

Sustainability Plan for the Production
Of regular annual estimates of
Gross Domestic Product

Department of Statistics
Commonwealth of the Bahamas
January 2005

Introduction	3
Section 1: Technical Infrastructure	4
Section 2: Feeder Programs	5
2.1 <i>Provisional and Final Estimates</i>	5
Table 1: Gross Domestic Expenditure 2001 (not official data – working data/data in progress).....	6
Table 2: Gross Domestic Product 2001 (not official data – working data)	7
2.1.1 The Establishment Survey Redesign – Frame, Questionnaires	7
and Production Processes.....	7
2.1.2 International Merchandise Trade Statistics.....	11
2.1.3 Other Data Series	12
2.2 <i>Preliminary Estimates</i>	13
Section 3: Partnerships	15
Section 4: Future Development	17
4.1 <i>Supply and Use Tables</i>	17
4.2 <i>Re-basing the Constant Price Series</i>	18
Section 5. Release Schedule	19
Annex 1: Indicators Used to Estimate GVA of Industrial Origin	21
Annex 2: Indicator Sources and sustainability Impact	23
Annex 3: Technical Assistance Mission in National Accounts (2003-2004)	26

Introduction

The regular and timely production of statistical information relating to the commercial, industrial, mining social, financial, economic and general activities and conditions of The Bahamas make up the mandate of the Department of Statistics. Two standard and key indicators of such conditions are the Gross Domestic Product (GDP) and the measure of Gross Domestic Expenditures (GDE). Although the Statistics Act of the commonwealth of the Bahamas does not specify these indicators, it is the intent of the Department of Statistics, in conjunction with its constituency of stakeholders within the Government of the Bahamas, to continue to produce and publish these very important indicators.

In the recent past, a number of factors have contributed to an interruption to the release of these indicators. Following a recent infusion of technical support and in anticipation of some additional financial support to redesign the Establishment survey, the Department is now able to announce its plans to produce GDE/GDP figures on an annual basis, with a release schedule that will provide key input to the Government's Fiscal Planning Cycle.

The following document presents a comprehensive overview of the initiatives completed, underway and planned within the Department of Statistics to support the GDP release and ensure its regular sustained and timely production.

The first section addresses the technical infrastructure of the Department of Statistics and outlines the activities and investments necessary to position the Department as a viable National Statistical Organization.

The second section addresses the various feeder programs that support the development of the system of National Accounts estimates, focusing on the major contributors to the preliminary, provisional and final estimates.

The third section speaks to the various partnerships (in place and anticipated) that constitute the various external information sources integral to the delivery of System of National Accounts estimates.

The fourth section looks further into the future and outlines the longer term plans to expand and strengthen the System of National Accounts for the Bahamas via the introduction of supply and use tables and other data development initiatives that are essential to a fully integrated framework.

The final section presents the proposed schedule for the production and release of the GDP/GNE estimates along with an indication of the revision cycle for the data.

Three Annexes are also provided. The first Annex presents a list of indicators used to estimate preliminary GDP in current and constant prices for any given year. The Second Annex presents an assessment of the indicators from the perspective of sustainability. The third Annex presents the recommended work plan by a CARTAC-sponsored Technical Assistance Mission in National Accounts in 2004.

Section 1: Technical Infrastructure

Information technology or IT is an important tool for any successful organization. Without a strong and protected IT system, a national statistical office is unable to function in the ever-changing and increasingly sophisticated world of automated processes and internet communication.

The IT system for the department of Statistics is undergoing an important upgrade of both hardware and software. In addition to the introduction of a fiber optic backbone, other essential elements to protect the security of the department, such as a gateway from the department to the government wide area network will be put in place. Locally, the speed and efficiency of the LAN will be upgraded and a process to standardize workstations – hardware and software - will begin. New servers and the appropriate supporting software will be identified to better support statistical programs from inception to the final publication and dissemination step. Among other features to support survey activity, the capacity to collect and disseminate information via the Internet will have a high priority.

It is often the case that when automated processing is introduced, the automated processes address local issues and mirror manual operations. While the upside of this approach provides a ‘quick fix’, there are longer-term drawbacks, the most common being that of little or limited improvement in efficiency. It is the intention of the Department to ensure that its movements towards greater automation in its statistical processes are influenced by the overall and long-term benefits that provide the maximum efficiency and support sustainable production of statistical information. To achieve this, the department is seeking a mature systems analyst with suitable experience to lead its IT systems development.

Section 2: Feeder Programs

The following discussion of the feeder programs to the System of National Accounts is presented in two parts. The first part focuses on the Provisional and Final Estimates – those estimates which are released two or more years following a reference period and that reflect maximum use of reported information from annual surveys of both households and business. The second part focuses on the Preliminary Estimates – those estimates that are released within one year following the reference period and are based on general indicators. Note, the preliminary estimates are generally less reliable and are usually subject to larger revisions than those found in the provisional and final estimates.

2.1 Provisional and Final Estimates

The System of National Accounts provides a framework or ‘system’ that brings together in an integrated and logical form from a variety of sources, information describing the various actors and activities within an economy. One of the key features of this accounting system is its measurement of output from two perspectives – expenditures and production. This is similar in nature to the double-entry system used in standard accounting and assures high quality aggregate measures. Consequently, although the quality of the aggregate measures of GNE and GDP is greater than the sum of the parts, the quality of the aggregate measures is heavily influenced by the quality of the inputs from the feeder systems or parts.

The quality of the GDP estimates has recently been strengthened by a comprehensive review of its methodologies carried out jointly by a Statistics Adviser from CARTAC and an SNA expert from the IMF. Over the period December 2003 to October 2004, three missions visited the Department of Statistics to work with the SNA staff, reviewing processes and suggesting ways to improve on the quality and reliability of the SNA component accounts and methods of deflation. Most, if not all of the recommendations for short term improvement emanating from the mission have been implemented, and the outstanding recommendations are of a nature that will require additional time and resources to put in place. This will happen as part of the subsequent years’ processing. (See Section 4 – future Development) Also, the mission proposed a work plan, and it is presented in Annex 3 of this document.

The review of the data, the final step of the mission’s work, will be completed by December 2004, at which time, the Department of Statistics will finalize its data release plans¹ for the data for the period 1989^{final} through 2002^{final}, 2003^{provisional} and 2004^{preliminary}. The timing of the release is geared to meet the Government’s annual fiscal planning cycle, a cycle that is in full bloom, by March.

Overall, the Bahamian economy is a small open one. Its production depends to a large degree on the Financial Services Sector and Tourism and its consumption is primarily

¹ The proposed permanent revision and release cycle is presented in Section 5.

sourced from imported goods. Nevertheless, there are important contributions from its manufacturing and service sectors (outside of finance and tourism) and government sectors that cannot be overlooked. In recognition of these principle elements within the economy, the Department of Statistics has undertaken a medium-term program to strengthen the statistical data series that contribute to GDE/GDP.

A quick review of the following table shows the relative contributions to total Gross Domestic Expenditure, and the sources for the data series.

Table 1: Gross Domestic Expenditure 2001 (not official data – working data/data in progress)			
	2001	Relative contribution	Data series /sources
Government Expenditure	690	14%	Central Bank
Private Final consumption Expenditure	3463	69%	Establishment and household surveys and Merchandise Trade Information, Central Bank Reports, Ministry of Tourism Reports
Gross Capital Formation	1784	36%	Establishment surveys, Merchandise trade data and administrative documents
Trade in goods and services:			
Exports	2170	43%	Merchandise trade administrative documents, Central Bank Reports,
Imports	2948	-58%	Ministry of Tourism Reports
Statistical Discrepancy	(179)	-4%	
Total	5009	100%	

As the measure of Gross Domestic Product is the sum of the outputs of the industrial activity of the nation, the following table presents, by industrial activity, the relative contribution of each to the total GDP.

Table 2: Gross Domestic Product 2001 (not official data – working data)			
	2001	Relative Contribution	source
Ag & Fishing	112	2%	Department of Agriculture & Fisheries
Mining & Mfg	253	5%	Establishment Survey
Construction	321	6%	Establishment Survey and Ministry of Public Works
Utilities	161	3%	Establishment Survey
Wholesale trade	155	3%	Establishment Survey
Retail Trade	437	9%	Establishment Survey
Hotels & Restaurants	572	11%	Establishment Survey
Transportation & related activities	491	10%	Establishment Survey
Finance	586	12%	Central Bank and Various sources outside of the DoS
Real estate, rents & Business services	958	19%	Establishment Survey, BAIC
Other industries	1004	16%	Establishment Survey
Statistical Discrepancy	179	4%	
Total GDP	5009	100%	

The key common-source data sets for the expenditure and industrial product estimates are the Annual Establishment Survey and Merchandise Trade Information. Both are managed by the Department of Statistics and have been targeted for renewal to allow them to better support the preliminary and revised estimates of GDE and GDP.

2.1.1 The Establishment Survey Redesign – Frame, Questionnaires and Production Processes

2.1.1.1 The Business Frame

The Establishment Survey is an economy-wide survey that collects information on the structure and activities of Bahamian businesses in non-financial industries. One of the most important pillars of such a broad based survey is its ability to provide comprehensive unduplicated coverage of the economy. This is best achieved through a single integrated list of businesses – commonly referred to as a frame – that is constantly maintained through unbiased research while making maximum use of administrative

information. The Department of Statistics will use its existing register of businesses in conjunction with other information sources to develop an integrated business frame.

A business frame provides a key tool to make possible survey sampling with statistical probability. Estimates for the survey population can be determined along with measures of reliability or variance for the population characteristics. All business surveys carried out by the department – the Establishment survey, the Occupation and Wage survey and eventually the Economic Census (necessary for the development of Supply and Use Tables in the SNA) will benefit from the existence of a complete frame. One important side benefit will be the capacity to better control response burden on businesses – particularly the small to medium sized operations – through non-overlapping samples, sample rotation and sample size minimization.

A business frame provides a reliable source for profiles of the economic structure of the economy – including indicators of business growth and decline, births and deaths. The frame can provide an important reference when interim or preliminary estimates are needed to support the government planning process.

This Department of Statistics' establishment survey does not have such a frame. While field officers make a regular and concerted effort to maintain their establishment lists, they are unable to devote the time and effort necessary to assure complete and unduplicated coverage of the economy. This severely restricts their capacity to provide all-inclusive estimates for the 'industries' they cover and their estimates are regularly second-guessed for completeness.

To resolve this problem, the Department will assign the job of business frame development and maintenance to a single individual whose sole responsibility will be to develop and maintain through automated and other means, a business frame for the Department.

There are a variety of untapped administrative sources that will contribute immensely to the frame. It will be the responsibility of the frame manager to seek out the sources, negotiate access to and delivery of suitable information to build and maintain the frame. The Business License Number and the National Insurance Board are but two examples.

Frame development comes at an important time in the schedule of the IT infrastructure development for the Department. The processing power necessary to maintain a frame, and the necessary safeguards to protect the confidentiality of the frame information will influence the decision process when choosing the informatics architecture.

2.1.1.2 Questionnaires

Another aspect of the Establishment survey pertains to the collection instrument or questionnaire. Businesses object to the time spent in completing forms and answering

follow-up questions pertaining to the information they provide. For them, it is time spent in non-productive activity.

On the one hand, many businesses fail to appreciate the importance of statistical information in the government's planning and decision making processes. On the other hand, they fear the potential use that the government may make of the information – either at the aggregate or individual response level. They are wary of sharing their data with the Department as they do not distinguish between government agencies. When they provide data to the Department of Statistics, they believe they are providing it to the government and that all agencies have equal access to their individual responses. Note that this is not a problem unique to the Bahamas. Most national statistical organizations must somehow address this problem.

Furthermore, Bahamian businesses likely have not benefited from the statistical output from the department in their own decision processes. It has been a long period since the department has been in a position to publish its establishment industry data for the use of its respondents.

Recent studies by other National Statistical Organizations have uncovered widening gaps between the terminology used by the business community and terminology used in their questionnaires. While the Bahamian Establishment survey questionnaires are relatively basic, they do need to be revised to reflect a more professional collection. Any and all gaps must between business accounting and the terminology in the questionnaire be eliminated so that business can easily link their information to the information requested and thereby reduce the amount of non-response, accelerate the production of, and improve the quality of the estimates.

The Department of Statistics is sensitive to all of the above 'feelings' and concerns. Through its partnership initiatives, it will work to inform respondents of the importance of their participation and the protection that their responses are provided under the Statistics Act. It will actively review, with input from the business community, the content and structure of the Establishment Survey Questionnaire. The need for this review arises from the spotty and often complete non-response to the departments Establishment questionnaires.

Many of the larger businesses use automated processes to manage their businesses financial and production activities. It is incumbent on the department to take advantage of information already in machine-readable form and facilitate electronic reporting of information for its surveys. With an improved IT architecture, this could become a reality in the near future.

2.1.1.3 Production Processes

Establishment Survey statistics are the result of a series of processes that massage, correct/complete and compile information provided by respondents. Over time and

particularly for surveys that have been in place for a long period, these processes become entrenched as the 'best way' to process survey information quite independent of their efficiency (or lack thereof).

Unlike household surveys, business respondents do not contribute equally to the final results. The larger the business, the larger its contribution and the more critical it is to follow-up for its non-response. While this has been the process in the past, field officers have been reluctant to impute for the larger businesses and have held the survey open longer in hopes of getting more responses in.

The production processes for the Establishment Survey are being revised with a view to getting the preliminary results out more quickly. The objective is to provide the capacity to calculate estimates at two or possibly three different times during the survey cycle. This will mean that while the survey can be kept open in order to coax out reluctant respondents, the reluctant respondents will not hamper a production of early results. 'Snapshots' or 'peels' of data from the database will be taken for preliminary results while the survey will remain open.

The method of questioning used for follow-up will be adjusted as the first survey peel nears. Respondents who have not yet completed their survey questionnaires will be asked to give an impression of the progress they are making with their business and this will be registered on their files. Automated processes will then make use of whatever information is available for the individual respondents at the time to impute for missing data and complete non-response. Note that this quick peel information should not hamper the ongoing efforts of officers to garner complete responses. Rather, it will allow for a quick, imputation for missing information and a quick tabulation of results to feed preliminary information demands. These preliminary results will appear with data management information describing the quality of the estimates with measures such as imputation rates, coverage rates and coefficients of variation.

In the shorter term, with respect to the estimates for 2003, a manual version of this process will be implemented. Imputation will be the first priority to completing the sample information. The field officers and field staff often have good knowledge of the individual businesses for which they are responsible. They will be asked use that knowledge along with a healthy dose of judgment to impute for missing data or non-responses. Then with a complete sample, estimates will be generated. This will not reduce the overall follow-up effort, but will defer it to a slightly later period allowing for earlier estimates.

For 2004, mail-out will occur as in previous years with a few minor adjustments. By the time the 2004 survey is closed in September 2005, the survey peel, imputation and estimation process should be available to provide those key first estimates. Note that the informatics infrastructure to support these processes can only be in place if an upfront investment is made for the redesign. As well, the existing vacancies on the establishment survey team will need to be filled with priority. A detailed plan for the Redesign will be presented in an independent document.

c) Dissemination

As noted earlier, the wealth of information collected by the Establishment Survey is underutilized by Bahamian businesses. Few, if any have based their business decisions on information provided by the Department of Statistics. Consequently, it is difficult for businesses to rationalize the investment that is required on their part to complete the survey. This in turn weakens the survey estimates and delays the statistical process. In an effort to improve relations with businesses and to make the link between their response and the statistical product, specialized tabular information will be developed and included as part of the 2005 mail out package.

2.1.2 International Merchandise Trade Statistics

While trade in goods and services contributes a net 14%, the merchandise trade component is substantial – contributing between 30% and 40% of GDE. Furthermore, merchandise trade data are used in the estimate for private final consumption expenditures that contributes a whopping 69% to GDE, as well as in the estimate for capital formation, which contributes another 36% to GDE. Hence, the merchandise trade series warrant special attention as a key pillar of the GDE. The sustainability of GDE estimates is directly dependent on the sustainability of the merchandise trade series in both current and constant prices.

2.1.2.1. International Merchandise Trade: Current Prices

The source for current price merchandise trade data – Customs Declarations – is good and relatively reliable. There are nevertheless drawbacks when using regulatory or administrative information for statistical purposes. Care and attention to important statistical information – commodity classifications, country of origin/destination codes and quantity information is of secondary importance to the Customs administration. Consequently, less attention is given to these variables as presented on the customs declarations and in the electronic data files of the Customs Administration – although it should be noted that as the Customs Administration introduces new risk management features into its procedures, the quality of these data in the electronic files provided to the department will improve substantially.

Nevertheless, the Department of Statistics must filter the information for the purposes of producing accurate and reliable trade statistics. To ensure that the trade data are quickly and efficiently filtered, beginning with the data for 2004, the department has put in place electronic screening mechanism to reject only those records with apparent and significant errors. As a consequence, the department will be able to speedily correct minor data errors automatically and give personal attention to those instances that will provide a maximum benefit to the final trade estimates. The quality of the trade estimates is expected to improve as a result of these automated data processing methods.

An immediate benefit of these procedures will be a return to the regular production and publication of quarterly trade estimates within 6 weeks of the end of the reference quarter for the year 2005, and eventually the production of monthly trade statistics within 45 days of the end of the reference month for 2006.

2.1.2.2. International Merchandise Trade: Constant prices

The current approach to determine constant dollar value for merchandise trade flows uses two main price indexes.

- The first, the United States commodity Export Price Index, is used to deflate Bahamian Imports.
- The second is a Bahamian index of Commodity Exports based on the major selected domestic produce exported. These include solar salt, Barcardi Rum, Crawfish, Sponges, Queen Helmet Shells, Avocado Pear, Grapefruit, Lemon, Lime, tomatoes, cucumber, stone crab claws and conch meat.

Given the important role merchandise imports play in the Bahamian economy, it is fitting that a true Bahamian import price index be developed and used.

Attempts to construct such an index in the past were hampered by the Standard International Trade commodity classification. It did not prescribe a quantitative a unit of measure for all commodities. This limited the capacity to estimate a unit price for use in constructing price indexes. The situation has improved substantially in the past year as the Customs Department has adopted the Harmonized System for trade classification (where every commodity has a quantity measure) and initiated an on-line system to process trade declarations. Among other benefits, the new system requires that valid commodity codes be assigned and that quantity information be provided. The department is ready to resume its attempts to construct an import price index. It will seek assistance from CARTAC in this matter.

2.1.3 Other Data Series

2.1.3.1. Household Budgets/House Expenditures

As noted in Table 1, the largest contributor to GDE is Private Final Consumption Expenditure, contributing close to 70% of GDE. An important component of this figure is household expenditures. The most recent Consumer Expenditure Survey was conducted for reference year 1994.

A more recent survey conducted by the Department of Statistics that collected information on household expenditures was the 2001 Bahamas Living conditions Survey. It is important to note that while the primary purpose of the living conditions survey was not oriented to developing a profile for household expenditures, this survey did contain

substantive expenditure detail and therefore, the results are under review as a potential source for expenditures or expenditure patterns.

The importance of having regular reliable measures of household expenditures, and the patterns of those expenditures cannot go unnoticed. There are two very critical uses of such information: the GDE estimates in current dollars and the GDE estimates in constant dollars.

Clearly, the current dollar GDE estimates would be well served by a regular survey of household expenditures as they contribute directly to the Private Final Consumption measure.

Household expenditure measures are also essential to update the basket of goods upon which the Consumer Price Index is based. The CPI is an important current indicator of the price fluctuations facing consumers as well as a key deflator of many component series of GDE and GDP. The rapid evolution of consumer purchasing patterns and preferences could quickly render the CPI irrelevant. A few important examples follow.

- a) Since 1994 households have increasingly adopted the Internet as a tool for communication and as an information source. Internet service provision fees are not accounted for in the basket weights.
- b) The use of cellular/ telephones in lieu of landline service is a rapidly growing phenomenon. Whereas in the past households simply did without because the costs of land based service was prohibitive, the availability of technology and lower rates has opened an unprecedented opportunity for households to access both telephone and worldwide web services. These services were simply not available in 1994 and hence are not accounted for in the CPI basket weights.

It is therefore critical that a regular consumer/household expenditure survey appear high on the list of priorities for the Department.

2.2 Preliminary Estimates

The annual preliminary estimates for GDP are derived from detailed provisional estimates for the previous year(s) and a series of current indicators. The current indicators are carefully paired with the historical series based on a reasonable expectation that the indicators over time-share common movement. Current and constant dollar projections are carried out separately, often using different indicators to project the series. A complete list of the pairings for current and constant price estimates is provided in Annex 1.

The infrastructure to support preliminary GDP estimates is heavily dependent on its current indicators. It is therefore useful to examine these indicators, their respective sources and sustainability. In Annex 2, a table identifies each indicator, its frequency, source, relative contribution to total GDP (\$current and \$ constant), its quality and its

sustainability. The following table summarizes the findings from the Annex 2 table, highlighting the vulnerabilities of the preliminary estimates.

Indicator	Source	Contribution to GDP	Issue
Salt and aragonite production	Private corporations	1%	Dependence on a private data source
Rum production	Private corporations	5%	Dependence on a private data source
Marine Landings of fish & Lobster	Ministry of Fisheries	1%	Data for the reference year can arrive too late for estimation process
Crop and livestock production	Ministry of Agriculture		Data for the reference year can arrive too late for estimation process
Insurance Data	Registrar of Insurance		Data are not consistently recorded and tabulated

For the most part, the feeder systems to the production of the preliminary estimates are in place and with some careful monitoring, can sustain production. The major weakness arises from dependence upon private companies and government agencies that for a variety of reasons do not provide the data when needed. Special efforts will have to be made to strengthen the relations with these data suppliers to ensure smooth production processes. The plans to engage outside organizations (government and private sector) in partnerships with the Department of Statistics are outlined in the following section.

Section 3: Partnerships

While the responsibility for gathering and publishing the country’s prime economic statistics resides with the Department of Statistics, it is incumbent on the department to keep to a minimum the response burden it places on businesses as it gathers its input information used in the production of these statistics. As a result, the department looks to alternative sources for key information as a means to minimize the direct collection of information from businesses. Since the Statistics Act gives the department the authority to access administrative information for statistical purposes, it then rests with the department to negotiate access with the regulatory and administrative authorities.

The network of sources upon which the department depends is extensive. For example, it receives from the Customs Department information on merchandise trade transactions from its customs clearance administrative forms. The following table provides some of the major government data suppliers.

Administrative Source/Agency	Form/administrative document	Statistical Data
Customs	Customs clearance forms	Merchandise trade
Central Bank and the Treasury Department	Regulatory reporting schedules	Banking output
Registrar of Insurance	Regulatory reporting schedules	Insurance output
Ministry of Tourism	Survey data	Tourism statistics
Departments of Agriculture and Fisheries	Regulatory reporting, inspections and survey data	Agricultural production Fisheries Production
Department of the Treasury		Government production
Ministry of Works	Regulatory reporting	Building permits information
The Ports Authority	Regulatory reporting	Cargo Tonnage
Ministry of Trade and Industry	Regulatory reporting	Number of Businesses
Bahamas Electricity Company	Financial statement information	Revenues and services
Bahamas Water and Sewage corporation	Financial Statement information	Revenues and services
Bahamasair	Financial statement information	Revenues, passenger miles
Batelco	Financial Statement information	Revenues and services
Gaming Board	Financial Statement information	Revenues and services
Hotel Corporation	Financial Statement Information	Revenues and services

Ever increasing demands for new or better quality statistical information requires the department to search out new and better data sources from which to extract information for statistical purposes.

At the same time, the department must be sensitive to the statistical information needs of its data suppliers, as well as finding ways to minimize their response burden. For this reason, the department has initiated a series of visits/consultations with its suppliers;
exploring ways to expedite response and reduce response burden
engaging the organizations in discussions about the use to which the information is put and
identifying potential information needs of the respondents.

In essence, the aim is to achieve quid pro quo arrangements upon which to base partnerships.

A similar initiative is envisioned for the private sector, with the department reaching out to business associations and organizations in an effort to garner support for its surveys and to promote the use of statistical information by these organizations. The first phase will be launched as part of the business Establishment Survey Redesign.

Section 4: Future Development

4.1 Supply and Use Tables

To strengthen the SNA data, it has been recommended by the IMF that Supply and Use Tables (S/U) be developed for The Bahamas. Supply and use tables offer a unique tool that serves both statistical and analytical purposes to:

- a) check the consistency of statistics on the flows of goods and services through the economy – particularly since they are derived from a variety of different sources,
- b) cross check the GDP, GNE and other important relationships within the SNA and
- c) assess the productivity of the sectors of the economy and explore relationships such as total output requirements from any given change in final demand.

S/U tables require a substantial amount of detail about all activities and sectors of the economy. The first iteration of supply and use tables for The Bahamas should be derived from an economy wide or all-industry census of business activities including detailed information on inputs and outputs and salaries and wages.

The Establishment survey is currently limited to non-financial industries. Although there are industries in the financial sector for which regulatory agencies have sufficiently extensive detail to support supply and use tables, there are others for which no suitable administrative data source exists. For these latter industries – such as Insurers, Finance Leasers etc., - serious consideration should be given to covering them in an Economic Census, and subsequently in the Establishment Survey on a regular basis. For the former set of industries, it will be necessary for the department to negotiate access to the micro information with the regulators.

Subsequent iterations of the supply and use tables would be based on projections driven by current annual survey information until such time as another Economic Census can be mounted. The response burden associated with economic censuses, the cost and the structural changes in the economy will factor in the decision process to determine the frequency with which to hold the economic censuses.

Supply and Use tables trace the flow of goods. Once the Department is closer to being able to establish its first supply and use tables, it will need to reference a household expenditure survey on a regular basis to reflect the important commodity use by the household sector.

4.2 Re-basing the Constant Price Series

The 1993 SNA recommends in Para 16.76 that *constant price series have to be re-based in the course of time. In general, constant price series should not be allowed to run for more than five or at the most ten years without re-basing....* It also recognizes that the choice of the base period is a delicate one and may be especially complex.

The Bahamian SNA currently uses 1991 as the base year for its constant price series. Many of its constant price series are derived by extrapolating a base year value added by an output volume index. According to the 1993 SNA , Para 16.70, this approach is *an acceptable second-best solution when the data available are not sufficiently reliable and robust to permit the use of double deflation.* In other instances, the Bahamas are forced to use *a third-best solution by estimating movements of value added at constant prices on the basis of the estimated volume changes of the inputs to the industries.*

Clearly, among the necessary requirements to strengthen the Bahamian SNA, is the need not only to update the base year for the SNA in constant prices, but at the same time to improve the methodology by developing more appropriate deflation series or price indexes. In other words, it is necessary to move the component methodology from the third best to second or first best options.

The plan to develop supply and use tables should also address constant price series. The 1991 SNA, Para 15.161, states *that the supply and use tables are the most complete consistent framework for constant price estimation* and provide not only independent measures of prices and volumes, but as well important numerical consistency checks. They provide the framework for double-deflation.

Section 5. Release Schedule

The Department of Statistics wishes to follow the recommendations of the IMF GDDS with respect to the dissemination of its GDE and GDP estimates. The recommendations are:

- That data releases follow a regular and publicized procedure
- That revisions follow a regular and transparent schedule.

The following table presents a generic release and revision schedule for GDP and GNE estimates.

	Calendar Year (Y) Release					
Reference Year	March Y-1	March Y	March Y+1	March Y+2	March Y+3	March Y+4
Y-4	Revised	Revised	Revised	Historical	Final	Final
Y-3	Provisional	Revised	Revised	Revised	Historical	Final
Y-2	Preliminary	Provisional	Revised	Revised	Revised	Historical
Y-1		Preliminary	Provisional	Revised	Revised	Revised
Y			Preliminary	Provisional	Revised	Revised
Y+1				Preliminary	Provisional	Revised
Y+2					Preliminary	Provisional
Y+3						Preliminary

Rows in the table are interpreted as follows, using the 5th row and the reference year 2004 in the example.

For the reference year Y=2004, (entry column 1, row 5) and reading across row 5 of the table, the first estimate to be made publicly available for the reference year 2004 will occur in March 2005, or March Y+1. That release will represent a **preliminary** estimate. Recall from section 2.2 Preliminary Estimates are estimates based on current indicators and are subject to the largest revisions.

The next release for reference year 2004 will occur in March 2006, or March Y+2. That release will represent a provisional estimate. Provisional estimates benefit from the first or early results from the Establishment Surveys for the reference year. While these results reflect the responses to date, they are not complete in the sense that there are still many outstanding responses yet to be received and tabulated. Consequently, provisional GDP estimates are potentially subject to some large revisions.

Then, in subsequent years, the GDP releases for reference year 2004 will consist of **revised** estimates, benefiting from final Establishment survey results for the reference year. Only exceptional adjustments are reflected in the March 2008 or March Y+4 releases for reference year 2004.

In fact the reference year 2004 estimates would only be subsequently revised in the face of an Historical revision. Historical revisions would logically coincide with Economic Census results, when results appropriate for use in benchmarking production related aggregates would be available.

Historical revisions would entail the opening of earlier years' estimates to reflect;

- adjustments to correct errors that were discovered subsequent to the revised estimates,
- conceptual changes to the data series
- benchmarked feeder series.

The need to include Historical revisions has yet to be determined. It is mentioned here to remind readers that estimates are potentially always subject to revision.

The columns of the table illustrate, for any given March release, the vintage of the releases made available at that time. Again, using Y=2004 in the example, in March 2004, there is no GDP estimate for the year 2004 since the year is not yet completed². However, in March 2004, the department would have released, preliminary estimates for 2003, provisional estimates for 2002, and revised estimates for earlier years.

Note that this generic table supposes that in the month of March following the reference period, preliminary and provisional results can be made available. For the moment, that is the target that the Department of Statistics is aiming to meet. Nevertheless, this target may have to be pushed forward somewhat – to perhaps April or May – depending on resources and data availability. Most other National Statistical Offices tend to release results later than March.

² At this time, the Department of Statistics has chosen not to make projections for future periods. Rather, it provides sufficient current indicators to allow data users to formulate their own assumptions and calculation their own results.

Annex 1: Indicators Used to Estimate GVA of Industrial Origin

Table: Indicators Used to Estimate Gross Value Added of Industrial Origin			
Industry/Account to be Estimated	Current Price Indicator	Constant Price Indicator	Other Indicators
Agriculture	# Employees in industry	Exports of Food and live animals	
Fishing	Lobster tails landed (Value)	Marine landings (QTY)	# Employees in industry
Mining	Quantity of aragonite produced # Employees in industry	Quantity of salt Produced	
Manufacturing	Bicardi rum quantity data	# Employees in industry	Bicardi rum sales data Aquapure production of water
Electricity	Megawatt sales	Megawatt sales	
Water	Water /sewage revenues	Water consumption in Gals.	# Employees in industry # Households
Construction	Value of permits	Number of permits	Value of completions
Wholesale Trade	Import taxes	Commodity imports	
Retail Trade	Commodity imports	Commodity imports	Import taxes
Hotels	Tourism expenditure	Visitor nights stopover	
Restaurants	Tourism expenditure	Tourist days	Population growth Employment in industry
Land Transport	Cargo landed	Stopover days	
Marine Transport	Cargo landed	Cargo landed	
Services allied to marine transport	Cargo landed	Cargo landed	
Air transport	Air passenger fares	Passenger miles	
Services Allied to Air transportation	Cargo landed	Passenger miles	
Storage	Import of oil & Bunker C	Employment in storage	
Communication	Telephone service revenue	Charge minutes - Batelco	

Banks	Bank employment	Implicit deflator	
Insurance	Insurance fee paid to government	Employment in industry	Published financial statements used to augment missing information
Real Estate	BLCS & Pop. estimates	Rental Index (CPI)	
Other Business Services			
Public Admin & Defense	Gov't expenditure	CPI –all items	
Education (Private)	Gov't expenditure	Education index CPI	Student/teacher ratio
Education (Public)	Gov't expenditure	Education index CPI	
Health (Private)	Medical Index(CPI)	Medical Index (CPI)	
Health (Public)	Employment in health	Medical Index (CPI)	
Other community Social and personal Services	(LFS) employment	Stopover visitor nights	
Other Net Indirect taxes	Gov't revenue	Implicit deflator	
FISM	Gov't expenditure	Implicit deflator	
Indirect Taxes (less Subsidies)	Gov't revenue	Implicit deflator	

Annex 2: Indicator Sources and Sustainability Impact

The following table identifies the indicators used to produce components of preliminary estimates, and the properties of the indicators. Note that the indicators are not necessarily used directly in GDP preliminary estimates but rather are used to estimate a component. Some indicators are used to estimate components of the current GDP, others only components of the constant GDP while others are used in both. The contributions column indicates the relative contribution to the total GDP of the components being estimated.

Data quality is a subjective combination of the data in terms of: reliability, consistency, and coherence.

R: Reliability – is a measure of the data being consistently available when requested.

C1: Consistency – is a measure of the data being produced on an ongoing basis using the same definitions and methodology

C2: Coherence – is a measure of how well the data represent phenomenon in the economy

Each of the 3 data quality attributes is assigned a grade from 1 to 5 with 5 indicating a good or positive rating and 1 indicating a poor or negative rating.

Indicator	Frequency	Source	Contribution to total GDP (\$ current)	Contribution to GDP (\$ constant)	Data Quality Assessment	Sustainability impact
Employment by industry	A	Labor Force Survey Department of Statistics	9%	8%	R: 4 C1: 5 C2: 4	Sustainable
Exports, imports (Quantities and values) and import taxes by commodity	Q	Merchandise Trade Statistics Department of Statistics	12%	19%	R: 4 C1: 5 C2: 4	Sustainable
Building Permits: number, value Building completions: Number, value	Q	Ministry of Works Department of Statistics	6%	8%	R: 5 C1: 5 C2: 5	Sustainable
Salt and aragonite production (& sales)	A	Morton Ltd., Macona Ltd.		1%	R: 2 C1: 3	Needs to be improved

Tourism Expenditures	A	Ministry of Tourism /Central Bank	11%			C2: 3	Sustainable
Visitor stop-over nights and stop-over days (tourist days?)	Q	Ministry of Tourism /Central Bank	10%			R: 5 C1: 4 C2: 4 (88%)	Sustainable
Cargo Landed by mode (Quantity and value)	A/Q	Ports Authority	4%	1%		R: 4 C1: 3 C2: 3	Sustainable
Marine landings of fish and lobsters	A	Department of Agriculture and Fisheries	1%	1%		R: 2 C1: 2 C2: 3	Needs to be improved
Rum and water production (quantity)	A	Bacardi Ltd., Aquapure	5%			R: 2 C1: 3 C2: 3	Needs to be improved
Rum and water sales	A	Bicardi Ltd., Aquapure					
Air passenger fares and air passenger miles	A	Bahamasair	2%	2%		R: 4 C1: 3 C2: 3	Sustainable
Electricity sales and quantities	A	Bahamas Electricity Co.	3%	2%		R: 2 C1: 3 C2: 3	Sustainable
Water consumption quantity and sales	A	Bahamas Water & Sewage Corp.	1%	.4%		R: 4 C1: 3	Sustainable

Telephone charge-minutes	M		Batelco	4%		5%		C2: 3 R: 4 C1: 4 C2: 3	Sustainable
Implicit Deflator	A		Department of Statistics			(20)%		R: 4 C1: 4 C2: 3	Sustainable
Insurance fees paid to government	A		Treasury Department	3%				R: 4 C1: 4 C2: 4	Sustainable
Consumer Price Index & component indexes	A		Department of Statistics	1%		45%		R: 5 C1: 5 C2: 5	Sustainable
Expenditures on health & Education			Department of the Treasury / Central Bank	17%		3%		R: 4 C1: 4 C2: 4	Sustainable

Annex 3: Technical Assistance Mission in National Accounts (2003-2004)

The following table was taken from the report on the Technical Assistance Mission in National Accounts (4-8 October 2004) under the auspices of the Caribbean Regional Technical Assistance Centre. The report, dated October 21, 2004, was prepared by Howard Murad and Chandrakant Patel.

The table summarizes the Action Plan for Improving the Compilation of National Accounts. To aid the reader in linking the plans with the chapters of this document, a column has been added to indicate the cross references within this document.

Activities	Outputs/Measurable indicators	Time Frame	Resource Requirements/Comments	Cross Reference within Sustainability Document
A. Annual GDP Estimates				
<p>Compile a new series of annual GDP estimates by industry and expenditure categories at current and constant prices with a new base year 2001.</p> <p>The current series uses 1991 as the base year. The new series should begin with the year 1989 and should conform to the extent possible with the 1993 SNA</p>	<p>New annual series of GDP by industry and expenditure categories at current and constant 2001 prices covering 1989 and onward period is compiled and published.</p>	<p>Third Quarter 2001</p>		<p>Section 4 – future Development</p>

Activities	Outputs/Measurable indicators	Time Frame	Resource Requirements/Comments	Cross Reference within Sustainability Document
<p>Review procedures to regularly update the business register. Compile a business register in preparation for conducting an economic census; and</p> <p>Review survey forms to identify separately information by product on output, intermediate consumption, imports, possible final consumption and exports. To the extent possible the products and industries should identify elements related to tourism to facilitate the compilation of a tourism satellite account.</p>	<p>Business register is updated on a regular basis and establishments are assigned appropriate 5-digit ISIC Rev 3 classifications</p>	<p>End 2004 for updating the business register</p>	<p>There is a permanent need for updating the register</p> <p>Updating the business register is critical to carrying out further improvements to the data.</p>	<p>Section 2.1.1.1 – The Business Frame</p> <p>Section 2.1.1.2 - Questionnaires</p>
<p>The Department of Statistics (DOS) should establish a data revision and dissemination schedule with respect to release of the annual national accounts estimates</p>	<p>A data dissemination schedule is developed</p>	<p>Third Quarter of 2004.</p>	<p>The development of a data dissemination schedule is an important step in establishing credibility of the DOS.</p>	<p>Section 5 – Release Schedule</p>
<p>Improve compilation through the development of a supply and use table (SUT) and the related cross-classification by industries and sectors (CCIS). An initial exercise and framework should be for the year 2001. At the same time, a framework should be established for compiling a tourism satellite account. The</p>	<p>A supply and use table is developed using appropriate activity and product classifications.</p>	<p>Work on the SUT should commence by November 2004.</p>	<p>CARTAC will provide assistance with the SUT through the recruitment of an expert to work with the SDO. A first step, however, will be assessing available information on</p>	<p>Section 4 – Future Development</p>

Activities	Outputs/Measurable indicators	Time Frame	Resource Requirements/Comments	Cross Reference within Sustainability Document
SUT should be updated and made comprehensive when the proposed economic census data are available.			products and industries. The implementation of this step, including the development of a tourism satellite account, will require the addition of two staff members.	
B. Consumer price Index (CPI)				
The basket for the current CPI is based on information from a household budget survey (HBS) conducted in 1994/95. There is urgency in conducting a new HBS to update the weights of the consumer basket.	A HBS is conducted.	Planning for the HBS should commence in the first quarter of 2005.	Conducting a HBS will require additional resources (budget support and equipment).	Section 2.1.3.1 – Household Budgets/Household Expenditures
C. Export-Import Price Indices (XMPI's)				
Develop a quarterly XMPI conforming to international best practices.	A quarterly XMPI conforming to the international best practices is published on a timely basis.	Planning for developing the XMPI should commence in the second quarter of 2005.	Major constraints to initiating work on this program relate to lack of sufficient resources (Staff and equipment). The DOS should consider establishing a price statistics unit that would be solely involved in	Section 2.1.2.2. – Merchandise Trade Statistics: Constant Prices

Activities	Outputs/Measurable indicators	Time Frame	Resource Requirements/Comments	Cross Reference within Sustainability Document
			developing and improving the price collection system. CARTAC may be able to assist the DOS in developing these indices.	
D. International trade statistics				
In collaboration with the Customs Department, develop a program to facilitate the measurement of trade statistics directly from Customs files. The current DOS system of tabulating and processing Customs data is a major drain on scarce resources.	Data for imports and exports are collected and disseminated with a lag of 3 months or less after the end of the reference period.	January 2005.	There are no major constraints to using Customs data. Customs is currently converting to a new system that will facilitate the production of trade statistics. Full installation of the system is expected to be completed in January 2005.	Section 2.1.2.1 – Merchandise Trade Statistics: Current Prices
E. Advance indicators of economic activity				
Develop a program that allows the government to gauge the level of economic activity during the year, before annual data become available. This step would facilitate the future compilation of quarterly GDP estimates.	Indicators are appropriate to estimating the level of economic activity.	Second Quarter 2005	The maintenance of a register of indicators that could be used for guidance on economic activity in the absence of national accounts data. These indicators would also enhance DOS' credibility	Section 2.2 – Preliminary Estimates

Activities	Outputs/Measurable indicators	Time Frame	Resource Requirements/Comments	Cross Reference within Sustainability Document
			if they were disseminated regularly in accordance with a dissemination schedule. CARTAC may be able to assist in developing a program of advance indicators.	