required (they are summarized to the published level in the worksheets in Group 7).

GROUP 4: BASE

Comprises one worksheet:

Base

The **Base** worksheet contain the benchmark levels of Output and IC or GVA for each economic activity.

GROUP 5: PUBL

Consists of 8 worksheets:

Tables
PUBL_KP
PUBL_KP_%_Ch
Cont_KP
PUBL_CP
Cont_CP
PUBL_CP_Share
PUBL_CP_O
PUBL_CP_IC

These are the 'Final' worksheets with the formatted publication tables for the rebased series.

The **PUBL_CP** and **PUBL_KP** worksheets contain the final tables in CP and KP (based on 2018 prices).

The **Cont_KP** and **Cont_CP** worksheets contain contributions analysis for the published series (showing the contributions to the annual percentage change in total GDP from each activity). These worksheets should be helpful in quality assuring the emerging results each year, but also provide information which can be used in the GDP press release (e.g. 'GDP increased by 5.2% in 2022 compared to 2021, with manufacturing accounting for 2.1 percentage points of the increase,' etc.).

PUBL_CP_O and **PUBL_CP_IC** are the current price output and intermediate consumption.

D. Updating the Annual GDP Series

The new annual GDP-P system is built 'on-top' of the existing GVA system, meaning that it is designed so that the regular basis for data capture can continue as usual.

Some simplification of the previous system (to remove redundancy) and so has been made. See **Annex 2** for a complete list of the workbooks from the previous system which need to be updated as usual.

There are two other linked workbooks which need to be updated (see separate notes in the Instructions worksheets of these workbooks on how to do this):

VAT_Master.xlsb
Soc_Sec_Master.xlsb

The steps to update the GDP series are:

1. Update the 'industry' workbooks (see Annex 2) as usual.

2. Update the CPI.xlsb workbook.

3. Update all yellow cells indicated Group 2 of the GDP_Master workbook in this colour: `Enter data`

4. Update the Social Security and VAT databases:
    VAT_Master.xlsb
    Soc_Sec_Master.xlsb

The calculations are then all automatic, and the workbook has formula up to 2026, so there's no need to update the workbook.

5. Review the **KP_Contrib** and **CP_Contrib** worksheets to establish the reasons for the observed % changes in total GDP in constant and current prices. This may lead to the identification of issues in the individual industry workbooks, which should be investigated/resolved.

Annex 1: Worksheets in the master workbook

Tables	Summaries	Base	Activities				Data
PUBL_KP_GDP	KP_GVA	Base	Tax_Sub	Manu	Sea	Real_Est	ISIC
PUBL_KP_%_Ch	KP_O		Bananas	Elec	Air	Rent	CPI
Cont_KP_GDP	KP_IC		O_Crops	Water	Aux_Trans	Comp	SS_Emp
PUBL_CP_GDP	CP_GVA		Livestock	Const	FISIM	Bus_Serv	SS_Conp
Cont_CP_GDP	CP_O		Fishing	Trade	Banks_Data	Pub_Sect	VAT_4dig
PUBL_CP_Share	CP_IC		Forestry	Accom_Data	Banks	Edu_Priv	VAT_2Dig
PUBL_CP_O			Quarry	Accom	Aux_Fin	Health_Priv	Sheets
			Manu_ICO	Rest	Ins	Pers	
			Manu	Trans_Data	Comms	Priv_HH	
				Road	Real_Est_Data		

Annex 2: Workbooks linked to the Master workbook.

'ISIC' Workbooks requiring updating
A012_Other_Crops.xlsb
A014_Livestock_Poultry.xlsb
A014_Livestock_WiP_Model.xlsb
A03_Fishing.xlsb
A03_Fishing_Data.xlsb
C_Manufacturing_IC_O_Historic.xlsb
D_Electricity.xlsb
E_Water.xlsb
G_Trade.xlsb
H49_Road_Trans.xlsb
H50_Sea_Transport.xlsb
H51_Air_Liat.xlsb
J_Communications.xlsb
K_FISIM.xlsb
K65_Insurance.xlsb
K66_Aux_Fin.xlsb
L_Real Estate.xlsb
OPQ_Public_Sector.xlsb
P_Education_Private.xlsb
Q_Health_and_Social_Work.xlsb
R_S_Personal_Services.xlsb
Taxes on production.xlsb
Other workbooks
_CPI.xlsb
_Population.xlsb
_VAT_Master.xlsb
_Soc_Sec_Master.xlsb