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1.0 INTRODUCTION

The ECCU's[1] fiscal situation has severely worsened since its strong performance in the 1990s. The overall fiscal deficit doubled to an annual average of 5.5 per cent of GDP[2] during the 2000s compared with the previous decade. This fiscal imbalance has been mainly attributable to the high growth in public spending and the fact that revenue growth has been minimal, especially given the depressed economic conditions over the period 2009 – 2012. Total public expenditure has risen from a low of just over 24.0 per cent of GDP in 1990 to a high of about 33.0 per cent in 2008. While total public expenditure, as a per cent of GDP, has increased gradually since the recent financial crisis, the share of capital expenditure to GDP has fallen steadily from 7.3 per cent in 2007 to 5.0 per cent in 2012. Conversely, current expenditure's share of GDP has followed a largely undisturbed upward trajectory since the financial crisis, from 20.6 per cent to 24.6 over the 5-year period. Interestingly, real GDP growth has fallen from 5.5 per cent to negative growth of 0.2 per cent over the same period. Seemingly, as public sector expenditure in the ECCU increases, a corresponding decline in growth is observed.

The relationship between public expenditure and economic growth has been an important one to fiscal policy makers for a long time, but has become of greater importance in the current economic climate where fiscal prudence is seen as an essential part of the impetus to stimulate growth. To date, spending in the ECCU has been largely pro-cyclical, a move which is yet to hasten the recovery of an economy with low to stagnant growth levels. Against the backdrop of this seemingly untamable problem, theory and empirics on the effects of increasing public sector spending on macroeconomic performance have been mixed.

One school of thought proposes that expanding the size and scope of public sector activities will promote economic growth. Arguments for that theory propose that increasing public spending will improve a country's ability to facilitate business activity through the provision of

[1] The Eastern Caribbean Currency Union is made up of 8 Caribbean Territories: Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines.

[2] Gross Domestic Product as defined and detailed in the ECCB Aremos Database.

infrastructure, human capital and the creation of an environment that is both healthy and provides the necessary regulation to allow for increased economic activity. The result, they argue, is a welcomed "crowding-in" of private investment. The lesson of Sweden, however, where the public sector accounts for over 50.0 per cent of GDP, seems to have shown otherwise, as statistics of economic growth paint a rather dismal picture. This among other real world examples have given fuel to proponents of the other side who argue that large public sector spending does the very opposite. In this regard, it is argued that high levels of public spending distort the economy and inevitably leads to crowding out of private enterprise, misallocation of resources and the disincentives to savings and investment.

The apparent dichotomy of thought seems to arrive at some consensus in the thought that the relationship between public spending and economic growth is in fact nonlinear. This consensus is predicated on the aggregation of the arguments for either side. It explains that while government can enhance growth through the provision of public goods that the market would otherwise not invest in, the beneficial effects on economic growth diminish as the size of government increases beyond a certain level. Also, as the public sector's size relative to that of the private sector increases beyond a certain level, it begins to take on activities that are more and more suited for private production. Furthermore, the increase in taxes necessitated by the increase in government size serves as a disincentive for workers to invest and engage in activities that enhance productivity.

Despite this consensus, the World Bank Report (2005) points out that, government expenditure in the Caribbean has approached the level of industrialized states rather than other small developing states. However, the difficulty encountered in adjusting spending downwards must be viewed within the context of the recent international crisis, the frequent destruction of capital by hurricanes, and crippling infrastructural gaps that pervade the region.

With this constraint highlighted, the issue of expenditure productivity becomes an important one, especially given the dominant role of the government in the ECCU economy. There is a well-defined, seamless, link between expenditure productivity and the relationship between

public expenditure and growth. Often, waste and inefficiency, which have long been thought to exist in the ECCU territories, can serve as the proverbial noose around the neck of economic growth. As the data shows, growth has remained low, even in the presence of rising public expenditure. The World Bank has cited that the main reasons for this are unproductive public investments, poor service delivery and over-staffing at lower levels of the public sector, owing to the status as the employer of last resort of the region's government. There are substantive arguments that increasing public sector expenditure productivity can create the fiscal space necessary to achieve key growth goals by loosening budget constraints.

This paper proceeds as follows. Section II reviews the existing literature of public sector size and efficiency. Section III introduces stylized facts about the public sector in the ECCU along with a modest description of the data. Section IV presents the theoretical and econometric methodology and section V presents the results. Section VI provides policy recommendations and conclusions, based on the analysis.

2.0 LITERATURE REVIEW

Many studies have sought to determine the threshold size at which government ceases to impact positively on economic growth. Gwarthey, Lawson and Holcombe (1998) in their work perform a cross sectional analysis on data from the OECD countries as well as a larger data set on 60 countries, ranging from developing to developed status to ascertain the impact of the changing size of the public sector on growth. The authors present compelling evidence that excessively large government negatively impact economic growth. They argue that where government extends beyond the core functions that foster growth, such as public infrastructure provision, security and institutions, the state exerts negative pressure on growth. The authors also found that the five fastest growing economies in the world from 1980 to 2005 had total government expenditures as a per cent of GDP averaging 20.1 per cent, which is much less than half the average of OECD countries. According to the paper, if government expenditures as a share of GDP in the United States had remained at their 1960 level, real GDP in 1996 would have likely been $9.16 trillion, much higher than the actual figure of $7.64 trillion.

These findings are further strengthened by Chobanov and Mladenova (2009) who found that the optimum size of the public sector (defined as expenditures as a share of GDP) is no greater than 25.0 per cent at the 95 per cent confidence level for the OECD member countries. A model in the mold of Scully (2003) was estimated using data for the period 1970 to 2007, the authors begin with the BARS Curve[3] which describes the relationship between government size and economic growth and an inverted U-curve (as government size moves from zero it is growth enhancing, however, as government becomes larger the returns diminish and may eventually become negative). Chobanov and Mladenova carry out analysis on a second model which presents a quadratic equation following Vedder and Gallaway (1998), Pevcin (2004) and Davies (2008), to test the relationship between general government consumption expenditures and economic growth. From this, they find that the share of government consumption that maximizes economic growth is 10.8per cent. In most countries, government consumption as a share of GDP exceeds this threshold by several per cent points.

Afonso and Tanzi (2005) computed public sector performance (PSP) and public sector efficiency (PSE) indicators for 23 OECD countries. The authors used seven sub indicators which made up their two broad indicators of public sector performance. The first category of indicators is termed opportunity indicators and measures the performance of each country's public sector in terms of administration, education, health, infrastructure and economic performance. The second category of indicators, termed the Musgravian indicators, assess public sector performance in allocation, distribution and stabilization. They then measure the input and output efficiency of public sectors across countries through the use of a non-parametric production frontier analysis. The study concluded that there were significant differences in the PSP and PSE scores across the different countries.

Odawara (2010) investigates this apparent nonlinear relationship between public sector size and economic performance by least squares estimation of a threshold model. Odawara uses data from five OECD countries from 1970 through to 1980 to test for the presence of

[3] Depicted in Figure A the appendix, a BARS curve illustrates the theoretical relationship between government size and growth.

threshold effects and estimates the threshold value of government size. He finds that there is strong evidence that the relationship between government size and growth is indeed nonlinear. More specifically, Odawara finds that the different classifications of government expenditure affect growth differently. Accordingly, the government consumption threshold was estimated at 19.6 per cent for the United States, 19.0 per cent for Australia, 24.2 per cent for Canada, 14.7 per cent for Japan and 26.8 per cent for the United Kingdom. Government investment was estimated to have a threshold value of 3.0 per cent for the United States, 2.3 per cent for Australia and Canada, 8.5 per cent for Japan and 1.4 per cent for the United Kingdom. The study also found that where government expenditure as a share of GDP exceeded these levels, economic growth was adversely affected.

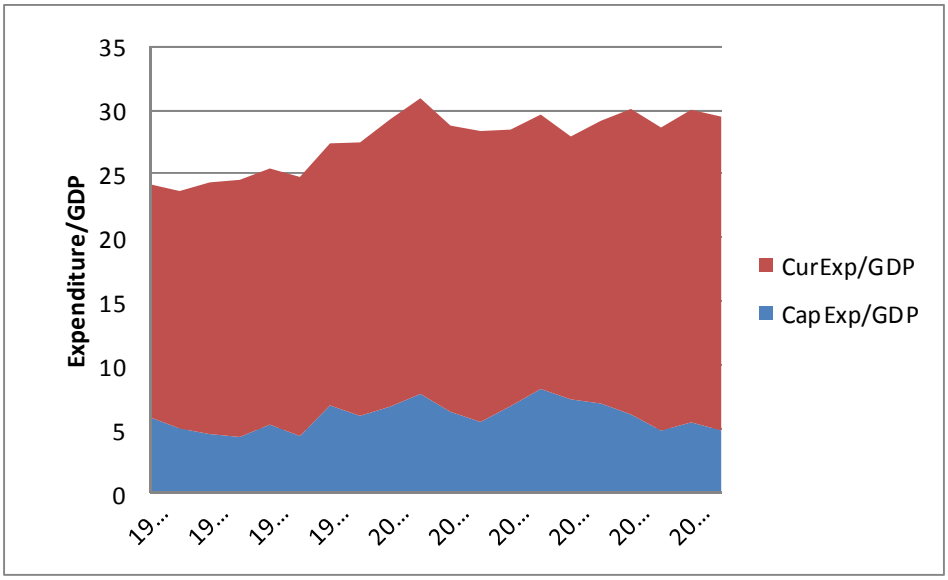
3.0 DATA DESCRIPTION

To derive the growth maximizing size of the public sector, public spending as a per cent of GDP, generally over 1980-2013 and in some cases 1993-2012 is used. This is used as an independent variable in a regression where real GDP over the period is the dependent variable. Table A in the appendix provides summary statistics on the variables used in the regression. In terms of public sector performance and efficiency, indicators from the Eastern Caribbean Central Bank and the World Bank are used to compute performance and efficiency scores. These indicators are labeled and summarized in table B(1-4) of the appendix.

3.1 Stylized Facts and Summary Statistics

In terms of population (626,136, est 2010), the ECCU member states are relatively small in comparison to the other Eastern Caribbean states and the rest of the world. The public sector in the region has historically been characterized as too large, a phenomena which some have argued is by choice rather than necessity. Current and capital expenditure have, since the recent financial crisis, followed different paths with the former trending upwards while the latter is on the decline. Figure 1 details the composition of total expenditure.

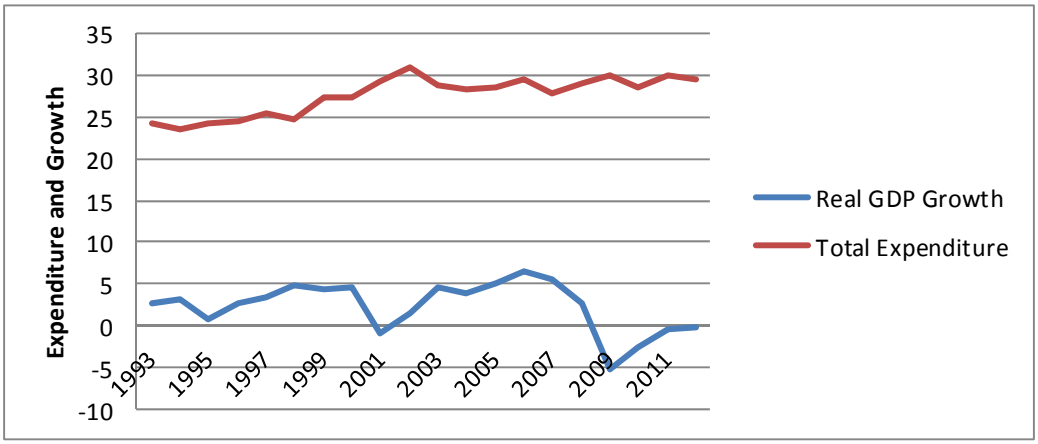
Figure 1: ECCU Total Expenditure by Classification



Source: ECCB

Total expenditure has been on a relatively steady upward trajectory over the years climbing to 29.0 per cent of GDP in 2012. While capital expenditure has averaged around 5.0 per cent of GDP, the share of current expenditure in total expenditures has gradually increased over the years. Economic growth has fluctuated over the period, but the general movement has been downwards over the period. These relationships are a mirror of what exists at the country level.

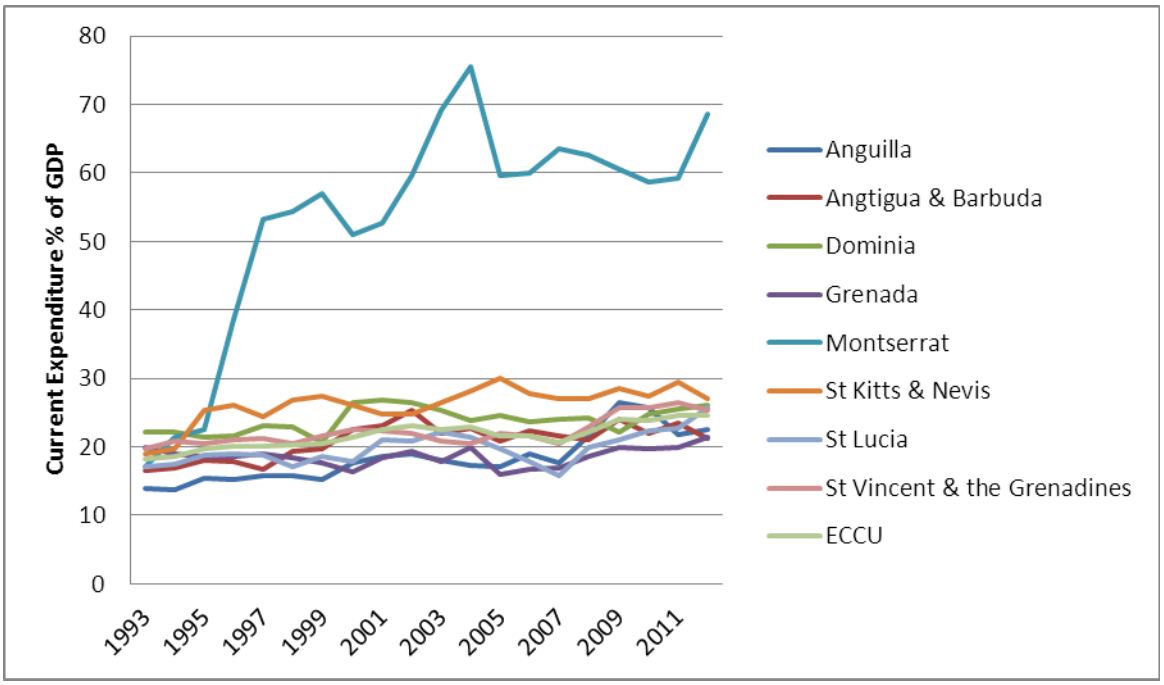
Figure 2: ECCU Expenditure and Growth



Source: ECCB

Figure 3 illustrates the movement of the share of current expenditure to GDP for the 8 ECCU territories from 1993 to 2012.

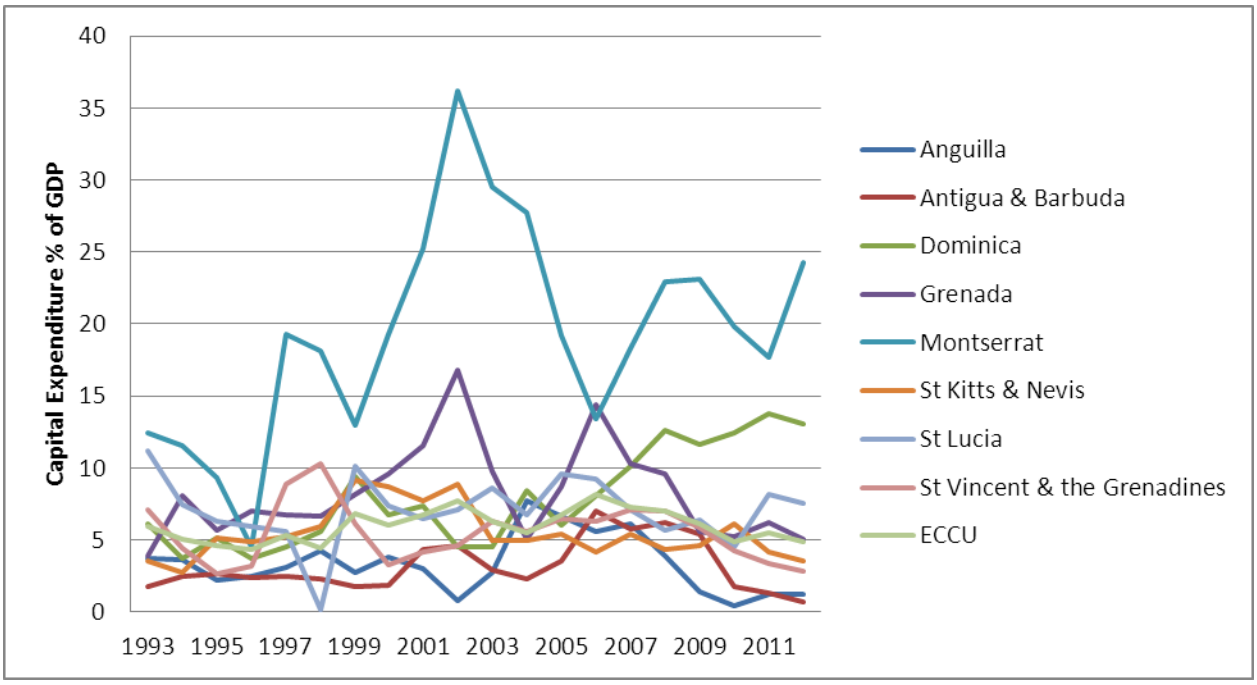
Figure 3: Current Expenditure 1993-2012



Source: ECCB

Montserrat has been a clear outlier over the years with current expenditure to GDP average 53.3 per cent over the period. The remaining countries have had less variation in current expenditure to GDP and have experienced similar levels of spending over the years. Anguilla, Antigua and Barbuda, Grenada and Saint Lucia have the lowest average current expenditure of the period at approximately 20.0 per cent of GDP. Figure 4 shows the corresponding movement of the share of capital expenditure over the same period.

Figure 4: Capital Expenditure 1993-2012

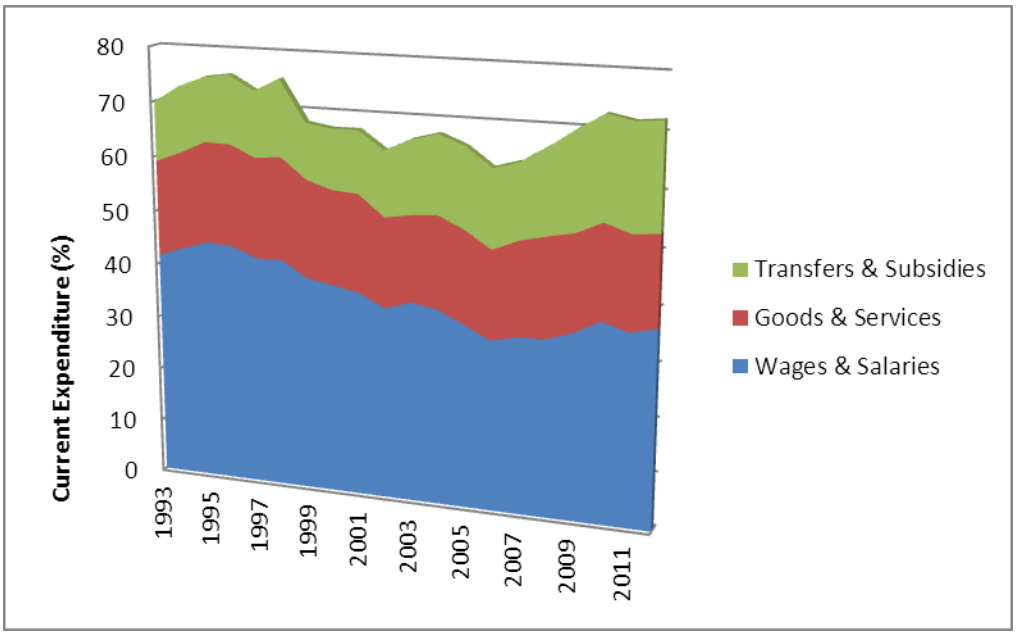


Source: ECCB

Montserrat again stands as an outlier with average capital expenditure to GDP over the period of 19.2 per cent. Antigua and Barbuda and Anguilla recorded the lowest average capital expenditure shares of 3.1 and 3.3 per cent over the period respectively. Capital expenditure has fluctuated over the period but has largely remained between 4 and 10 per cent for the remaining countries.

Returning to ECCU level data, the decomposition of current expenditure by expenditure category reveals some interesting features of public sector spending (Figure 5).

Figure 5: ECCU Current Expenditure by Major Categories



Source: ECCB

The region's governments have been labeled as the employer of last resort for the island states. This, some have argued, comes with high costs which include inefficiency, over-staffing and poor quality of service. Wages and salaries account for roughly 40.0 per cent of expenditure over the years. This represents the largest category of current expenditure for the ECCU. In the event that the ECCU public sectors are operating above their optimal size, public sector employment may be an area where there may be significant scope for adjustments that may yield improvements in the effectiveness and output of public spending.

4.0 METHODOLOGY

The paper is based on applied research, involving the use of regression and statistical techniques to analyze the dynamic relationship between the size of the public sector in the

ECCU, measured as the share of public expenditure to GDP, and macroeconomic performance. The relationship will be estimated using data from 1983 to 2012 for the 6 independent ECCU member countries. With regards to public sector performance and efficiency, performance indicators with be used to create an index of public sector performance across the six independent ECCU territories and Barbados. The index with then be used to compute efficiency scores for the countries using expenditure over the 2000s.

4.1 Optimum Public Sector Size

Following Scully (1998, 2003), Chabonav and Mladenova (2009) Chao and Grubel (1997), a model that estimates the size of the public sector that maximizes growth is developed. The model predicates that the production function is Cobb Douglas and takes the form:

$$\frac{Y_t}{Y_{t-1}} - 1 + g - a(G_{t-1})^b(1-\tau)^c\,(Y_{t-1})^{c-1} \qquad (1)$$

Where, growth is a function of the public and private sector activity. Y is real GDP, G is total government spending and τ is the total tax rate in the economy. If we assume that governments favour a balanced budget, then $G = \tau Y$ and the tax rate is measured as the share of government spending to GDP (our measure of public sector size). We can now substitute for G_{t-1} in equation (1) to obtain:

$$1 + g = a\tau^b(1-\tau)^c(Y_{t-1})^{b+c-1} \qquad (2)$$

Equation (1) is differentiated twice with respect to the tax rate. The first differential is positive while the second differential is negative. This postulates that in the growth equation, government spending increases growth at a decreasing rate until it reaches a maximum point beyond which growth is lowered by additional spending.

By taking the first differential of Y with respect to τ and setting it equal to zero we arrive at our growth maximizing point is given by:

$$\tau^* = b/(b+c) \qquad (3)$$

By imposing the restriction that the parameters must sum to one, we can simplify the equation to:

$$1 + g = a\tau^b(1-\tau)^{1-b} \qquad (4)$$

Econometric estimates of this equation have historically shown high collinearity between the dependent and independent variable. Scully (1996) corrects for this by diving both sides of equation by $(1-\tau)$ to obtaining equation (5).

$$\left[\frac{(1+g_i)}{(1-\tau_i)}\right] = a\left[\frac{\tau_i}{(1-\tau_i)}\right]^b \qquad (5)$$

Taking the log of both sides of equation (5) the model to be estimated is arrived at:

$$ln\left[\frac{(1+g_{it})}{(1-\tau_{it})}\right] = lna + bln\left[\frac{\tau_{it}}{(1-\tau_{it})}\right] \qquad (6)$$

The parameter b can now be directly observed from the regression, as the coefficient on the second term on the right hand side of equation (6). The model will be estimated as a panel, with fixed and random effects, and country time series over the period 1983 to 2012 for the six independent ECCU countries. From the model, i indexes the country $(i = 1, \ldots, 6)$ and where the panel analysis is performed t indexes time $(t = 1983, \ldots, 2012)$.

4.2 Public Sector Performance

In the formulation, I consider a country i with j areas of government performance which aggregately determine the performance of the country's public sector (PSP) so that:

$$PSP_i = \sum_{j=1}^{n} PSP_{ij} \qquad (7)$$

Where $PSP_{ij} = f(I_k)$ and I is the performance indicator.

A change in public sector performance is thus:

$$\Delta PSP_{ij} = \sum_{i=k}^{n} \frac{\partial f}{\partial i_k} \Delta i_k \qquad (8)$$

Where, an improvement in performance is determined by improvements in the values of the socio-economic indicators. The socio-economic indicators which will be used for the computation are the opportunity indicators and the standard Musgravian[4] indicators, each with their sub indicators of PSP.

Following Afonso and Tanzi (2003), the opportunity indicators considered are administration, education, health and infrastructure; each with their various sub-indicators. The administrative performance indicator is an aggregated measure of the effectiveness of government, the quality of regulation, the effectiveness of the rule of law and the control of corruption. These variables are selected to capture the public sector's performance in securing property rights, administering justice and providing an effective regulatory environment for business and social prosperity. The health performance indicator is a composite of infant mortality and life expectancy. These variables are selected to capture the quality of and access to a country's public health service. The education performance indicator is measured by secondary and primary school enrollment. These are thought to be the best measures of the quality of a country's education systems as well as access to education for citizens. Public infrastructure is the final opportunity indicator chosen. This indicator is a composite of access to water and electricity, road density and mobile and internet subscriptions. These sub-indicators reflect the quality of communication and transportation in facilitating access to markets. The existence of these factors ensures functioning markets and secure property rights in a society where opportunities are available to all (Afonso and Tanzi, 2003). The Musgravian indicators measure the outcomes of the interaction with and reactions to the market process by government. Income distribution and equality is measured by the distribution indicator which

[4] According to Richard Musgrave, the government has three economic functions, which include stabilization, distribution and allocation

comprises the Gini index as a sub-indicator. Stability as an indicator measures the outcome of the stabilization objective of government and is measured by the coefficient of variation of growth and the standard deviation of inflation. Economic performance measures the outcome of the allocative efficiency of government activity.

The index is constructed from primary data for 2011 or the latest possible data where available. For some of the indicators, ten year averages are used. Where observations vary more widely, such as inflation and growth, the 10 year average is sufficient to capture long term trends and structural changes. Afonso and Tanzi explain that because we are interested in structural changes and not annual fluctuations, using the latest observation and 10 year averages are sufficient. In computing the various indicators, each sub-indictor is normalized with the average for each indicator set equal to 1. The values for each country are then calculated relative to the average to obtain a score for the indicator. Where higher numbers indicate a negative outcome (example the Gini coefficient and coefficient of variation of GDP) the inverse of the indicator is used. Each indicator contributes 1/7 to the composite index.

4.3 Public Sector Expenditure Efficiency

The cost of achieving these performance scores can be assumed to be reflected in public expenditure as a share of GDP. Spending on wages and salaries, transfers and subsidies, and functional spending on health and education and capital expenditure are the relevant expenditures (PEX) used to weight the performance level achieved. The weighting of the PSP by public sector expenditure produces the public sector efficiency score (PSE). The PSE indicator for any country i is

$$\frac{PSP_i}{PEX_i} = \sum_{j=1}^{n} \frac{PSP_{ij}}{PEX_{ij}} \qquad (9)$$

Average expenditure over the 2000s will be used to compute the PSE as it is assumed that there is a lagged effect from spending on performance.

To compute the PSE index, spending in the categories mentioned was normalized across countries. The value for each country was again calculated relative the average and used to weight the PSP area for which spending is considered an input. Wages and salaries are used to form a ratio for efficiency in the performance of administrative duties of the public sector. Efficiency in health and education is measured using expenditure on health and education. Transfers and subsidies are used as a weighting to measure the efficiency of income distribution and equality. For infrastructure, the efficiency of capital expenditure is measured. For stability of economic performance, total public expenditure is used as the input for which efficiency will be measured as it is considered to be the input of the state in affecting stability and economic performance. All expenditures are expressed as a per cent of GDP (see table C4 in the appendix).

Deprins, Simar and Tulkens (1984) proposed the Free Disposal Hull (FDH) method which derives output and input efficiency scores relative to a calculated production possibility frontier. Here, the values for output (PSP) and input (total public sector expenditure) from the previous section will be used to rank the efficiency scores of each country. The countries that lie on the production possibility frontier are the most efficient for the input-output variable considered. The resulting efficiency scores are set between 0 and 1 where countries on the frontier are those that achieve an efficiency score of 1. FDH analysis is, in layman's terms, a measure of the wastefulness of public spending across countries. The input efficiency score tells how much less input a country could employ to achieve the same level of output as is currently obtained. On the other-hand, the output efficiency score tells how much more output a country should attain for the same level of input. The framework of the FDH is a relative one. Full efficiency is therefore imposed, by definition, on countries that appear on the frontier.

5.0 ESTIMATION AND RESULTS

The first empirical issue to be addressed is stationarity[5] or lack thereof of our variables. The Augmented Dickey-Fuller[6] and Phillips-Perron[7] test revealed that both variables were I(1). The variables are therefore differenced to make them stationary as non-stationarity can lead to spurious regression results.

As a first step, estimation of a panel data set is carried out. The data set features a balanced panel consisting of the largest 6 ECCU member countries for the time period 1993-2012. The data set is estimated as a panel in order to observe a value for tau (τ), our optimal public sector size, accounting for heterogeneity of the individual countries, and controlling for state-and-time-invariant factors, while adding more variability to the dataset. Such are the benefits of using panel data. Once the panel data is estimated through fixed effects and random effects procedures, we are able to infer through the derivation of the growth maximizing level of tau in equation (3), the optimal size of the public sector at the ECCU level. Table 1 details the results of the estimation. The results are reported with Eicker-Huber-White's standard errors which are robust to heteroskedasticity[8] and autocorrelation[9] ensuring that our results are asymptotically unbiased.

[5] A stationary process (or strict(ly) stationary process or strong(ly) stationary process) is a stochastic process whose joint probability distribution does not change when shifted in time or space.

[6] In statistics and econometrics, an augmented Dickey–Fuller test (ADF) is a test for a unit root in a time series sample. It is an augmented version of the Dickey–Fuller test for a larger and more complicated set of time series models.

[7] Jump to: navigation, search In statistics, the Phillips–Perron test (named after Peter C. B. Phillips and Pierre Perron) is a unit root test. That is, it is used in time series analysis to test the null hypothesis that a time series is integrated of order 1

[8] In statistics, a collection of random variables is heteroscedastic if there are sub-populations that have different variabilities from others.

[9] Autocorrelation is the cross-correlation of a signal with itself.

Table 1: Estimation Results (Dep. Variable: $\Delta \ln g$[10])

Variable	Random Effects	Fixed Effects
Constant	-0.0006172	-0.0006157
	(0.0046786)	(0.0047765)
$\Delta \ln \tau$[11]	0.2100051***	0.209914***
	(0.0319924)	(0.033432)
R-sq		
within	0.2651	0.2651
between	0.6551	0.6551
overall	0.2658	0.2658
# of obs	119	119

***-Statistically significant at the 1 per cent level. Standard errors in parentheses

The results of the random and fixed effects regression appear fairly consistent with each other. The Hausman test was performed to ascertain whether there were any statistically significant differences between the two. The results indicate that there was not. For both regressions, we observe the coefficient on our variable of interest ($\Delta \ln \tau$) to be .21. This indicates that our parameter b from equation (6) is 21 per cent. Thus, empirical results show that the optimal or growth maximizing size of the public sector, at the ECCU level, is the size at which the public sector consumes 21 per cent of GDP. This result indicates that all ECCU countries are on the negatively sloped portion of the BARS curve and is significant at all conventional levels.

[10] This variable's true form is the following expression: 

[11] This variable's true form is the following expression: 

However, since each member of the ECCU administers fiscal policy individually due to the variation in the type and extent of the constraints they face, it may be worthwhile to estimate each country's optimal public sector size based on its own empirical data. Individual time series regressions were therefore performed for each of the 6 largest member countries. The results appear in table 2.

Table 2: Estimation Results (Dep. Variable: Δlng)

Variable	Antigua and Barbuda	Dominica	Grenada	St Kitts and Nevis	Saint Lucia	St Vincent and the Grenadines
Constant	-.0026090	-.0027641	-.0054039	.0003605	-.0007924	-.0019962
	(.0113704)	(.0091884)	(.0111019)	(.0090227)	(.0102789)	(.0083242)
Δlnτ	.1775414**	.393735***	.2243202***	.2477225***	.1814519***	.2558266***
	(.0790795)	(.0934725)	(.0605274)	(.0492993)	(.055939)	(.0753382)
R-sq	.1798	.5107	.3372	.4832	.2804	.2845
# of obs	25	19	29	29	29	31
Time Series	1987-2012	1993-2012	1983-2012	1983-2012	1983-2012	1981-2012

, *-Statistically significant at the , 5 and 1 per cent level respectively. Standard errors in parentheses

These results are presented with robust standard errors as before. The results indicate that the optimal size of the public sector in Antigua and Barbuda is the smallest of all ECCU independent territories at 17.7 per cent. This is followed by Saint Lucia with a growth maximizing size of 18.1 per cent. Interestingly, these two represent the largest economies in the ECCU over the period. Grenada, Saint Kitts and Nevis and Saint Vincent and the Grenadines maximise growth when the size of the public sector is 22.4 per cent, 24.7 per cent and 25.6 per cent respectively. Dominica stands as an outlier to the average size of the optimal

public sector, with its growth maximizing public sector size estimated at 39.3 per cent. The reason for its disparity with the average optimal size across the other territories may be numerous. From a statistical standpoint, far fewer data points were available for estimation of the regression and that may have contributed in some way. For this reason, the results of the panel regression may be strongly preferred. From the economic side, this may be explained by the fact that the nature of the island's topography makes the cost of developing and maintain growth-enhancing infrastructure relatively high, evident in the fact that Dominica's capital expenditure to GDP averages 7.8 per cent relative to the 5.8 per cent average for the other islands. Perhaps it is a combination of the two factors because, as Chobanov and Mladenova pointed out, fewer data points lead to an upward bias of the results. The results of the time series regression are significant at the 5.0 per cent level for five of the six countries. The Ramsey Regression Specification Error[12] test reveals that the model is free from the omitted variable problem.

5.1 Public Sector Performance Results

The results of the public sector performance computation are presented in table 3. Since the analysis is a comparative one, Barbados is included in the study along with the ECCU 6 to gain perspective, as Barbados is considered the most developed of the independent Caribbean territories. The total for each indicator is the average of each sub indicator and the composite index is then an average of each indicator.

[12] The Ramsey Regression Equation Specification Error Test is a general specification test for the linear regression model. More specifically, it tests whether non-linear combinations of the fitted values help explain the response variable.

Table 3: Public Sector Performance Index (2011)

	Opportunity Indicators				Standard "Musgravian" Indicators[13]			
Country	Administration	Education	Health	Infrastructure	Distribution	Stability	Economic	Total PSP
Antigua[14]	1.17	0.99	1.34	1.18	0.89	0.90	1.21	1.10
Barbados	1.62	1.05	0.77	1.17	1.19	1.01	0.94	1.11
Dominica	0.73	1.02	0.96	0.88	1.16	1.14	1.15	1.00
Grenada	0.36	0.97	0.99	0.97	1.05	0.84	0.78	0.85
St Kitts[15]	0.98	0.97	1.33	1.02	0.95	0.89	1.09	1.04
St Lucia	1.10	0.98	0.87	0.88	1.00	1.19	0.96	1.00
St Vincent[16]	1.03	1.02	0.75	0.89	0.77	1.02	0.87	0.91
Average	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Leewards[17]	1.08	0.98	1.33	1.10	0.92	0.90	1.15	1.07
Windwards[18]	0.81	1.00	0.89	0.91	0.99	1.05	0.94	0.94
ECCU	0.90	0.99	1.04	0.97	0.97	1.00	1.01	0.98

The above serves to measure performance by quantifying the level of output from the respective public sectors. The results of the seven performance indicators confirm that while there are differences in public sector performance across countries and country groupings, the differences are not by any means extreme. The overall performance of all seven countries ranges from 0.85 in Grenada to 1.11 in Barbados. This suggests that all the countries fall within 15% of the average performance. Barbados (1.11) has the top performing public sector among the countries considered, while Saint Vincent and the Grenadines (0.91) and Grenada

[13] Each indicator contributes $1/7$ to the Public Sector Performance Index

[14] Represents Antigua and Barbuda

[15] Represents Saint Kitts And Nevis

[16] Represents Saint Vincent and the Grenadines

[17] Consist of performance for two representative Leeward countries, Antigua and Barbuda and Saint Kitts and Nevis

[18] Consist of performance for four Windward countries, Dominica, Grenada, St Lucia and St. Vincent & Grenadines

(0.85) receive the lowest performance scores. These two countries are the only two to record below average performance, though not by a large margin. With regard to performance in the individual indicators, Barbados records the best performance in administration (1.62), education (1.05) and distribution (1.19). Antigua showed the best performance in Health (1.34), infrastructure (1.18) and economic performance (1.21), while Saint Lucia (1.19) recorded the top performance in economic stability. Grenada recorded the poorest performance in administration (0.36), education (0.97), stability (0.84) and economic performance (0.78). Barbados's performance in Health (0.77) was the lowest, while Dominica (0.88) received the lowest PSP score in infrastructure. Saint Vincent and the Grenadines recorded the lowest PSP performance score in income distribution (0.77). Overall, Barbados outperforms the ECCU as it recorded a PSP score of 1.11 compared to the ECCU's 0.98. The Windward Islands' PSP (0.94) was also eclipsed by that of the Leeward Islands (1.07).

5.2 Public Sector Expenditure Efficiency

Efficiency is measured by comparing the PSP to the expenditure used to achieve it. The cost of government activities is reflected in the various expenditure categories. The expenditure in these categories is considered as inputs to public sector production, which is captured by the PSP scores. Public sector efficiency scores are computed as ratios of PSP to the amount of public expenditure (government spending as a per cent of GDP). Table 4 features the PSE scores for Barbados and the ECCU member countries for each of the seven indicators and the overall PSE index.

Table 4: Public Sector Efficiency Indicators (2011)

	Opportunity Indicators				Standard "Musgravian" Indicators[19]			
Country	Administration	Education	Health	Infrastructure	Distribution	Stability	Economic	Total PSP
Antigua[20]	1.24	1.58	1.47	1.88	0.99	1.00	1.34	1.36
Barbados	1.63	0.69	0.61	1.51	0.58	0.94	0.87	0.99
Dominica	0.65	1.29	1.05	0.68	1.16	1.02	1.03	0.98
Grenada	0.44	1.13	0.85	0.66	1.40	0.90	0.83	0.89
St Kitts[21]	0.90	1.15	1.76	1.13	1.49	0.80	0.98	1.17
St Lucia	1.16	0.89	0.69	0.80	1.33	1.30	1.05	1.03
St Vincent[22]	0.96	0.81	0.99	1.06	0.85	1.09	0.92	0.95
Leewards[23]	1.07	1.36	1.62	1.51	1.24	0.9	1.16	1.27
Windwards[24]	0.80	1.03	0.90	0.80	1.18	1.07	0.96	0.96
ECCU	0.89	1.14	1.14	1.04	1.20	1.02	1.03	1.06

The differences in efficiency are relatively large across the 7 countries compared to the differences in public sector performance, with scores ranging from 11 per cent below average to 36 per cent above average. Antigua and Barbuda (1.36), Saint Kitts and Nevis (1.17) and Saint Lucia (1.03) received the highest efficiency scores. This indicates a high level of public sector performance relative to the inputted expenditure. Grenada (0.89) and Saint Vincent and the Grenadines (0.95) received the lowest efficiency scores. With regard to the individual indicators, Antigua and Barbuda recorded the highest efficiency scores in education (1.58), infrastructure (1.88) and economic performance (1.34). Barbados received the highest efficiency score in public sector administration (1.63), while Saint Kitts and Nevis recorded

[19] Each indicator contributes $1/7$ to the Public Sector Performance Index

[20] Represents Antigua and Barbuda

[21] Represents Saint Kitts And Nevis

[22] Represents Saint Vincent and the Grenadines

[23] Consist of performance for two representative Leeward countries, Antigua and Barbuda and Saint Kitts and Nevis

[24] Consist of performance for four Windward countries, Dominica, Grenada, St Lucia and St. Vincent & Grenadines

the highest efficiency scores in health (1.76) and income distribution (1.49). Saint Lucia performed very well in its efficiency in maintaining economic stability, receiving the highest score in that indicator. Grouping the countries according to geography reveals that the Leeward Islands (1.27) are more efficient at utilising public expenditure than the Windward Islands (1.06). The ECCU as a country grouping proved to be more expenditure efficient than Barbados, recording a score of 1.06 to Barbados' 0.99.

Caution must be taken in the interpretation of these results. In as much as the indicators attempt to measure public sector performance, they are limited in the scope of what the sub-indicators do capture. If we observe the performance of Barbados' health sector according to the PSP, the figure appears a bit alarming given that Barbados has a relatively well developed health sector. Although these results are quite similar to that of Seerattan (2010), who found that Barbados had the poorest PSP score in health among a group of countries (Bahamas, Jamaica, Suriname, Malaysia and Trinidad and Tobago), a case can still be made that some key areas of performance in the health sector are not captured adequately in the two sub-indicators. Simply measuring performance in the health sector as an aggregation of life expectancy and infant mortality is rather crude and may fail to capture several other aspects of public health output. Those two sub indicators may be heavily influenced by factors other than the quality of public services in health. In addition, several other factors, though they may be difficult to quantify, may serve as apt measures of output from public services in the health. In the unique case of Grenada, the purpose of the index is not to account for historical factors that may contribute to poor performance of the public sector. Grenada's performance is quite likely as a result of its recent history with natural disasters that may have crippled several sectors in the island.

Initial endowments are another important factor in determining how well a public sector is performing. Even in cases where for example in the last 10 years, one country's sector may have been out-performing another, the PSP index measures performance at 2011. The Leewards islands which have been service oriented for quite some time would therefore have been, prior to the 2000s, more endowed with public sector outputs. It is therefore not

mysterious that they are outperforming their Windward Island counterparts. Furthermore, islands like Dominica are at an inherent disadvantage in areas such as infrastructure owing to the fact that the topography of the country makes developing and maintaining infrastructure rather difficult. This is evident in Dominica's low (0.88) infrastructure rating. Saint Vincent's performance in the area of distribution of wealth was expected. Although the reality of income distribution on the island may be slightly less discouraging, the effects of its relatively large shadow economy, if formally measured, would likely mean that income distribution would overestimate any disparities. The IMF in a 2008 report found that the size of the shadow economy in St Vincent & the Grenadines was 51.0 per cent of GDP, the largest of all the islands.

With Regard to efficiency within the ECCU, there is a large disparity between the Windward and Leeward Islands. This is not entirely surprising for reasons similar to those mentioned for the difference in public sector performance. Barbados' poor efficiency score is largely caused by its poor performance in health and distribution. Furthermore, Barbados' expenditure on education, when used to weigh performance and compute efficiency, may overstate inefficiency, as a significant portion of Barbados' expenditure on education goes towards tertiary education through tuition payments for all its citizens at the University of the West Indies. The PSP indicators include no sub-indicator for the measurement of tertiary education and so efficiency in education for Barbados may be grossly understated. The country's poor performance in income distribution efficiency is not unexpected as the spread of income is relatively identical among ECCU member countries, while Barbados' expenditure in terms or transfers and subsidies is more than twice that of the ECCU. There are interplays between spending and performance across sectors that may be overlooked in an analysis of this methodology. To gain a better idea of overall efficiency, it might be instructive to perform a more complex efficiency analysis with overall public sector performance and aggregate public expenditure, so as to capture the interplay between sectors and across spending categories.

5.3 Public Sector Efficiency Analysis

The Free Disposal Hull Analysis measures the input and output efficiency of public sectors across the seven countries to determine the "wastefulness" of public spending. A production possibility frontier shows the maximum attainable amount of output for a given level of input. For our purposes, a production possibility frontier is generated by plotting Public Sector Performance Scores (output) against total public spending as a per cent of GDP (input).

Figure 1 Production Possibility frontier

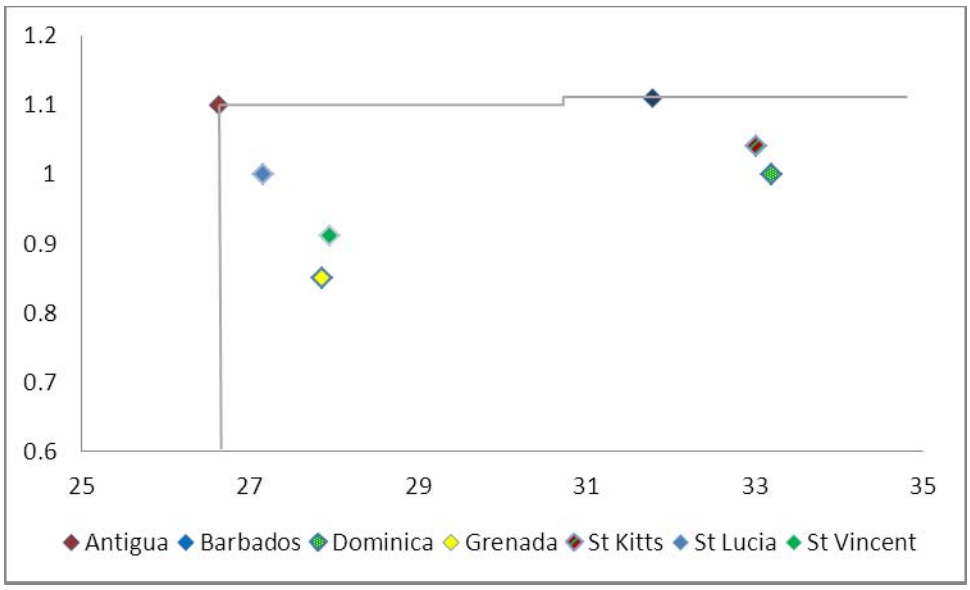


Figure 1 shows that the most efficient countries, where overall public expenditure is concerned, are Barbados and Antigua and Barbuda. In the case of Antigua and Barbuda the country achieves its level of public sector performance with less government expenditure. Although Barbados spends more than Antigua and Barbuda, it is efficient because it achieves a comparatively higher public sector performance score with that spending. With Barbados and Antigua and Barbuda on the frontier, the efficiency of the six other countries is determined by comparing their position relative to the frontier. Saint Kitts and Nevis is closest, while Grenada is the furthest to the frontier of all the countries that are positioned on the inside of the frontier. Saint Lucia is closer than Dominica to the frontier because it spends less to achieve the same level of performance, although the two countries have identical PSP scores.

This framework facilitates the calculation of input and output efficiency scores. Input efficiency scores indicate how much less a country could spend while attaining the same outcome or level of performance. Output efficiency scores on the other hand, indicates how much more output a country could achieve using its current level of public expenditure. Table 5 details the output and input efficiency scores for the 6 independent ECCU territories and Barbados.

Table 5: Efficiency Scores

	Input Efficiency		Output Efficiency	
Country	Score	Rank	Score	Rank
Antigua[25]	1.00	1	1.00	1
Barbados	1.00	1	1.00	1
Dominica	0.80	10	0.91	6
Grenada	0.96	4	0.78	10
St Kitts[26]	0.81	9	0.94	4
St Lucia	0.98	3	0.91	5
St Vincent[27]	0.95	5	0.83	9
Leewards[28]	0.89	8	0.98	3
Windwards[29]	0.93	6	0.86	8
ECCU	0.91	7	0.89	7

The input efficiency scores range from 0.80 in Dominica to 0.98 in Saint Lucia. Barbados and Antigua and Barbuda receive a score of 1.00 by definition since they are on the frontier. Room for input efficiency improvement is greatest in Dominica. With a score of 0.80, Dominica

[25] Represents Antigua and Barbuda

[26] Represents Saint Kitts And Nevis

[27] Represents Saint Vincent and the Grenadines

[28] Consist of performance for two representative Leeward countries, Antigua and Barbuda and Saint Kitts and Nevis

[29] Consist of performance for four Windward countries, Dominica, Grenada, St Lucia and St. Vincent & Grenadines

should be able to attain the same level of public sector output by using only 80 per cent of the money it is currently spending. This is equivalent to a cut in spending of 6.64 per cent of GDP from 33.19 per cent that the country averaged over the 2000s to 26.56 per cent of GDP. The implication here is that there is 20 per cent waste in inputs to public sector production. The situation is similar in Saint Kitts and Nevis, as the country could reduce spending from 33 per cent to 26.74 per cent of GDP while achieving the same level of performance. Relative the countries on the frontier, Saint Lucia (0.98) and Grenada (0.96) record the lowest input waste. Cutting spending from 27.1 and 27.9 to 26.6 and 26.7 respectively, the two countries should be able to achieve the same level of performance. Where the ECCU is concerned, there is, on average, input or spending waste of approximately 9 per cent.

The output efficiency scores range from 0.78 in Grenada to 0.94 in Saint Kitts. This means that given current public expenditures, public sector performance in Grenada is 78 per cent (or 22 per cent less) of what it could be if it were on the production possibilities frontier. St Vincent and the Grenadines also recorded a low output efficiency score with public sector performance at only 83 per cent of what it could be given current expenditures. St Kitts and Nevis, Saint Lucia and Dominica perform well relative to the two countries on the frontier with current output at over 90 per cent of what it could be if those countries were on the frontier. It is important to remember that these values are all relative to the countries on the frontier as they are the most efficient of the countries considered. Where Barbados and Antigua and Barbuda have scope for public expenditure savings, the countries not on the frontier may have even more possibilities for improved efficiency in absolute terms.

6.0 CONCLUSIONS AND POLICY RECOMMENDATIONS

The preceding analysis has significant implications for fiscal policy in the ECCU member countries. The average public sector spending across the 6 independent ECCU territories in the 2000s was 29.3 per cent of GDP. Empirical results from panel regression indicate that the growth maximizing level of public sector spending is 21 per cent of GDP. The results are not significantly different from individual time series regression for the countries as the optimal size ranged from 18 to 25.5 per cent, excluding Dominica (due to a shorter data set). The

result of the panel regression is preferred as it controls for heterogeneity and state and time-invariant factors for which time series does not control and may therefore be biased. The analysis indicates that the public sector is too large as it takes up over 9 per cent of GDP more than its growth maximizing size. This suggests that by cutting the size of the public sector, fiscal resources could be freed up for other purposes, including reducing the high debt levels of the region, while achieving positive growth. Table C(1) in the appendix presents the results of Pearson's correlation coefficient. It shows that there is a negative relationship between the distance from the optimal size of the public sector and real GDP growth. This means that the more the size of the public sector increases above the optimal size of 21 per cent of GDP, the greater the reduction in real GDP growth. ECCU governments should therefore, as much as possible, keep the size of the public sector closer to 21 per cent, the optimal level. With wages and salaries making up the largest share of current expenditure, there may be significant scope for a reduction in the number of public sector workers.

When this analysis is coupled with an examination of public sector efficiency, the argument is even more compelling. The input efficiency score for the ECCU was .91 indicating that there is 9 per cent waste in public expenditure relative to Barbados' position on the production possibilities frontier. Where this waste is effectively eliminated and public sector size cut to the optimal, the potential growth effects are significant. Figure B (see appendix) plots the relationship between input efficiency and size of the public sector. The plot shows an easily visible downward sloping graph. The implication here is that as the size of the public sector increases, the economies experience more waste from higher levels of inefficiency in public spending. This again further compounds the argument for a reduction in the size of the public sector in the ECCU. A more meticulous look at this relationship reveals that the two countries with the largest public sector spending to GDP, Dominica and Saint Kitts and Nevis, reported the lowest input efficiency scores while the countries with the smallest public spending to GDP ratios Antigua and Saint Lucia, record the highest input efficiency scores.

The relationship is further analysed using the Pearson's Correlation Coefficient. The results in table C(2) reveal that there is a strong negative relationship between input or spending

efficiency and the difference between average size of the public sectors of the period 1993-2012 and the optimal size of 21 per cent. This again provides evidence that where the ECCU countries operate with public sectors that are larger than the optimal size; there is greater waste of public expenditure. The argument for policy that seeks to confine the countries' public sector to the optimal size is therefore significantly strengthened by the efficiency analysis.

While viable conclusions can be drawn from the comprehensive analysis presented in this paper, it is important that one does not seek to interpret the results as fact. There are several limitations to empirical work which are not escaped in this paper. Other variables may have significant effects on real GDP growth that when added to the analysis may contribute more accurate results for interpretation and policy prescriptions. Also, the rigidity of the restrictions placed on the model may bias the results in a particular direction. It will serve well to consider the validity or applicability of these restrictions when considering policies on the basis of these results. Where public sector performance is concerned, it is worthwhile to note that the indicators considered may not cover all the relevant areas. Furthermore, the sub-indicators of performance may not be comprehensive: simply measuring infant mortality and life expectancy may be a too limited to indicate the performance of public services in health. Any interpretation of the results of expenditure and efficiency analysis must be made within the context of what the indicators cover, the strength and validity of the sub indicators used and the fact that not all expenditure categories are suitable indices. It is also worthwhile to stress that the results of the efficiency analysis are relative. Antigua and Barbuda, with its input and output efficiency score of 1.00 is not necessarily fully efficient. Simply put, it is the most efficient relative to other ECCU member states. Additionally, the contribution of initial endowments to performance may also be significant. Despite the limitations, and where caution is exercised in the interpretation, these results are strongly indicative of the optimality, performance and efficiency in the ECCU public sectors.

APPENDICES

Figure A: The BARS Curve

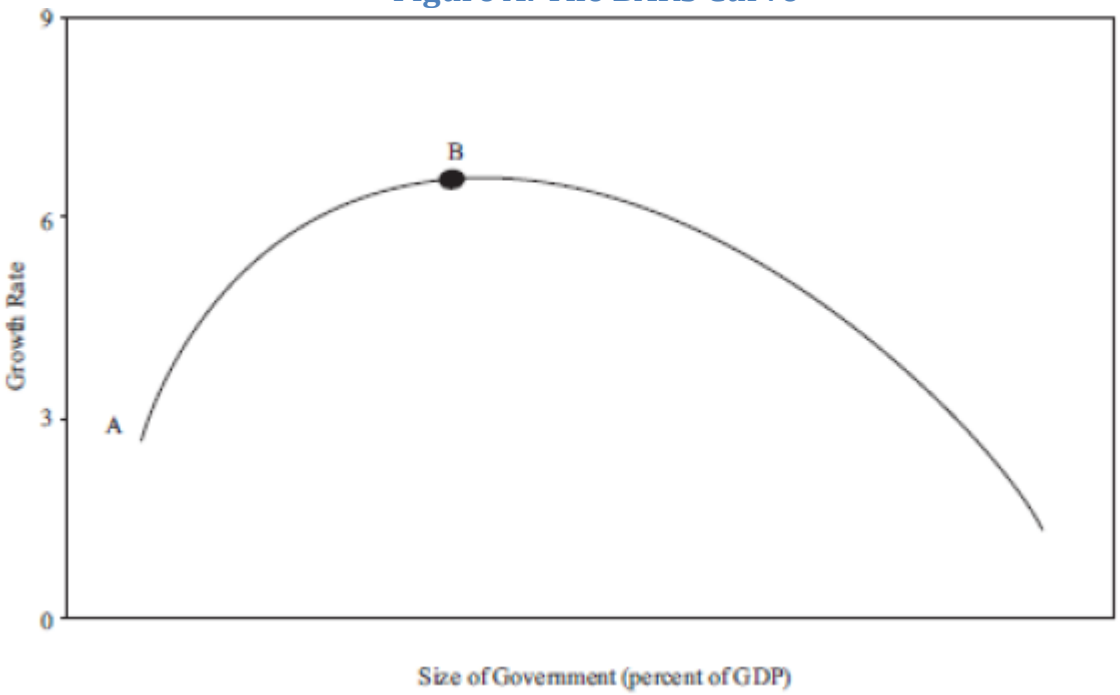


Table A (1) Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
year	20	2002.5	5.91608	1993	2012
Total Expenditure	20	27.63179	2.298935	23.65414	30.93055
Real GDP	20	9545.229	1574.728	7200.505	11999.77

Table B (2): Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
$\left[\frac{\tau_t}{(1-\tau_t)}\right]$	172	.3910774	.0983365	.2088344	.9263913
$\left[\frac{(1+g_t)}{(1-\tau_t)}\right]$	172	1.424993	.1647639	.2550158	1.957415
Year	198	1996	9.546041	1980	2012

Table B(1): Variables and Series

Variable	Sources, notes	Series
Government Effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such. World Governance Indicators (WGI) Project 1963-2011. World Bank	Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)
Regulatory Quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. World Governance Indicators (WGI) Project 1963-2011. World Bank	Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)
Rule of Law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. World Governance Indicators (WGI) Project 1963-2011. World Bank	Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)
Corruption Control	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. World Governance Indicators (WGI) Project 1963-2011. World Bank	Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)
Secondary School Enrollment	Based on WDI 2012	Enrollment ratio is the ratio of children of official school age based on the International Standard Classification of Education 1997 who are enrolled in school to the population of the corresponding official school age
Primary School Enrollment	Based on WDI 2012	Enrollment ratio is the ratio of children of official school age based on the International Standard Classification of Education 1997 who are enrolled in school to the population of the corresponding official school age
Infant Mortality	Based on WDI 2012	The number of infants dying before reaching one year of age, per 1,000 live births in a given year.
Life Expectancy	Based on WDI 2012	Life Expectancy
Acces to Water	International Renewable Energy Agency (2012) (http://www.irena.org/	Per cent of population with access to clean water

Access to Electricity	International Renewable Energy Agency (2012) (http://www.irena.org/	Per cent of population with access to electricity
Road Density	Based on WDI 2012	Density of Road Network. Km of road per 1000km squared
Mobile Subscriptions	Based on WDI 2012	Mobile subscriptions per 100 persons
Internet Subscriptions	Based on WDI 2012	Internet subscriptions per 100 persons
Gini Index	Human Development Report Several Poverty Assessments- CDB	The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a per cent of the maximum area under the line. Thus a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.
Relative Standard Deviation of GDP	Central Bank of Barbados and ECCB	Reciprocal Value based on GDP at constant prices 10 years average
Standard deviation of inflation	ECCB and Central Bank of Barbados	Reciprocal Value based on CPI 10 years average
GDP Per Capita	World Bank Statistics on GDP per capita	10 years average (% of GDP)
Economic Growth	World Bank Statistics on GDP growth	10 years average (% of GDP)
Total Public Expenditure	ECCB and Central Bank of Barbados	10 years average (% of GDP)
Wages & Salaries	ECCB and Central Bank of Barbados	10 years average (% of GDP)
Education Expenditure	ECCB and Central Bank of Barbados	10 years average (% of GDP)
Health Expenditure	ECCB and Central Bank of Barbados	10 years average (% of GDP)
Transfers & Subsidies	ECCB and Central Bank of Barbados	10 years average (% of GDP)
Capital Expenditure	ECCB and Central Bank of Barbados	10 years average (% of GDP)

Table B(2): Opportunity Sub-indicators

	Government Effectiveness	Regulatory Quality	Rule of Law	Corruption Control	Secondary Enrollment	Primary Enrollment	Infant Mortality	Life Expectancy	Access to Water	Access to Electricity	Road Density	Mobile Subscriptions per 100 persons	Internet Subscriptions per 100 persons
Antigua	0.48	0.63	0.96	1.31	85	89	6	76	92	100	2635.75	189	80
Barbados	1.46	0.61	1.04	1.76	89	95	18	75	100	100	3720.93	128	70
Dominica	0.61	0.24	0.62	0.74	85	94	11	76	95	95	1040	156	47
Grenada	0.22	0.26	0.1	0.44	84	87	10	74	94	99.5	3314.79	117	33
Saint Kitts	0.77	0.4	0.7	1.06	86	85	6	75	99	95	1473.08	153	76
Saint Lucia	0.86	0.46	0.74	1.24	85	87	14	77	96	98	1951.61	114	40
Saint Vincent	0.77	0.37	0.89	1.06	85	94	20	75	96	96	2125.64	121	39
Average	0.74	0.42	0.72	1.09	85.57	90.14	12.14	75.43	96	97.64	2323	140	55

Table B (3): Musgravian Sub-indicators

	Gini	Relative Std Deviation GDP	Average Inflation	GDP Per Capita	GDP Growth
Antigua	48	7.67	2.43	18914	2.04
Barbados	36	3.14	4.74	17683	1.09
Dominica	37	4.1	2.48	10163	3.25
Grenada	41	6.25	3.03	9539	1.76
Saint Kitts	45	4.44	3.72	15780	2.09
Saint Lucia	43	4	2.33	9686	2.52
Saint Vincent	56	3.7	3.46	9304	2.20
Average	42.85	4.39	2.99	13010	2.14

Table B(4): Expenditure Categories (% of GDP)

	Capital Expenditure	Transfer & Subsidies	Wages & Salaries	Total Expenditure	Health Expenditure	Education Expenditure
Antigua	4.12	4.44	9.67	26.63	4.93	2.71
Barbados	5.07	10.12	10.27	31.79	6.85	6.54
Dominica	8.41	4.89	11.63	33.19	4.961	3.40
Grenada	9.69	3.65	8.62	27.86	6.32	3.71
Saint Kitts	5.93	3.14	11.23	33.01	4.11	3.65
Saint Lucia	7.16	3.69	9.86	27.16	6.82	4.73
Saint Vincent	5.54	4.44	11.00	27.96	4.08	5.42
Average	6.56	4.90	10.33	29.66	5.44	4.31

Figure B: Input Efficiency and Public Sector Size

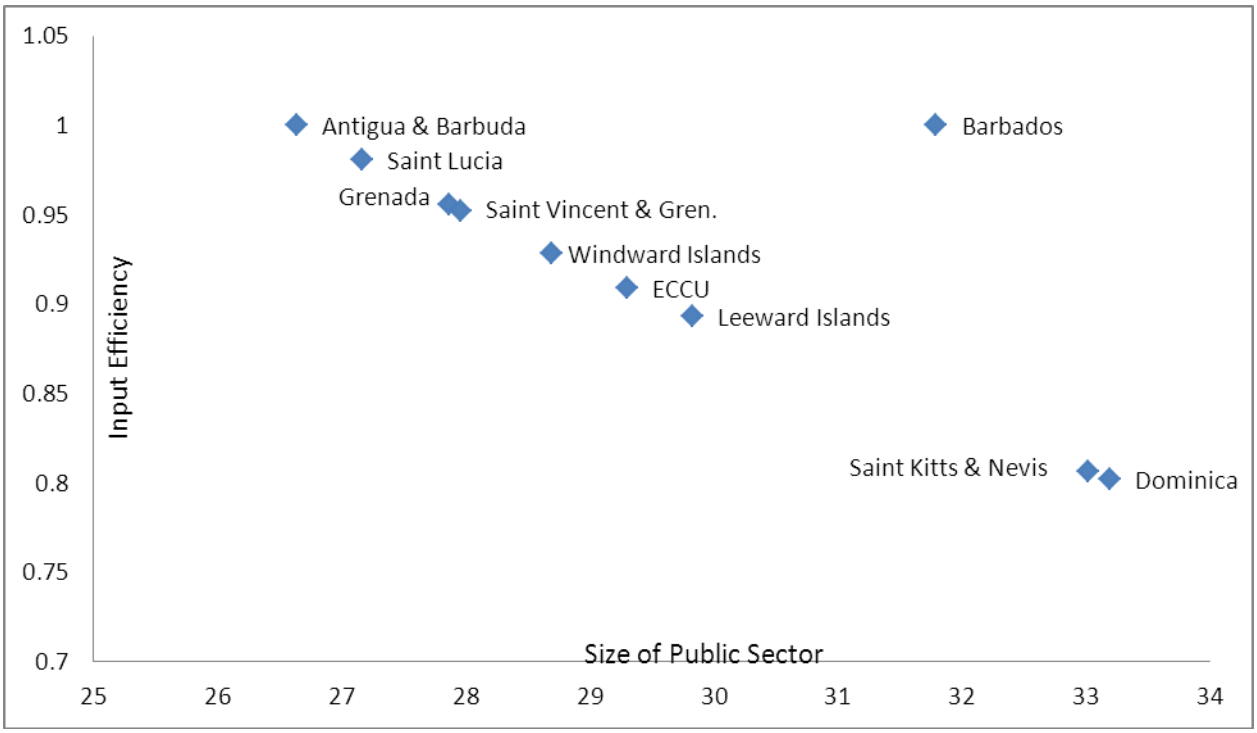


Table C(1): Pearson Correlation Coefficient

	Distance from Optimal	Real GDP Growth
Distance from Optimal	1.0000	
Real GDP Growth	-0.2885	1.0000

Table C(2): Pearson Correlation Coefficient

	Distance from Optimal	Input Efficiency
Distance from Optimal	1.0000	
Input Efficiency	-0.9659	1.0000

REFERENCES

Adam, C.S. and Bevan, D.L., (2005), "Fiscal Deficits And Growth In Developing Countries", *Journal of Public Economics*, 89, pp. 571-597.

Afonso, A. and St. Aubyn (2005). "Non-parametric Approaches to Education and Health Efficiency in OECD Countries," *Journal of Applied Economics*, 8 (2), 227-246.

Afonso, A.; Schuknecht, L. and Tanzi, V. (2005). "Public Sector Efficiency: An International Comparison," *Public Choice*, 123 (3-4), 321-347.

Alesina, A. and S. Ardagna, (1998), "Tales of Fiscal Adjustment,"*Economic Policy,* Vol. 13, No. 27, pp. 487–545.

Alesina, A. and R. Perotti, (1995), "Fiscal Expansions and Fiscal Adjustments in OECD Countries," *Economic Policy*, Vol. 10, No. 21, pp. 205–248.

Armey, D. and Armey, R. (1995). "The Freedom Revolution: The New Republican House Majority Leader Tells Why Big Government Failed, Why Freedom Works, and How We Will Rebuild America*," Washington, D.C.; Regnery Publishing Inc.*

Arpaia, A. and Turrini, A. (2008). "Government Expenditure and Economic Growth in the EU: Long-Run Tendencies and Short-Run Adjustment," *EC, Economic and Financial Affairs, Economic Papers 300*

Baltagi, B. (2005). "Econometric Analysis of Panel Data," *Third Edition, John Wiley & Sons Ltd.*

Barrios, S. and Schaechter, A. (2008). "The Quality of Public Finances and Economic Growth," *Economic Papers 337, September*
Barro, R. (1988). "Government Spending in a Simple Model of Endogenous Growth," *NBER Working Paper 2588*

Chao, J. And Grubel, H. (1998). "Optimal Levels of Spending and Taxation in Canada," chapter in "How to Use the Fiscal Surplus: What is the Optimum Size of Government", *The Fraser Institute, Vancouver*

Chobanov, D and Mladenova, A. (2009). "What is the Optimum Size of Government," *Institue for Market Economics, Bulagria.*

Cooray, A. (2008). "Economic Growth and The Size and Quality Of The Government", *University of Tasmania*

Davies, A. (2008). "Human Development and the Optimal Size of Government," *Journal of Socioeconomics, forthcoming*

Deprins, D., L. Simar and H. Tulkens. (1984). "Measuring Labor Efficiency in Post Offices." In M. Marchand, P. Pestieau and H. Tulkens (eds.), *The Performance of Public Enterprises: Concepts and Measurements*. Amsterdam: North Holland.

Devarajan, S., Swaroop, V, and H. Zou, (1996), The Composition Of Public Expenditure And Economic Growth", *Journal of Monetary Economics* 37, 313-344.

Fakin, B. and de Crombrugghe, A. (1997). "Fiscal Adjustment In Transition Economies: Social 15"

Gallaway, L. and Vedder, R. (1995). "The Impact of the Welfare State on the American Economy," *Joint Economic Committee of Congress Study, Washington D.C., December*

Ghosh, S. and A. Gregoriou, (2006), "On the Composition of Government Spending, Optimal Fiscal Policy and Endogenous Growth," *Economics and Finance Discussion Papers 19*, School of Social Sciences, Brunel University.

Gupta, S., Leruth, L., Luiz de Mello, and Shamit Chakravarti. (2001). "Transition Economies: How Appropriate is the Size and Scope of Government?," *IMF Working Paper 01/55, International Monetary Fund*

Gupta, S. and Verhoeven, M. (2001). "The Efficiency Of Government Expenditure Experiences From Africa," *Journal of Policy Modelling* 23, 433– 467.

Gwartney, J., Lawson, R. and Holcombe, R. (1998). "The size and functions of government and economic growth," *Joint Economic Committee, Washington, D.C., April*

Haque, M.E. and Kim, D.H., (2003), "Public investment in transportation and communications and growth: a dynamic panel approach", *Centre for Growth and Business Cycle Research Paper No. 031, University of Manchester.*

Karras, G. (1997). "On the Optimal Government Size in Europe: Theory and Empirical Evidence," *The Manchester School of Economic&Social Studies, Blackwell Publishing, vol. 65(3), pages 280-94, June*

Kolluri, B., Panik, M. and Wahab M. (2000). "Government Expenditure and Economic Growth: Evidence from G7 Countries," *Applied Economics, Taylor and Francis Journals, vol. 32(8), pages 1059-68, June*

Mandl, U., Dierx, A. and F. Ilzkovitz, (2008), "The Effectiveness And Efficiency Of Public Spending" *Economic papers 301, European Commission.*

Odawara, R. (2010). "A threshold Approach to Measuring the Impact of Government Size on Economic Growth," *Department of Economics, The George Washington University*.
Pevcin, P. (2004). "Cross-country Differences in Government Sector Activities", *Zb. Rad. - Sveuc. u Rij„ Ekon. fak„ god. 22. Sv. 2, str. 41-59*

Rahn, R. and Fox, H. (1996). "What Is the Optimum Size of Government," *Vernon K. Krieble Foundation 26*

Scully, G. (1994). "What is the optimal size of government in the US?," *National Center for Policy Analysis, Policy Report No. 188*

Scully, G. (1998). "Measuring the Burden of High Taxes," *National Center for Policy Analysis Policy Report No. 215*

Scully, G. (2000). "The Growth-Maximizing Tax Rate," *Pacific Economic Review, Vol. 5, No 1*

Scully, G. (2003). "Optimal taxation, economic growth and income inequality," *Public Choice 115: 299–312*

Scully, G. (2008). "Optimal Taxation, Economic Growth and Income Inequality in the United States," *National Center for Policy Analysis, Policy Report No. 316*

Tanzi, V. (1974). "Redistributing Income through the Budget in Latin America", *Banca Nazionale del Lavoro, Quarterly Review*.

Tanzi, V. and Schuknecht, L. (1996). "Reforming Government in Industrial Countries," *The Institute for Public-Private Partnerships, Finance & Development, September*

THE ENVIRONMENT WITHIN THE CONTEXT OF SUSTAINABLE DEVELOPMENT IN THE ECCU

BY

MS STEPHANIE GUSTAVE

List of Abbreviations

ABSAP	Anguilla Biodiversity Strategy and Action Plan
BPOA	Barbados Programme of Action
CARICOM	Caribbean Community
CDB	Caribbean Development Bank
CEHI	Caribbean Environmental Health Institute
CNHI	Caribbean National Health Institute
CSEP	Caribbean Sustainable Energy Programme
CTO	Caribbean Tourism Organisation
CZM	Coastal Zone Management
EAP	Energy Action Plan
ECCU	Eastern Caribbean Currency Union
ECERA	Eastern Caribbean Energy Regulatory Authority
EPC	Environment Policy Committee
EPI	Environmental Protection Index
ESDU- OECS	Environment and Sustainable Development Unit of the Organisation of Eastern Caribbean States
EU	European Union
GEF	Global Environment Facility
IWCAM	Integrated Water and Coastal Zone Management
JCFCF	Japan- CARICOM Friendship and Cooperation Fund
LDCC	Land Development Control Committee
MDGs	Millennium Development Goals
NEAP	National Environmental Action Plan
NEMS	National Environmental Management Strategy
NEP	National Environmental Policy
NEST	National Economic and Social Transformation
OAS	Organisation of American States
OECS	Organisation of Eastern Caribbean States
PERB	Protecting the Eastern Caribbean Region's Biodiversity
RRACC	"Reducing risk to human and natural capital assets resulting from climate change"
SGD	St. George's Declaration
SGP	Small Grants Programme
SIDS	Small Island Developing States
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme

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1.0 INTRODUCTION

To the outsider the Eastern Caribbean is simply a chain of islands famous for 'Sun, Sea and Sand'- warm temperatures, clear blue waters and picturesque beaches. The close affiliation between the islands' economies and the natural environment highlights the importance of considering the environmental impact of all developmental decisions. "The preservation of pristine skies and seas, of unbleached coral reefs, and of unsoiled lands is not just a matter of public health or long-term conservation – it is a matter of immediate economic importance" [30] This message is reiterated in the Barbados Programme of Action (BPOA) for Small Island States (SIDs) [31]which explains that although SIDs contribute least to global climate change they face the highest risk as such phenomena could make them uninhabitable.

When prioritizing national projects, environmental projects are not typically afforded a high rank and more funding goes into those projects that are deemed to provide economic benefits. From time to time, projects are undertaken without full consideration for environmental impact and vulnerability. The vulnerability of the islands to environmental disasters is often only confronted during the hurricane season when the region is on high alert for possible environmental damages. Without a change in the attitude of people regarding the environment, little can be done to move towards its sustainability; political will remains an impediment to the sustainable development movement.

Being small, vulnerable island states, it is imperative that any action to grow the small island economies be sustainable, as this is the preferred way to ensure long- term viability under the constraint of limited resources Sustainable development encompasses three components- environmental sustainability, economic sustainability and sociopolitical sustainability. Often developing countries, like those of the Eastern Caribbean Currency Union (ECCU), would

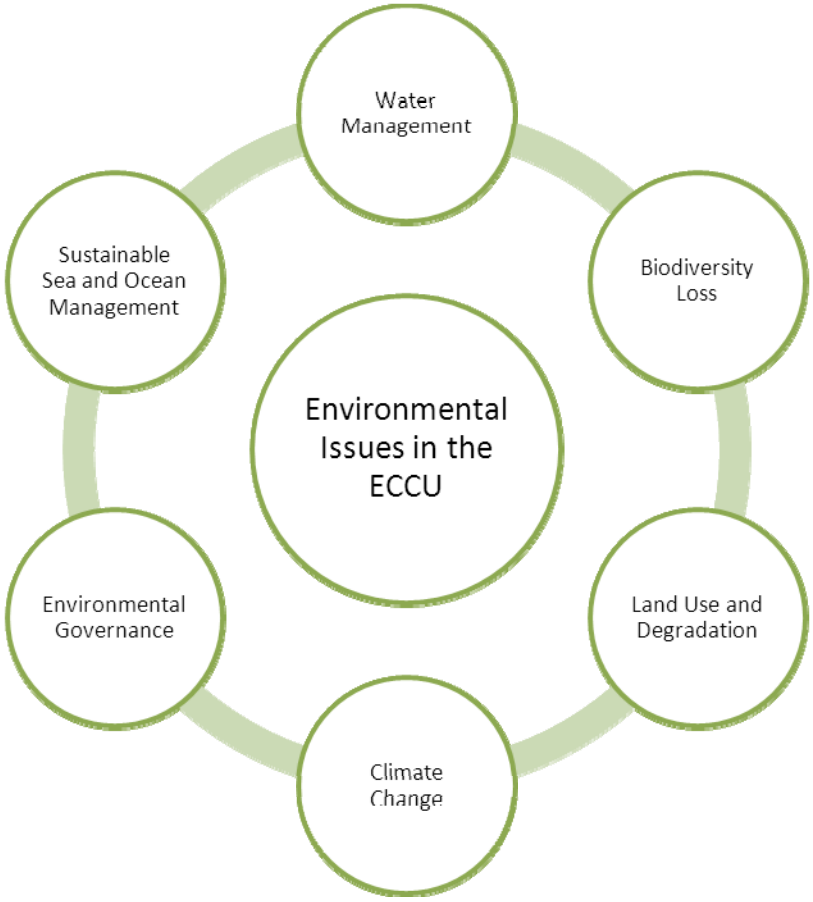
[30] Dr. Orlando Smith, Chief Minister of the British Virgin Islands presenting at the 10th Environment Policy Committee (EPC) meeting in Tortola

[31] The Barbados Programme of Action on the Sustainable Development of Small Island Developing States (SIDS) addresses the economic, environmental and social vulnerabilities that are experienced by SIDS and provides strategies to mitigate against those vulnerabilities.

omit environmental sustainability from their growth equations as the long term importance is rarely considered. It is important to replace the notion that environmental protection and economic growth are on opposite sides of the coin and attaining one of them means sacrificing the other; rather, the two must be seen as being complementary.

Environmental sustainability is defined ‘a state in which the demands placed on the environment can be met without reducing its capacity to allow all people to live well, now and in the future.’ The environment is simply the sum total of the biophysical environment consisting of the marine, atmospheric and terrestrial environments.

Figure 1 Summary of the Most Pertinent Environmental Issues within the ECCU



Where efforts have been made to address these concerns it is often done haphazardly, and in isolation, with little coordination of projects to ensure maximum impact. This paper presents a profile of environmental policy within the ECCU and provides updates as to the current state of affairs on the matter in each member state.

2.0 CONTEXT

2.1 Environmental Sustainability within the Wider Caribbean Region

With the exception of Anguilla, the ECCU states are also members of the Caribbean Community (CARICOM) which means that they adhere to any policy decisions signed on to by this regional institution. Recognizing the need to coordinate environmental policy within CARICOM, the Caribbean Environmental Health Institute (CEHI) was developed. CEHI was established in 1979 under the mandate of addressing environmental issues and furthering the sustainable development of the region. CEHI has numerous ongoing projects within the ECCU including a Global Environment Facility (GEF) funded Caribbean Integrating Water, Land and Ecosystem Management Project which would benefit all of the ECCU member states (except Anguilla and Montserrat). Other CEHI projects are conducted within subsets of the ECCU block and in some cases projects are limited to one member state as is the case with a current GEF sponsored programme to mainstream Saint Lucia's National Plan of Action through a North West Coast Water Quality Demonstration. Projects under the management of CEHI are often sponsored by different international agencies including the United Nations Environmental Programme (UNEP), Global Environment Facility (GEF) and United Nations Development Programme (UNDP). CEHI highlights that it faces some challenges in operating as a regional institution the most significant ones being the lack of coordination of agencies, gaps in environmental statistics, absence of record keeping by environmental agencies and problems with data harmonization.

The development of a Caribbean Community (CARICOM) Environmental Policy and Action Programme commenced in April, 2013 under the sponsorship of the Japan- CARICOM Friendship and Cooperation Fund (JCFCF). The aim is to produce a regional integrated policy to ensure protection of the environment and the natural resources. The focus of this

programme is to ensure environmental sustainability but there is the added benefit that it should encourage economic growth through increased investment and improve the standard of living in member countries.

2.2 Environmental Sustainability in the ECCU

The OECS Development Strategy recognizes the need to make environmental provisions key elements in the quest for economic growth and international competitiveness and therefore the environment is one of eleven sectors chosen for joint action by members of the ECCU under the revised Treaty of Basseterre. The Environment and Sustainable Development Unit of the OECS is the institution charged with the responsibility of coordinating natural resource and environment management services to member states.

Even before the formation of ESDU- OECS, the member states recognized their inherent vulnerabilities with the creation of the St. George's Declaration (SGD. The SGD was developed by the Environment and Sustainable Development Unit (OECS-ESDU) with the aim of fostering improvement in the quality of life of the citizens of the ECCU. This unit serves to fulfill one of the objectives declared under Article 5.3 of the Revised Treaty of Basseterre - to establish environmental policy for the ECCU. The mandate of the organization is "To protect, conserve and enhance or restore, where appropriate, the quality and value of the region's natural resources in order to sustain social and economic development for present and future generations." The St. George's Declaration overall aim is to 'foster equitable and sustainable improvement in the quality of life in the OECS region. The revised declaration outlines not only the goals of the organisation but it provides metrics that can be used to gauge how much progress is being made. The SGD outlined five program targets to advance the sustainable development of the ECCU:

1. Every country will have a system plan for parks and protected areas in place by 2003.
2. Integrated systems for land and water management should be operative in all countries by 2005.
3. Comprehensive environmental laws in place by 2003.

4. All countries will have increased water efficiency by 30 per cent of 1995 levels by 2005.
5. All countries will have increased energy use by 30 per cent of 1995 levels by 2005.

Although all of the ECCU members have signed on to the agreement, little has been done to implement the necessary policies. At present only some aspects of a national protected areas system exist within governmental units but none of the ECCU countries have a legally established national system framework. The environmental legislature has not been adopted by all ECCU states as several countries including Saint Lucia do not have a framework for environmental law. Most of the deadlines outlined in the SGD were not met by member countries and even in 2013, years after the agreed deadline; some states are still leagues away from reaching the outlined targets. In cases where the necessary policies were established, issues with implementation, regulation and enforcement remain. From surveying environmental policies within the ECCU it is evident that countries are now working towards fresh environmental targets with 2020 set as the most popular deadline for fruition.

St George's Declaration Goals	
	Goal 1: Build the Capacity of Member States and Regional Institutions to Guide and Support Processes of Sustainable Development
	Goal 2: Incorporate the Objectives, Perspectives, Resources and Talents of All of Society in Environmental Management
	Goal 3: Achieve the Long-term Protection and Sustained Productivity of the Region's Natural Resource Base and the Ecosystem Services It Provides
	Goal 4: Ensure that Natural Resources Contribute Optimally and Equitably to Economic, Social and Cultural Development

The goals outlined in the revised St George's Declaration were set to be attained by 2010. For the most part, all member countries have made reasonable strides in attaining the first goal with the establishment of a full or sub- ministry responsible for the environment. What is lacking though is the effectiveness of those institutions to regulate and enforce. Environment campaigns geared at increasing public awareness of environmental issues are evident in most countries, indicating some level of accomplishment regarding the second goal. The third goal remains a sticky issue for ECCU member states as they are often faced with the dilemma of environmental protection or economic development and with limited resources the environment often suffers. The ECCU members struggle with attaining the last goal as natural resource optimality and equitable use are new concepts that governments are now grappling with.

Since 2011, OECS has been implementing a project entitled "Reducing risk to human and natural assets resulting from climate change (RRACC)". The project seeks to enhance the overall, long-term capacity of the OECS region to respond to climate change, while strengthening the near-term resilience of Member States to climate change impacts through concrete, on-the-ground actions.

The development of the OECS Environmental Management Strategy functions to promote integration of environmental management into development planning, assist in planning for common environmental issues, facilitate pooling of resources to attain environmental goals and to promote harmonization of national policy, legislation and capacity building.

While there are many different facets of environmental sustainability those most relevant to the ECCU islands include:

- Land Resources

The Barbados Programme for Action highlights the importance of land resource management for Small Island Developing States (SIDs) - "The small size of most small island developing States, coupled with land tenure systems, soil types, relief and climatic variation, limit the area

available for urban settlement, agriculture, mining, commercial forestry, tourism and other infrastructure, and create intense competition between land use options."

By 2003 countries were making strides to improve on their land resource management procedures with the introduction of a regional project to assist in the development of land use planning and agricultural production zoning. This first step is imperative as it involves collection of data vital for policy considerations. There have been talks of developing a regional land use policy but little has been done so far concerning its development and implementation.

Table 1 Summary of the State of Land Resources in Select ECCU States, provides snapshots of some indicators of land resource use in 2008 and 2013 *[See Appendices]*. Land resource use within the ECCU has followed a trend with a general decrease in the percentage of land that is protected (except in Antigua and Barbuda and St. Kitts and Nevis). The levels of deforestation within the region remained low with some countries engaged in the opposite and more sustainable trend of reforestation (Saint Lucia and St. Vincent and the Grenadines). Within the ECCU there has been a shift away from agriculture as the main industry to more service based economic activity and this is reflected in the reduction in amount of land that is used for agriculture in all states except Dominica. Generally, there has been an increase in the amount of land declared as forest land as countries become more aware of the value of preserving forests and this is seen in the increase in forest land within the ECCU (with the exception of Dominica).

- Energy Resources

The economic impact of dependence on fossil fuel energy is often cited as one of the greatest hurdles to economic growth in the ECCU. The islands are well endowed with renewable energy sources that can be tapped into for primarily for electricity generation with the requisite positive effect of lower production costs. Options available with the ECCU include solar energy generation, hydropower generation and geothermal energy in some islands.

With increasing pressure on the governments to meet the gap in the balance of payments caused by the large value of petroleum products imported, there is greater consideration for alternative energy production. In April 2012, the OECS countries launched their Energy Efficiency Initiative with the mandate of curbing the growing energy bill in the region. The establishment of the World Bank funded Eastern Caribbean Energy Regulatory Authority (ECERA) founded in the year 2011 aims at maximizing the economies of scale in regulation of the energy sector and to drive the move towards more sustainable energy production. As this is a relatively new initiative all of the members of the ECCU have not signed on to it with only Saint Lucia and Grenada officially accepting this regulatory authority.

Table 2 Energy Resource Indicators for Select ECCU States provides some information on the impact of energy use on the environment *[See appendices]*. The data for energy consumption per capita was unavailable prior making a comparison impossible. A very important and environmentally sensitive observation from the table is the levels of CO_2 emissions over the comparable periods 2008 and 2013. The CO_2 emissions in the islands are shown to be increasing within most of the member states except in Antigua and Barbuda and Saint Lucia. Worrying developments indeed since it suggest that the islands' global environmental footprints are increasing and their contributions to global warming are also on the rise.

- Coastal and Marine Resources

Within the ECCU islands economic and residential life is concentrated within the coastal zones. This close affinity between coastal resources and the economies increases the vulnerability and opens up the small economies to the risks of natural disasters. Also, the impact of economic activity on the coastal and marine resources becomes an important consideration as it pertains to pollution and land use.

The OECS Fisheries Management and Development Strategy was developed in 2005 with the aim of creating a situation of optimal use of these resources to 'generate sustainable economic and social benefit.' The programme relies on regional and international institutions and the

various governments to implement the necessary policies. In March 2013, the Global Environment Facility (GEF) Small Grants Programme (SGP) announced a US$16 million Community- Based Adaptation project to address marine and coastal resource management.

Table 3 The State of Marine Resources in Select ECCU States shows that member states have different levels of protection for their marine resources *[See Appendices]*. For example, in Antigua and Barbuda 70 per cent of the territorial waters is protected compared to only 2 per cent being protected in Grenada.

- Biodiversity Resources

The ECCU is experiencing increased deforestation, coral reef deterioration, habitat loss and the introduction of non- indigenous species that negatively impact on eco- systems. In October 2007 the Protecting the Eastern Caribbean Region's Biodiversity (PERB) Project commenced with the assistance of USAID. The project is aimed at increasing public awareness on the issue of biodiversity resource protection through adding this theme to the secondary school curriculum.

Table 4 The state of Biodiversity Resources in Select ECCU States is an illustration of some of the indicators available on the current and past state of biodiversity resources in the island states *[See Appendices]*. From the table it is evident that there has been a downward trend in the number of threatened species within the islands which can be interpreted to mean that either the species has disappeared completely or that efforts by the country have led to re-establishment of population levels above the threatened threshold. These indicators are obscure and could mean either stride in the fight to preserve biodiversity or further lose and therefore a deeper analysis is necessary to fully understand the situation; that is however beyond the undertaking of this research.

- Freshwater Resources

The management of freshwater resources is gaining importance within the ECCU. This is due to decline in potable fresh- water as a result of increased pollution and lower levels of rainfall related to global warming. The need for research in this aspect of resource management is

emphasized in the Barbados Program of Action as a means of aiding in the development of integrated water resource plans.

Little progress has been made in improving freshwater resource management within the ECCU. Governments are now recognizing that this is an important consideration for further development. It is expected that the action needed to drive freshwater resource management will follow shortly.

Table 5 State of Freshwater Resources in Select ECCU States provides a synopsis of the freshwater resource use in the sub-region. From the table it is evident that there has been a continued and consistent improvement in the delivery of access to water sources.

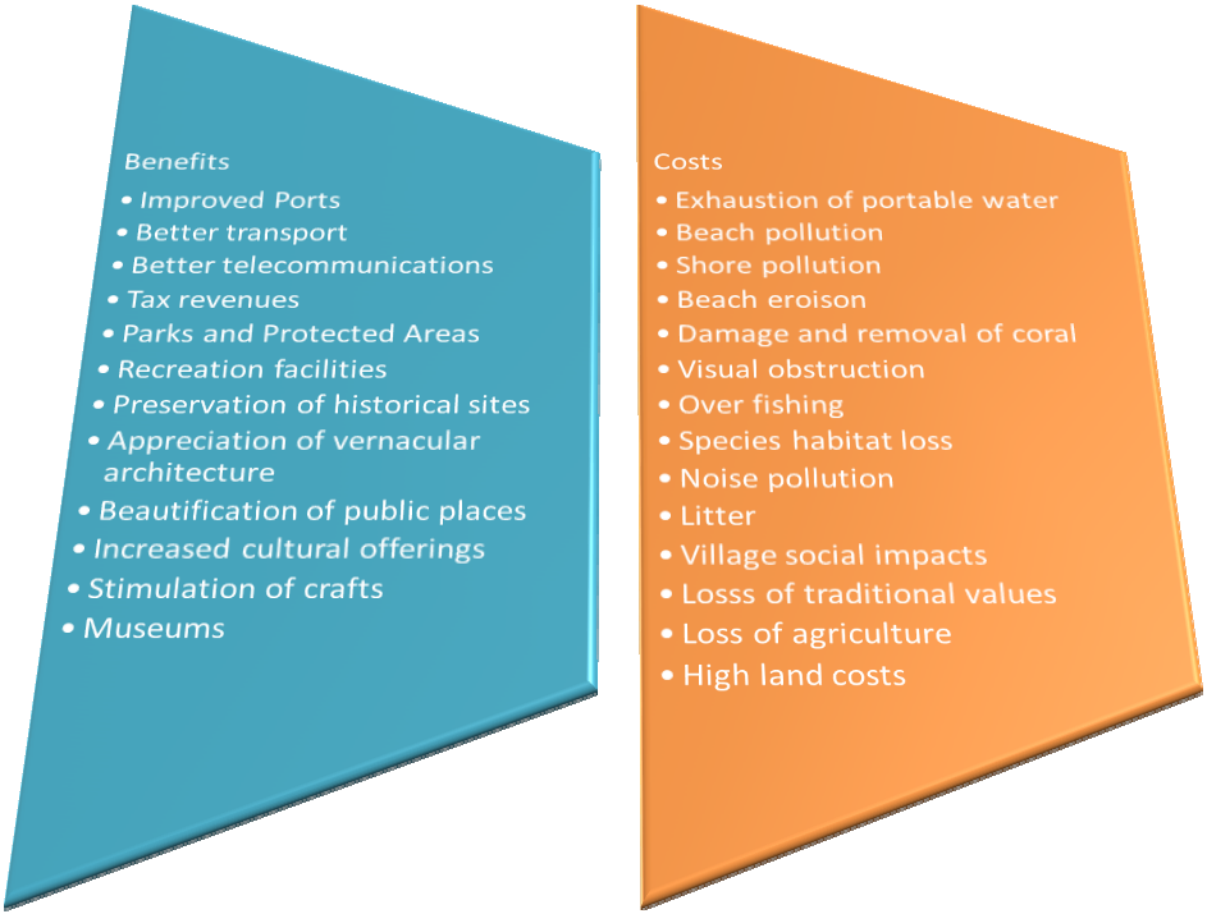
- Tourism Resources

The ECCU is dependent on tourism to drive growth within their economies. Tourism resource management is explained in the Barbados Programme of Action as involving 'land-use planning and coastal zone management, requiring environmental impact assessments for all tourism projects; the continuous monitoring of the environmental impact of all tourism activities; and the development of guidelines and standards for design and construction taking into account energy and water consumption, the generation and disposal of waste and land degradation, the proper management and protection of eco-tourism attractions, and the carrying capacity of areas for tourism.' The cost-benefit analysis of tourism resource use is summarized in Figure 1. The growth of the tourism industry places strain on the solid waste and sewage disposal capacity of these small island states. Tourism infrastructure places additional stress on coastal ecosystems- "the expansion of the tourism infrastructure is likely to be confined to the narrow coastal zone makes sustainable development … all the more difficult." (Lorah, 1996)

"The main problem in understanding environmental impacts of tourism is that few scientific tools exist to determine the more subtle changes. The methodology to monitor changes and to establish biological carrying capacity is still unsophisticated. Therefore, we know little about the long-term environmental impacts of tourism on natural resources." (Boo, 1990).

Most countries within the ECCU have addressed this resource in a similar manner with most of them introducing eco-tourism and nature tourism. The need for greater linkages between tourism and other sectors like agriculture is the nature of discussions with the region, but so far there has not been any formal policy intervention to support the process.

Figure 2 Impact of Tourism Resource Development



3.0 STYLIZED COUNTRY FACTS

3.1 Environmental Policy Status of the ECCU Member States

Most of the countries within the ECCU are making progress in regards to environmental governance. Over the last five years many of the member states implemented different environmental policies showing their commitment to improving environmental management *[See Appendix 1 a summary of national environmental policies]*. Generally the environment forms part of a ministerial portfolio dedicated to the environment or sustainable development and these ministries enact not only local policies, but also those from regional and international agencies for which country is a signatory. The ministry of environment often collaborates with other ministries to embark on projects as the environment is closely linked with other productive sectors including tourism and agriculture. One example of this collaboration is in regards to the drives for eco-tourism in many of the islands as a means of increasing revenue from tourism without the associated environmental costs.

The islands may be similar but every national environment is unique which leads to each island having fairly different environmental issues. Those differences are small as the natural resource base and the climatic conditions within the islands are the same. Therefore, a move to standardize environmental policies across the group of islands is plausible as it would allow countries to pool together their resources, knowledge and funds. For example, members share an environmental levy that is a deduction from the revenue collected from departure tax. This levy is typically used to cover the costs associated with waste management in the countries.

The creation of necessary policies is the first step towards a sustainable development drive but without proper implementation and enforcement there will be no realized rewards. Some of the key constraints to environmental governance that exist in all ECCU members states include:

- Inadequate institutional framework
- Lack of coordination
- Inadequate data collection mechanisms
- Limited implementation of policies and plans
- Poor coordination and enforcement of laws and regulation

Although these challenges exist in all of the ECCU islands it is worth reiterating that small steps are being taken to improve environmental governance. In Antigua and Barbuda, preserving the environment was one of their six strategic objectives under the National Economic and Social Transformation (NEST) Plan demonstrating commitment to protect environmental resources. Unfortunately the islands of the ECCU are not included in the Environmental Protection Index (EPI) which makes tracking progress of the move to a sustainable environment even more obscure.

The ECCU states face the same challenges with regards to environmental sustainability, efforts have been made to coordinate the move forward but different states are at different stages of this journey. The next segment of the paper will present on the national scope of environmental sustainability.

3.2 Anguilla

- Land Resources
    - The Land Development Control Committee (LDCC) is tasked with land resource management in Anguilla; they operate under the Department of Physical Planning. Although this department has a set framework for regulation there has been contention between them and the Executive Council which has the ability to appeal decisions. The result is LDCC decisions being overturned for various reasons.
- Energy Resources
    - The draft Anguillan National Energy Policy was produced in 2008 and it is a framework for the country's move away from fossil fuel use to more sustainable energy production and consumption by 2020.
- Coastal and Marine Resources
    - The Department of Physical Planning is supposed to follow the 'planning for coastline change: Guidelines for construction setbacks in the eastern Caribbean islands'. Regulating and enforcing these guidelines remains an issue as there are many homes built on the sea shore which is against regulations.

- Biodiversity Resources
    - The government has begun preparation of the Anguilla Biodiversity Strategy and Action Plan (ABSAP) as part of a drive to the sustainable use of the country's resources.

- Freshwater Resources
    - Anguilla has very little freshwater resources but the government has attempted to survey and map them under the Anguilla Marine Resources Inventory Project.
- Tourism Resources
    - Three working groups were created to assist in the implementation of a 'Tourism Master Plan" which will focus on protection, management, marketing and promotion of Anguilla's tourism product.

3.3 Antigua and Barbuda

- Land Resources
    - All of the necessary institutions have been put in place in Antigua and Barbuda – Development Control Authority, Lands Division (Ministry of Agriculture), National Parks Authority, Central Housing and Planning Authority, Soil and Water Conservation Division and Forestry. The issue is that all of these departments tend to be fragmented in their approach to land resource management.
- Energy Resources
    - Government is preparing to launch a new National Energy policy with the aim of providing a sure and affordable service to customers. The move to more renewable energy sources will be formalized in this policy.
    - A National Energy Education Act aims to turn educational institutions into a place where new energy sources are explored.
- Coastal and Marine Resources
    - In alliance with Texas A&M University and University of Miami, the government of Antigua and Barbuda has established a program to ensure the sustainable

management of coastal and marine environments through research, observation and public awareness campaigns.

- Biodiversity Resources
  - Under the PERB Project one site in Antigua (Wallings Forest and Watershed Area) and one site in Barbuda (Codrington Lagoon) were chosen for the second component of the project which will focus on biodiversity inventory development and the creation of management plans as well as the building of infrastructure like trails and signage. These sites will receive financial and technical support from the PERB Project.
  - Signed on to receive PERB support to develop a national framework legislature for biodiversity conservation.
- Freshwater Resources
  - The National Physical Development Plan is part of the National Action Programme to improve integrated management of Watersheds and Coastal Areas.
  - A proposal has been made for the creation of a Water Resources Board
- Tourism Resources
  - The development of a Tourism Strategic Policy and Plan (2005) that will focus on sustainability, collaboration and quality. Emphasis will be placed on research, product development, natural resources and safety.

3.4 Dominica

- Land Resources
  - Financial assistance from the Caribbean Development Bank (CDB) was attained to fund the preparation of a National Land Use Policy and a National Physical Development Plan. "These two documents will provide the Government with an explicit policy and physical planning framework that is conducive to long-term socio-economic development and improved management of the country's environment and natural resources."[32]

[32] "CDB to Finance Preparation of Dominica Land Use Policy." *Inside Dominica* 03 January 2013.

- Energy Resources
    - Development of an Alternative Energy Policy that will focus on geothermal energy production.
    - Establishment of a National Working Plan.

- Biodiversity Resources
    - Preparation of a draft of the Environmental Management and Conservation of Biodiversity Bill to cabinet.

- Freshwater Resources
    - Preparation of a draft National Policy for Integrated Water Resource Management with assistance from Organisation of American States (OAS) and Caribbean National Health Institute (CNHI).

- Tourism Resources
    - Government focuses on eco- tourism and promotions to attract tourists are generally centered on the 'greenness' of the island.

3.5 Grenada

- Land Resources
    - Draft of a Sustainable development of Land and Marine Management Strategy for Grenada
    - The establishment of a Grenada Lands Agency with the mandate of coordinating land resource management in an equitable manner.

- Energy Resources
    - The National Energy Policy of Grenada is a low carbon development strategy for the three islands which is in keeping with the attainment of the Millennium Development Goals (MDGs).

- Biodiversity Resources
    - One site in Grenada (Levera Mangrove Wetland) and one site in Carriacou (Sandy Island/ Oyster Bed Protected Area) were chosen under the PERB Project to receive both technical and financial support to enhance biodiversity resource management.
    - Signed on to receive PERB support to develop a national framework legislature for biodiversity conservation.
- Freshwater Resources
    - Under funding from GEF, preparation of an Integrated Water Resources Management Plan for Grenada was completed which is expected to be developed into a holistic Water Management Policy.
- Tourism Resources
    - The hotel industry has also requested an environmental management framework in response to a CTO mandate. This is being followed up by the EAD.

3.6 Montserrat

- Land Resources
    - Development of a National Sustainable Development Plan which charts the development course for the island from 2008 to 2020.
- Energy Resources
    - The Montserrat Energy Policy (2008- 2027) provides a framework for the vision of the energy sector. The move is towards more sustainable energy production and consumption with focus on alternative energy sources including geothermal and solar energy.

- Coastal and Marine Resources
    - A marine park system was proposed for Montserrat with delineated zones for different marine activities to protect the reef ecosystem that is growing around the island.
- Biodiversity Resources
    - The maintenance and protection of biodiversity is outlined in the Montserrat Sustainable Development Plan under the Environmental Management Strategic goal.
- Tourism Resources
    - The opportunities for setting up ecotourism in Montserrat are being explored by the government.

3.7 Saint Lucia

- Land Resources
    - Saint Lucia does not have a national sustainable development strategy but does have a National Environmental Policy (NEP) and a National Environmental Management Strategy (NEMS) Energy Resources
    - Implementation of a Sustainable Land Management Project.
- Coastal and Marine Resources
    - Commencement of a plan to develop a Coastal Zone Management (CZM) Strategy and Action Plan for Saint Lucia to "facilitate the long term restoration, protection, maintenance and sustainable use of coastal resources".
    - Establishment of an Integrated Water and Coastal Zone Management (IWCAM)

- Biodiversity Resources
    - Millet Nature Trail in Saint Lucia was chosen as a site under the second component of the PERB Project as it is home to a variety of the island's endemic birds.
    - The implementation of a National Biodiversity Strategy and Action Plan in keeping with the Millennium Development Goals.
- Energy Resources
    - The formulation of a Sustainable Energy Plan and the development of a Green Paper on Energy, which will form the basis for developing a sustainable energy policy.
- Freshwater Resources
    - The Government of Saint Lucia, with support from the European Union, has embarked on the formulation of a National Water Policy this is following the results of a Situational Analysis of the Water Sector which indicated that the country is currently experiencing water stress.

3.8 St Kitts and Nevis

- Land Resources
    - The National Environmental Action Plan (NEAP) provides a multi- pectoral framework for protecting environmental resources. The NEAP programme covers most of the aspects of environmental sustainability- the use of natural resources, air, land, water, forest and wildlife.
    - The NEAP programme will come on board using information gathered from the Country Environmental Profile that was done for St Kitts and Nevis.

- Energy Resources
    - Development of a National Energy Policy and Sustainable Energy Plans through the Organisation of American States (OAS) Caribbean Sustainable Energy Program (CSEP) with emphasis on geothermal and wind energy production.
    - St Kitts joined the Eastern Caribbean Geothermal Development Project.
- Coastal and Marine Resources
    - St Kitts is committed to setting up a national systems of marine and coastal protected areas that covers at least 20per cent of their near- shore marines by 2020.
- Biodiversity Resources
    - Nevis Peak is a protected area that serves as a watershed with several springs. This area was also chosen under the PERB Project as it is a habitat for birds and other species.
    - Signed on to receive PERB support to develop a national framework legislature for biodiversity conservation.
    - National Biodiversity Strategy and Action Plan for St Kitts and Nevis established in 2004.

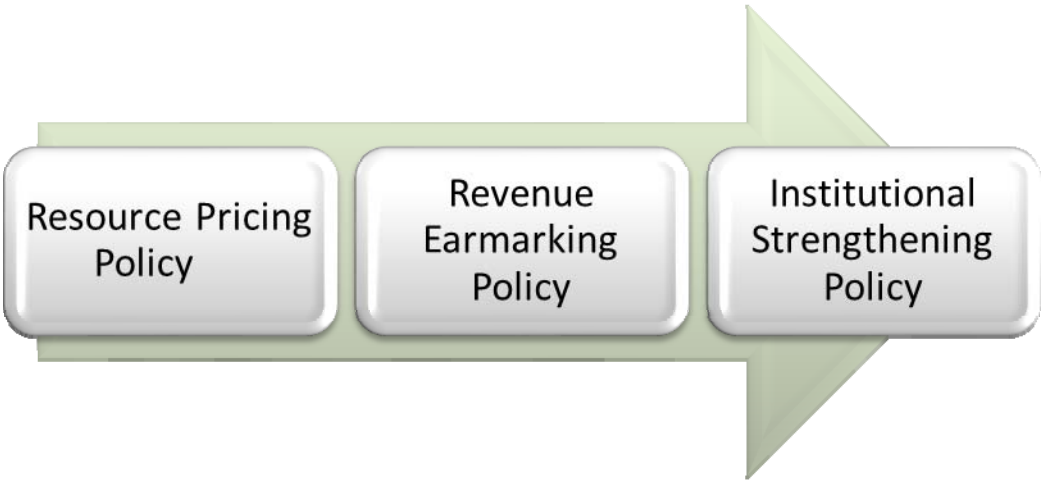
3.9 St Vincent and the Grenadines

- Land Resources
    - Establish the National Parks, Rivers and Beaches Authority from a unit to statutory body with an accompany act 2002, and a system plan for protected areas EU funding.
    - Integrated Forest Management Plan funded by CWSA and Vinlec.
    - Establishment of a National Environmental Management Strategy.

- Energy Resources
    - In 2009, a National Energy Policy was approved by the Cabinet of Ministers of the Government of Saint Vincent and the Grenadines.
    - SVG approved an Energy Action Plan (EAP) in 2010. The EAP forecasts possible energy scenarios in SVG until 2030. It contains short (1-5 years), medium (5-10 years), and long- (10-20 years) term actions which are designed to implement the policies and goals of the National Energy Policy (NEP).
- Biodiversity Resources
    - The King's Hill Forest Reserve a habitat for many epiphytes was chosen as a site for the PERB project as it is also home to endemic vegetative species, reptiles and micro- faunal species.
    - Signed on to receive PERB support to develop a national framework legislature for biodiversity conservation.

4.0 RECOMMENDATIONS

Ruitenbeek and Cartier (2000) present three general strategies to guide environmental policy formulating within the region: resource pricing strategy, revenue earmarking strategy and institutional strengthening strategy. These strategies encompass what is needed to drive the movement towards environmental sustainability within the region.



Resource pricing strategies are aimed at reducing the likelihood of mismanagement of environmental resources caused by under valuing by users. By correctly pricing environmental resources countries can now implement user fees which can be used to maintain and develop these resources. The next needed policy shift in the ECCU is towards revenue earmarking. In most of the member states funds exist to collect user fees for the environment; the problem is that these funds are generally used for other purposes rather than the environmental protection. This strategy aims at redirecting these funds to the source- the environment. Surveying the ECCU it is evident that environmental governance remains one of the biggest setbacks, where there are organisations in place they rarely have the power to actually regulate and govern the use of environmental resources. The institutional strengthening policy will endow environmental organisations with the power to perform effectively.

- The notion that environmental projects are the responsibility of only the government needs to be debunked. Corporate and civil involvement in environmental projects within the ECCU need to increase and this can be done through the use of public awareness campaigns.
    - Workshop participation to train members of municipal governments and of organized groups to improve their capacity for environmental management
    - Pamphlets

- Television educational programmes
- Modifying the school curriculum to illustrate the integral relationship between the environment and the economic and social spheres.

- There should be greater emphasis on measures for monitoring status and trends in environmental quality. Environmental indicators for the ECCU are limited and there is very little of the much needed environmental data collection. Indicators would allow for better resource allocation as they would give insight into which environmental resources need more attention.

5.0 CONCLUSION

The environment should be a critical aspect of development planning in the ECCU as it is impossible especially in these small island states to divorce the environment from the economy. Surveying the group of islands, it is evident that recognition of the importance of environmental sustainability is growing. The absence of political will to act to protect and maintain the environment remains one of the major drawbacks. In most islands the necessary legislature is already in place but with little institutional infrastructure to enforce and regulate; the results have therefore been a languishing of the legislations. Ruitenbeek and Cartier (2000) estimate the economic benefits of effective environmental management in the OECS at an annual value of $1, 614 million which represents 25 per cent of the annual collective GNP for the member states. This estimate as large as it may seem, cannot capture the full value of the environment to the member states of the ECCU. The ECCU can no longer treat the environment as a mere tool for economic growth, since the environment is a key element of our economic prosperity. The time has come for proactive and visionary leadership on the issue of environmental sustainability, not only from the governments but from the all of the institutions and citizens.

6.0 BIBLIOGRAPHY

CDB to Finance Preparation of Dominica Land Use Policy. (2013, January 03). Retrieved from Inside Dominica: http://www.insidedominica.com/index.php/homepage/latest-news/118-cdb-to-finance-preparation-of-dominica-land-use-policy

Bank, T. W. (2013). *The Littlle Green Data Book 2013*. Retrieved from http://siteresources.worldbank.org/EXTSDNET/Resources/Little-Green-Data-Book-2013.pdf

Boo, E. (1990). *Ecotourism: The Potentials and Pitfalls*. *Volume 1*. . Washington DC: World Wildlife Fund .

CARICOM. (2013). *CARICOM gets help from Japan to develop Environmental Policy*. Retrieved from Press Release: http://www.caricom.org/jsp/pressreleases/press_releases_2013/pres76_13.jsp

Field Museum of Natural History, M. o. (2013, July 12). *Biodiversity occurrence data*. Retrieved from Accessed through GBIF Data Portal: data.gbif.org

Lorah, P. (1996). *An Unsustainable Path: Tourism's Vulnerability to Environmental Decline in Antigua*. Caribbean Geography.

OECS. (2002). *OECS Environmental Management Strategy*.

OECS. (2013, June 17). *Protecting the Eastern Caribbean Region's Biodiversity (PERB) Project*. Retrieved from OECS: http://www.oecs.org/perb_docs/PERB_Article.pdf

7.0 APPENDICES

Table 1 Summary of the State of Land Resources in Select ECCU States

Country	Terrestrial Protected Areas (per cent of total land area)		Deforestation		Agricultural Land (per cent of land area)		Forest Area (per cent of land area)	
	2008	2013	2008	2013	2008	2013	2008	2013
Antigua and Barbuda	0.0	7.0	0.0	0.2	32	20	20.5	22.3
Dominica	26.5	21.7	0.6	0.6	31	35	61.3	59.2
Grenada	2.1	1.7	0.0	0.0	38	32	11.8	50
Saint Lucia	14.6	14.3	0.0	-0.1	33	18	27.9	77
St Kitts and Nevis	0.0	3.6	0.0	0.0	38	23	19.2	42.3
St Vincent and the Grenadine	11.3	10.9	-1.3	-0.3	26	26	28.2	68.7

Table 2 Energy Resource Indicators for Select ECCU States

Country	CO_2 Emissions per Capita (metric tons)		
	2013	2008	2013
Antigua and Barbuda	1699	5.1	0.2
Dominica	628	0.2	1.9
Grenada	784	2.0	2.4
Saint Lucia	760	2.3	2.2
St Kitts and Nevis	1645	2.7	5.0
St Vincent and the Grenadines	642	1.7	1.8

Table 3 The State of Marine Resources in Select ECCU States

Country	Marine Protected Area (per cent of territorial Waters)	Coral Reef (sq km)	Mangroves (sq km)	Total Fisheries Production (thousand metric tons)
Antigua and Barbuda	0.70	240	8.4	2.3
Dominica	0.13	< 100	0.10	0.70
Grenada	0.02	150	1.4	2.3
Saint Lucia	0.06	160	1.9	2.0
St Kitts and Nevis	0.53	180	0.68	31.0
St Vincent and the Grenadines	0.61	140	0.90	76.6

Table 4 The state of Biodiversity Resources in Select ECCU States

Country	Threatened Mammals		Threatened Birds		Threated Fish		Threatened Higher Plants	
	2008	2013	2008	2013	2008	2013	2008	2013
Antigua and Barbuda	22	2	-	1	-	18	4	4
Dominica	27	3	-	3	-	19	11	9
Grenada	23	3	-	1	-	19	3	3
Saint Lucia	27	2	-	5	-	20	6	5
St Kitts and Nevis	-	2	-	1	-	19	-	2
St Vincent and the Grenadine	25	2	-	2	-	20	5	4

Table 5 State of Freshwater Resources in Select ECCU States

Country	Internal freshwater resources per capita (cu. m)		Total freshwater withdrawal (per cent of internal resources)		Access to improved water source (per cent of total population)	
	2008	2013	2008	2013	2008	2013
Antigua and Barbuda	-	7.0	-	0.2	91	20
Dominica	-	-	-	-	97	95
Grenada	-	-	-	-	95	-
Saint Lucia	-	-	-	-	98	96
St Kitts and Nevis	-	452	-	-	100	99
St Vincent and the Grenadines	-	-	-	-	93	-

[33]

[33] The information in Table 1 to Table 6 was sourced from the World Bank's Little Green Book 2008 and 2013.

Table 6 Summary of the State of the Environment in the ECCU

Country	New Policies
Anguilla	▪ Environmental Levy increased by 2per cent. ▪ Completion of a National Wetlands Policy. ▪ National seminar on Greening the Anguillan Economy ▪ Focus on environmental economics in order to determine the value of environmental assets. ▪ Enactment of a modern Environmental Protection Act
Antigua and Barbuda	▪ Implementation of the National Sustainable Tourism Development Plan with a Clean and Green Antigua Initiative that will promote eco-tourism and nature tourism ▪ Completion of a Sustainable Island Resource Management Zoning Plan (or the Land Use Plan)
Dominica	▪ Drafting of an Environmental Healthy policy to take effect in 2014. ▪ Developed a Dominica Low-Carbon Climate Resilient Development Strategy- integrates national development goals with sustainability. Funded by the Climate Investment Fund. ▪ Enactment of a National Land Use Plan and Policy ▪ Final stages of preparation of a Quarrying Act. ▪ Exploration of geothermal energy as a renewable energy source.
Grenada	▪ Commitment to cut carbon emissions by 20per cent by 2020 and to become a carbon neutral country by 2030. ▪ German funded climate change project to commence.
Montserrat	▪ Enactment of legislature that regulates sand mining to combat beach erosion.
St Kitts and Nevis	▪ The National Environmental Action Plan addresses biodiversity; and the use of natural resources, including air, land, water, forest, and wildlife.

Country	New Policies
	▪ The National Physical Development Plan enacted in 2006.
Saint Lucia	▪ A Sustainable Energy plan was enacted to encourage the move to more renewable energy sources. Government has committed to increasing renewable energy generation to 20per cent by 2020. ▪ A National Agricultural Policy (2009- 2014) was initiated to address the issue of land degradation. ▪ A National Biodiversity Strategy and Action Plan with focus on protecting threatened marine turtles, a variety of vulnerable birds and a number of pelagic species
St Vincent and the Grenadines	▪ World- Bank funded Regional Disaster and Vulnerability Reduction Project ▪ Exploration of new renewable energy generation, most significantly solar and geothermal and increased hydroelectric generation.

Sources: Budget speeches of ECCU member states and CEHI project schedule

ADDRESSING THE ISSUE OF GOVERNANCE IN THE ECCU

BY

MR KURT HERCULES

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The purpose of this research is to constructively contribute to the discussion on the one of the seven great modernizations with regards to the Eastern Caribbean Currency Union (ECCU) by analyzing the current position of the region in addressing the issue of Governance. The main findings and recommendations are considered under the framework is that emphasis is needed in this area in order to increase transparency and help foster long term economic growth. The concept of governance may be applied to any form of collective action. As a result, this can have an economic impact on the region in different areas. On a national level, governance can be seen as the traditions, institutions and processes that determine how power is exercised, how citizens are given a voice, and how decisions are made on issues of public concern. Taking this into consideration, the role of the leaders should not outweigh that of the public as they represent the interest of society as a whole.

This research looks at the current position of the region regarding governance by focusing on five key areas which are thought to be mainly affected by the issue. Current attempts at reforming institutions and legislation in the various territories have been largely coordinated across the ECCU and territories are encouraged to work in line with the OECS Development Strategy. The reform generally involves judicial and legal reform along with electronic and results based management approached in public sector, targeting legal institutions, public administrative offices and communities within the OECS. The findings of various empirical studies previously conducted support the view that governments that provide greater transparency in their regulatory environment are also more transparent in other areas.

1.0 INTRODUCTION

Over the past years, governance has become a topic of major significance as the critical role it plays in determining societal well-being has taken on a higher level of significance. It is an integrally exclusive term which is used in a vast range of policy settings. Governance is described as the process of decision making and the process by which decisions are implemented or not implemented. The term can be used in contexts such as corporate governance, international governance, national governance and local governance[34]. The concept of governance may be applied to any form of collective action. It focuses on the formal and informal actors and structures put in place to formulate ideas, make decisions and implement them. Governance is the exercise of political, economic and administrative authority in the management of a country's affairs. It involves the more strategic aspects of directing the larger decisions about direction and roles. In other words, governance is not only about where to go, but also about who should be involved in deciding, and in what capacity. In defining what good governance is, the key characteristics need to be determined.

The World Bank recognizes that Governance has three distinct aspects. That is, structure and political regime, the processes by which authority is exercised and the capacity of governments to discharge functions. They define governance as the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them. They also note that the link between governance and development in most countries has been well-understood. In countries with poor governance, development paths have concentrated resources in the hands of the few, and economic and political institutions have been slow to adapt to the challenge of global flows of information, products and capital. Through this mechanism, governance can impact on the level of economic development.

[34] . On a national level, governance can be seen as the traditions, institutions and processes that determine how power is exercised, how citizens are given a voice, and how decisions are made on issues of public concern.

This paper looks at the issue of governance and how it is prosecuted in the Eastern Caribbean Currency Union (ECCU). In assessing the issue of governance pertaining to the region, section two gives a brief overview of the major Governance issues in the region. This is followed by section three which highlights some of the main areas of concern with regards to governance. In this section, some of the issues pertaining to the specific areas are highlighted as well as measures through which the ECCU attempts to address them. Section four looks at governance issues specific to the ECCU which is followed by a review of the governance initiatives in the ECCU in section five. The conclusion and policy recommendations addresses specific policies aimed at tackling the issue while some of the country specific policies which the individual governments have put in place to promote good governance can be seen in Table 1 in the Appendix.

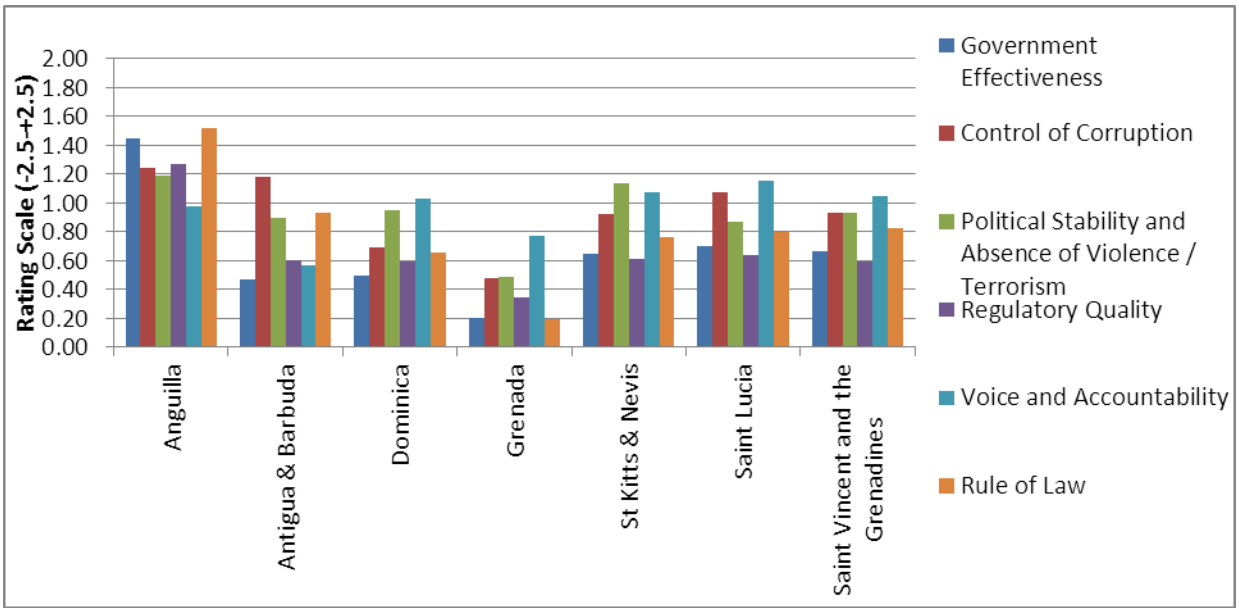
2.0 OVERVIEW OF GOVERNANCE

Good governance requires fair legal frameworks that are enforced impartially. It also requires full protection of human rights. The rule of law is respected, implemented and upheld by institutions that are well resourced, independent, honest, professional and competent. In assessing the issue of Governance in the ECCU, a number of fundamental questions need to be asked. Some of these questions include; are there universal principles of good governance? Where do these principles come from? In applying such principles what quality of detail do we need? How might we apply these principles to assess current governance regimes; what particular criteria are necessary to build governance? Given the broad nature of the issue, governance can be assessed with regard to specific areas. The fundamental areas through which governance can impact on an economic union such as the ECCU include legislation, public sector management, natural resource management, the business environment, foreign affairs and economic cooperation.

It has become an important issue that governments seek to improve transparency, accountability and service delivery. Two maim areas of focus with regards to governance and public sector management has been identified by the World Bank. These are (i) to strengthen

public sector management systems within the executive branch, including the management of public finances and public employment. The other are (ii) is to assess the extent of governance and facilitate country comparisons; the World Bank also uses a number or areas to develop measures of Governance. Some of these areas include political stability, government effectiveness, regulatory quality and rule of law. Through these measures the World Bank can formulate projects to help develop the capacity of their client countries geared toward the implementation, support, and sustainability of governance reforms.

Figure 3: Average Country Rating Over the Period 2004 to 2011



Source: World Bank Database

The above gives an indication of the position of the different ECCU member states with regards to these indicators. Data for all of the countries in the region were available with the exception of Montserrat. **The rating scale used by the World Bank to measure these areas was -2.5 to +2.5 where the negative region is indicative of lower rating and the positive region a higher rating**. In making this analysis, the ratings were averaged over a seven year period. It can be seen that Anguilla averaged the highest rating over the period in most categories with the exception of control of corruption, voice and accountability. These best ratings received in these two areas were Saint Lucia and St Kitts and Nevis respectively.

Grenada accounted for the lowest rating in all areas except for voice and accountability which was lowest in Antigua and Barbuda.

Based on these indicators, the issue of governance appears to be addressed regionally with all countries attaining average rating in the positive range. However, regulatory quality and the effectiveness of government seem to require some more attention throughout the region. One of the main factors identified as a hindrance to governance in the region has been the legal framework. Some attention has been directed towards this area, but whether sufficient effort is being made by the OECS to harmonize policies remains a matter of debate. However, with regards to government efficiency, a number of regional programs have been put in place to address this issue which is subsequently outlined.

The International Monetary Fund (IMF) contributes to promoting good governance in member countries through different channels. First, in its policy advice, the IMF assists member countries in developing systems that limit the scope for informal decision making, for rent seeking, and for undesirable preferential treatment of individuals or organizations. To this end, the IMF has encouraged, among other things, liberalization of the exchange, trade, and price systems, and the elimination of direct credit allocation. They also provide technical assistance to member countries aimed at enhancing their capacity to design and implement economic policies, building effective policymaking institutions and in improving public sector accountability. The IMF has promoted transparency in financial transactions in the government budget, central bank, and the public sector more generally, and has provided assistance to improve accounting, auditing, and statistical systems.

3.0 AREAS OF CONCERN

Governance must be comprised of a number of key reinforcing pillars which are transparency, accountability integrity, participation and the rule of law. Transparency helps to guarantee that governments and companies provide open, accessible, timely and understandable information regarding their activities, revenues and expenditure. Accountability creates mechanisms to

ensure that the authority entrusted to governments is effectively used and that individuals are held to account when they fail to effectively execute their responsibilities. Integrity promotes respect for the rule of law and strong ethics among governments and communities. Participation allows a safe space for individuals to debate, shape and monitor actions that are taken by the public sector which can impact on the citizens of an economy.

3.1 Legislation

As outlined in the OECS charter, one of the reasons for good governance is to strengthen and promote the regulatory and legal framework within which good business practices would be conducted. One of the main weaknesses identified in the OECS is the existence of a weak institutional framework and some legislation which are not in sync with the modern environment. There exist no sub-regional bodies to which legislators are elected. The legislatures have been required to pass laws giving up sovereignty to regional institutions as well as passing uniform laws across the domain. However, the OECS Assembly, which comprises members who are representatives, of the members of the Parliament and of the members of the Legislatures of the Member States can submit proposals to make regulations.

Under the OECS Treaty, member states have agreed to a common market including customs union, monetary policy, trade policy, maritime jurisdiction and boundaries and civil aviation. These matters are governed under various OECS acts. Monetary policy is collective across the different OECS states, conducted by the Eastern Caribbean Central Bank (ECCB) for eight of the OECS countries. Fiscal policy is applied at the national level formulated by the respective central governments. Trade policy throughout the region is undertaken nationally, sub-regionally, and regionally. However, the OECS members are moving towards uniformity in their specific trade related laws and arrangements to facilitate new and greater business opportunities across the OECS. This will reflect a new policy approach whereby the OECS Secretariat will draft legislation for member states which is normally further revised by individual member states to meet specific domestic trade and investment needs. It has been agreed that in order to make doing business in the OECS more attractive, in particular to

outside investors, members have to update and revise the current customs control and management laws.

To ensure good governance in the legal system, the judiciary must be independent of the executive if it is to perform its constitutional role of reviewing action taken by the government and public officials. As outlined in the OECS Development Strategy, technological changes, globalisation and the need for a regional approach to policy-making must be given due recognition in any meaningful legal reform process. It was noted that in the final analysis the legal structure, including the judicial process, must be efficient, transparent, fair and effective if it is to serve the purpose of development. The OECS has implemented a judiciary and legal reform project aimed at strengthening the role of the legal and judicial system in providing a sustainable, enabling environment for equitable social and economic development. The project targeted the legal institutions and specific communities within the OECS. This reform is aimed at developing the capacity for the practical, fair and transparent management of conflicts[35]. The specific countries in which the project was implemented were Antigua & Barbuda, Dominica, Grenada, St Kitts and Nevis, Saint Lucia, and St Vincent and the Grenadines. The challenge of ensuring that decisions are binding and automatically enforceable in Member States in agreed areas which are listed in the revised Treaty will be addressed by transferring power from national parliaments to the Authority. This process is otherwise described as a ***'pooling of sovereignty'***.

3.2 Public Sector Management

The Public Sector plays an important role in the operations of an economy as public expenditure forms a significant part of Gross Domestic Product (GDP). Also, public sector entities are responsible for a significant proportion of employment creation in most OECS economies. Regarding fiscal policy and monetary and financial policies, the IMF has developed codes that set out transparency principles. A few of these principles include, clear

[35] Its primary partners will be the Attorneys General and the District Courts, the Chief Justice and members of the Supreme Court, the judiciary, Bar Associations, Ombudsmen and civil society organizations and individuals interested in legal issues

and open legal, regulatory, and administrative framework for fiscal management, an open budgetary process and public availability of information. In order to meet its wide range of functions, the public sector must satisfy a number of political, economic, social, and environmental objectives. This subjects it to a different set of external and internal constraints and incentives from those in the private sector, all of which affect its governance arrangements. Public sector management can encompass areas such as taxation, public sector administration and management and administration, public sector employment, audit and customs and excise administration.

Governance with regards to the public sector is of high significance as it speaks to areas such as budgeting, public expenditure, public employment, finance and fiscal policy. This is particularly important as it can mitigate against issues of corruption in public office. Effective governance in the public sector encourages better decision making and the efficient use of resources. It also strengthens accountability for those resources utilized. Effective governance is characterized by robust scrutiny, which provides important pressures for improving public sector performance and addressing the issue of corruption. To tackle this issue, there has been the establishment of an Integrity Commission in order to ensure integrity in public life under the Integrity in Public Life Bill 2011[36]. This act aims to obtain declarations of the assets, liabilities, income and interest in relation to property of persons in public life, to give effect to the provisions of the Inter-American Convention Against Corruption (IACAC). The guidelines and standards outlined also help safeguard the nation from corruption by politicians and public officials who have been given access to public resources together with the power to take decisions that impact on the lives of everyone and the nation as a whole.

Another one of the approaches recently adopted by the OECS to help tackle issues of governance in the region is the Results-Based Management (RBM) approach. The RBM approach ensures that work programmes are based on the strategic objectives and directives of

[36] With regards to this act, Antigua and Barbuda, Dominica, Grenada, Montserrat and Saint Lucia have implemented legislation.

the OECS Authority as outlined in the requirements of the Revised Treaty of Basseterre. It is intended to increase accountability, transparency and predictability of the work of the organisation, while maintaining some degree of flexibility to adapt to changing circumstances. The focus on results helps ensure that the initiatives undertaken bring most needed benefits to OECS citizens. In the aim of reforming a number of administrative and business processes associated with the OECS Economic Union, the Electronic Government Regional Integration Project (EGRIP) is being implemented. EGRIP is a World Bank-funded project bringing together the national governments of Dominica, Grenada, Saint Lucia, and St Vincent and the Grenadines to promote greater efficiency, quality, and transparency in public services through the delivery of regionally integrated e-government applications.

3.3 Environment

With the growing concern over the degradation of ecosystems in the OECS, the need for governance with regards to natural resource management is also of great significance. The nature of the environment within the OECS will challenge the capacity for economic development based on the presence or absence of good governance. Environmental degradation in the region is one of the costs borne by member states due to economic growth and development. Effective environmental governance at all levels is critical in addressing some of the challenges faced by the small island states. Some of these challenges include, exploitation of natural resources associated with poor land development, growing populations increases in pollution, over-exploitation of living resources, uncontrolled expansion of coastal developments and the introduction of invasive species. Environmental governance comprises of the rules, practices, policies and institutions that shape how humans interact with the environment. Good environmental governance takes into account the role of all parties which impact on the environment. These parties include governments, private sector businesses and civil society. A number of measures have been taken by the OECS to help mitigate against the negative effects of these aforementioned situations. Projects implemented by the OECS such as the Reduce Risks to Human & Natural Assets Resulting from Climate Change (RRACC) project, the St Georges Declaration (SGD) and the OECS Sustainable Ocean Governance (SOG) Programme.

The RRACC project is an OECS initiative to assist Barbados and the OECS countries in their efforts to adapt to the impact of climate change. Focus will be on adaptation measures in the areas of coastal and marine zone management along with freshwater resources management. The St George's Declaration of Principles for Environmental Sustainability in the OECS, which was signed by the OECS Ministers of the Environment at St George's, Grenada in April 2001. The Declaration sets out the broad framework to be pursued for environmental management in the OECS region. This program takes into account the reliance of Member States on economic sectors such as tourism and agriculture, which are based upon, and can put substantial pressure on, natural resources and ecological systems. Hence, it looks at measures through which these sectors can be sustained while protecting the environment. Additionally, sustainable use of natural resources is outlined as one of the principles of the declaration. The SOG programme aims to create an institutional framework for regional cooperation in trans-boundary oceans management. The OECS outlines that through this they aim to strengthen national and regional capacities of ocean law and policy within the framework of sub-regional cooperation and facilitate the provision of technical services in the area of sustainable ocean resource and marine environmental management.

3.4 Foreign Affairs

The OECS is made up of six independent states. Therefore the implementation of harmonized foreign affairs policy may pose a challenge. Differences in allegiances and political behaviours may lead governments to pursue their own arrangements with regards to this matter. Good governance practices are required in such situations as individuals may use their positions for private benefits as opposed to the interests of the state. Foreign policy harmonization is important to increasing bargaining power and voice especially on issues regarding governance. The facets of foreign affairs which can reflect the need for good governance practices include external relations, financial and technical assistance from external sources, trade agreements and external economic relations, international marketing and transportation and communication. The need for good governance practices with regards to these areas is very

important as individual or country specific situations can reflect on the region as a whole in some cases.

The interventions in institutional capacity building within the OECS have been implemented with a number of objectives in mind. These include, facilitating the development and maintenance of an OECS international trade strategy, strengthening OECS capacity to meet obligations under regional and international trade agreements, participating effectively in international trade negotiations and effectively managing and promoting the OECS trade, economic and development interests in multilateral trade negotiations and in the regular bodies of the WTO and at the UN trade-related organizations. Despite this, as noted in the Development Strategy, governments will have to reserve certain sectors[37], for nationals and OECS citizens to ensure their participation in economic activity. Government policies should be structured in a manner that policies do not conflict with their international obligations in the WTO and elsewhere. As an OECS requirement, policies that promote inefficiency and anti-competitive practices in the name of nationalism are highly discouraged.

3.5 Business Environment

Fiscal policy makers and public financial management practitioners in general agree on the positive impact of transparency and accountability on economic performance and on public confidence and trust in government. Full transparency in government provides an incentive for decision makers to act in a spirit of compliance. The capacity of the public to examine and review the performance and financial statements of government entities increases the level of confidence and trust in the public sector. Full performance disclosure also forces public agencies to direct more focus towards actual outcomes as opposed to the quantity of activities and projects. This access to information can empower citizens to monitor the quality of government services and the use of public resources. An institutional environment characterized by openness and transparency is of central importance for both private markets and the efficient management of public resources. Lack of transparency around the decisions made by policy makers and government officials can lead to resource misallocation as funds,

[37] These sectors include small-scale distribution, small hotels and guesthouses, repair and maintenance services.

rather than being directed toward their most productive ends, are instead captured for private gain.

With this in mind, it can be analysed that the importance of transparency has a spillover effect on business and economic activity. Looking at transparency in this regard, Doing Business has information based on surveys which addresses this issue. Table 1 below summarizes the information obtained from various fields to make country comparisons pertaining to transparency and setting up a business. The surveys pertain to fee schedules which are considered easily accessible if they can be obtained through websites of the relevant agency or through public notices available at the agency or a related one, without a need to meet with an official. In many countries, licenses, permits and so on are required to engage in such activities as opening a shop, investing or engaging in foreign trade. As a result of this, sometimes the time spent dealing with the officials can be reduced through payment of bribes (Schiller).

Table 7: Measures of Transparency in setting up a Business

Country	Are fees and schedules for starting a business easily available?	Published in laws, decree, regulation or gazette?	Brochures, boards, or other public notices at agency's office.	Easily available online.
Anguilla	n/a	n/a	n/a	n/a
Antigua & Barbuda	No	Yes	No	No
Dominica	Yes	Yes	No	Yes
Grenada	Yes	Yes	No	Yes
Montserrat	n/a	n/a	n/a	n/a
St Kitts and Nevis	No	Yes	No	No
Saint Lucia	No	Yes	No	No
St Vincent and Grenadines	Yes	Yes	No	Yes

Source: Doing Business

It can be seen that regarding transparency in this aspect, only the islands of Dominica, Grenada and St Vincent and the Grenadines seem to be doing well in addressing this area. With the exception of the availability of information brochures, boards and public notices, the areas such as laws and regulations are addressed throughout the region. These are the main areas of significance pertaining to governance. However, in the other areas such as publication of fees and public notices, Countries such as Antigua and Barbuda, St Kitts and Nevis and Saint Lucia need to address these fields. In this particular study, information was not available for Anguilla and Montserrat. However despite the results from this particular survey, in terms of rank in the overall ease of doing business, the situation was found to be somewhat different. Based on the 2012 Doing Business results, Saint Lucia and Antigua and Barbuda ranked highest out of the 185 countries in terms of ease of doing business at 53rd and 63rd respectively. St Vincent and the Grenadines, and St Kitts and Nevis and Grenada ranked lowest at 75th, 96th, and 100th respectively, while Dominican ranked 68th. Economies that make fee schedules consistently easy to access rank higher on the ease of doing business and they keep regulatory compliance costs for firms significantly lower.

This analysis is important as in cases where fees and other schedules are only accessible via meetings with agents or official gives greater rise to cases of corruption. This can harm the business environment of a country which can have adverse effects on economic activity and foreign relations. The World Bank finds that worldwide, nineteen percent of firms report having had to pay bribes in connection with their application for an operating license. Of these firms, it was also found that two thirds were considered small firms. They also found that economies with easy access to regulatory information were more likely to be democratic and transparent as well as guaranteed greater political and civil rights. It was also pointed out that governments that provide greater transparency in their business regulatory environment are also more transparent in other areas.

4.0 GOVERNANCE IN THE ECCU

Using legislation to tackle issues of governance, a number of ECCU countries have implemented acts regarding the behavior of public officials. Anguilla implemented the Public

Service Integrity Board Act 2000 which was formulated to address any conflict of interest pertaining to public officers so as to prevent them from using their positions for any personal or private gain. Antigua and Barbuda, Dominica, Grenada and Saint Lucia have passed the Integrity in Public Life Act which requires that public official make an annual declaration of assets so as to improve cooperation on anti-corruption efforts. Countries such as Dominica, Grenada, Saint Lucia and St Vincent and the Grenadines have embarked on a number of programs aimed at legislative reform pertaining to public sector management through financial administration acts as outlined in the table in the appendix.

To foster effective public sector management, a number of projects and programmes have been formulated targeting the management of government revenues and expenditures. This is a critical issue as with countries such as Grenada and Antigua and Barbuda undertaking debt restructuring programmes and reducing public expenditure is important. Some of these initiatives include Antigua and Barbuda's Public Financial management project and St Kitts and Nevis medium term expenditure framework. Also, a number of ICT related projects involving E-Government services in countries such as Grenada, Dominica, Saint Lucia and Antigua and Barbuda have also been implemented to help better manage government collections and revenues (See Appendix Table 1). Regarding the EGRIP program, Dominica, Grenada and Saint Lucia have already received soft loan financing from the World Bank for implementation of the system, while negotiations are currently being made with Saint Vincent and the Grenadines.

Effective management of natural resources continues to play a significant role in the ECCU. With most of these economies heavily dependent on tourism as a main source of revenue, good governance practices are required to prevent or slow the degradation of these resources. A number of initiatives have been put in place to address this area of concern focusing on greenhouse gas emissions and environmental management regarding the use of natural resources. Antigua and Barbuda has implemented its National Environmental Management Strategy and Action Plan which involves both governmental and non-governmental groups. Saint Lucia has created a ministry which oversees activities relating to the development of

their natural resource stock. Countries such as Grenada, Dominica, St Kitts and Nevis, and Montserrat have signed on to various agreements to obtain support to develop a national framework legislature regarding areas of energy and biodiversity.

Given the recent challenges faced by a number of ECCU member states, it is also necessary to maintain good foreign relations. Governance is important here as it can impact on trade agreements, aid flows and concessionary borrowing facilities. Saint Lucia and New Zealand have established a mutual understanding to strengthen cooperation between the two countries. St Kitts and Nevis has established diplomatic relations with Brazil and have also signed a technical cooperation agreement with Argentina aimed at developing a framework through which future collaboration can be realized. Also in recent years, Grenada has resumed diplomatic relations with the People's Republic of China through which they have been able to benefit from concessionary loan, grants and reconstruction aid. St Vincent and the Grenadines has also established relations with Kuwait through which they intend to benefit from a number of infrastructure projects. Given these and other benefits available to the individual countries, in order to maintain these relationships and establish new ones, it is necessary for the authorities to ensure policies and guidelines are put in place with regards to governance and foreign relations. This is necessary in order to create a good country image at an international level which is necessary to help develop the region.

5.0 GOVERNANCE INITIATIVES IN THE ECCU

One of the areas highlighted which needs to be addressed include institutional and governance reform. A number of steps have already been taken to support and attain greater functional autonomy and fiscal independence. However some of the countries are lagging behind others in different aspects. Institutional reform is identified as one of the key steps required towards moving forward with regards to governance. This covers a range of areas which all work in sync towards achieving good governance. These include:

- Data improvement and analysis
- Revenue Enhancement

- Accounting Reform
- Budget Reform
- E-Governance Programmes

The World Bank is supporting countries in the region through financing to implement projects aimed at dealing with this type of reform. These reforms involve governments' public administration reform and decentralization, which aim to bring government closer to the people and make it more accountable. Some of these projects involve adopting international standards in accounting, auditing, procurement, financial management, and regulatory reform. Some of the states have already received funding for a number of related projects. [38]The region needs to take advantage of these types of initiatives in the aim of improving public sector management. Improving the management of public resources can be achieved through reforms covering public sector institutions such as the treasury, public enterprises, civil service, as well as administrative procedures (e.g., expenditure control, budget management, and revenue collection).

ECCU member countries are also faced with the challenges of policy implementation traditionally faced by the region. To tackle governance, the legal framework within the region needs to be updated. This important because democracy and rule of law depends upon and reinforce sound regulatory frameworks. There is also the need for greater transparency in branches of government which include legislature, the judiciary and the executive. Legislation aimed at curbing acts of misconduct in public needs to harmonized across the region so as to create a standard benchmark for codes and practices. The integrity In Public Act which is the main act which addresses this issue needs to be implemented across the region. Countries which have not passed such legislation should be pressured into doing so. Ensuring that those in charge of the economic affairs can be held accountable for their actions is one of the ways

[38] The Governments of Dominica, Grenada and St. Lucia have each received financing in the amount of ECD $1.5 Million from the World Bank for implementation of the OECS Electronic Government for Regional Integration Project (EGRIP).

forward to achieving and maintaining good governance. Hence these policies emphasize the need for reform regarding legislation.

Strengthening of national laws and institutions can also be applicable to environmental governance. Hence, in order to achieve environmental commitments and goals, ECCU member states stronger legislative, political and judicial systems directly aimed at aimed at environmental protection. It should also be taken into consideration that governance is bi-directional. Therefore all parties must be taken into account when formulating policies to deal with the issue. These parties include civil society, government and non-government organisations. Therefore, consensus building through consultations should be encouraged among these parties via different mediums. This is important because the combination of formal decision rules and informal procedures constitute the governance style of the body in charge. Practices which involve participation of these actors in the decision making process contribute to effective governance.

6.0 CONCLUSION

A number of challenges have been highlighted to attaining good governance in the region. In a CARICOM publication, Grenade pointed out that some of the challenges include the external environment, political culture and regional security. External shocks can significantly impact on the economic environment of developing economies which can undermine governance. Political culture instilled in the operations of local governments can hinder the policies put in place to address the issue of governance. To address these and other challenges, the OECS outlines a number of objectives aimed at strengthening governance in the region. These include; modalities which should be in line with the Caribbean experience; consistent with the treaty of Basseterre and movements toward integration; removal of bottlenecks to facilitate private sector development and enhancement of the legal framework with regards to good business practices.

In order for the Caribbean countries to be competitive on a global scale given today's economic environment, the OECS needs to function more collectively. To achieve this, good governance needs to be placed at the top of the agenda. Strengthening of institutions and legislation to address the issue remain the key areas through which good governance can be enforced. Regulations are seen as one of the key areas through which governments act to promote economic prosperity, enhance welfare and contribute to the social well-being. Therefore, officials should exercise greater responsibility in making decisions regarding the affairs of the country as a transparent political culture is required to foster good governance. This requires a common framework among the various countries to better determine policy outcomes as the external environment can impact on different economies in different ways. However, less powerful economies should still be given fair treatment in decision making which may affect their domestic affairs.

On a regional level, programmes have been put in place to address governance. With additional help from global governance institutions such as the International Monetary Fund (IMF) and the World Bank (WB), the OECS community has obtained support to address this great modernization.

7.0 POLICY RECOMMENDATIONS

- Updating of the legal framework within the region.
- Legislation aimed at curbing acts of misconduct in public office need to be harmonized across the region so as to create a standard benchmark for codes and practices.
- Consensus building through consultations in formulating policies to increase public participation and awareness in policy formulation.
- Strengthening of national laws and institutions applicable to environmental governance.

8.0 BIBLIOGRAPHY

Camdessus, Michael. *Good Governance: The IMF's Role*. Address to the United Nations Economic and Social Council. Washington DC: International Monetary Fund, Publication Services, 1997.

Geginat, Carolin. *How transparent is business regu;lation around the world?* 2013. Doing Business Publication 2013.

Grenade, Wendy C. "Governance in the Caribbean:challenges and prospects." *Commonwealth Governance Handbook* 2012/13: 54-57.

Huong, Luo. "Environmental Governance." *UNFCCC Conference*. Copenhagen: United Nations Environmental Programme, 2009.

OECD. *Recommendation Of The Council On Regulatory Policy And Governance*. 16 January 2012. Document.

Saez, Lawrence. *Methods in Governance Research: A review of Research Approaches*. ESID Working Paper No. 17. Manchester UK: Effective States and Inclusive Developments, 2013.

9.0 APPENDIX

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
Anguilla	**Public Service Integrity Board act (2000).*	**Framework for Fiscal Sustainability and Development (2013)[39]. * Expansion of e-government services, increased use of ICT in delivering services*	**Reduction in greenhouse gas emissions. *Increase use of green technologies and methods in managing the environment and utilizing natural resources.*	**Deepened participation in the OECS Economic Union and strengthened relations with OECS Member Countries.*
Antigua and Barbuda	** Integrity of Public Life Bill (2004)[40].*	**Implementation of the Public Financial Management (PFM) project funded by a $10.9 million grant from*	**Initiation of work on a National Environmental Management Strategy and Action Plan*	**Signing of Protocol of intentions with the Russian Federation.[42]*

[39] Implemented to replace the 2003 borrowing guidelines (UKG grant of EC$12.5 million)

[40] This act requires public officials to make an annual declaration of assets.

[42] This protocol established enhanced consultation for bilateral cooperation in resolving international issues and serve to strengthen mutual understanding and cooperation.

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
		the European Union. **Expansion of their Integrated Financial Management System (IFMS) to incorporate Human Resource, Government revenues and procurements.*	*(NEMS)*[41]*.*	
British Virgin Islands		**British Financial Framework Fiscal Rules*		
Dominica	**New draft legislation in the sphere of local government (harmonization of*	**Ongoing work on the implementation of an ICT policy for*	** Preparation of a draft of the Environmental*	**Establishment of diplomatic relations with China,*

[41] Programme in collaboration with the OECS which involves consultative process among a wide variety of governmental, community and non-governmental stakeholder and interests groups, with the aim of identifying a set of sustainable environmental principles.

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
	four local authority acts). **Modernization of legislation for financial and macroeconomic management.*	*the government system. (ASYCUD[43] and ULIS[44]).* *Establish Principles of Public Life and Standards of Conduct for Ministers and Members of Parliament.		*Dominican Republic, Senegal, Poland, Romania and Saudi Arabia.* ** Deepening and strengthening relations with Venezuela and Cuba.*
Grenada	**Completion of consultations following the constitutional reform exercise.*	**Modernization of the Customs Administration.* **Enhanced the audit capabilities of the Inland Revenue Department[45].*	**Prohibition of sand mining by Parliament act (2009).* **Signed on to receive PERB support to develop a*	

[43] Automated System for Customs Data

[44] Unified Land Information System

[45] Implantation of the AYSCUD

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
		**ICT action Plan* **EGRIP*	*national framework legislature for biodiversity conservation.*	
Montserrat		*•Implementation of a new audit act aimed at increasing the independence of the Auditor General.* **Establishment of a Cabinet Secretariat to strengthen policy planning coordination.*		
St Kitts and Nevis		**Medium term expenditure framework (2012)* **Operationalizatio n of the new Procurement Act*	**Signed on to receive PERB support to develop a national framework*	

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
		(2012) **Formation of a Government Oversight Committee.*[46] **Audit of the Civil and Public Sector Reform.*	*legislature for biodiversity conservation.* ** Establishment of a national systems of marine and coastal protected areas that covers at least 20% of their near- shore marines by 2020.*	
Saint Lucia	**Introduction of a code of conduct to guide Ministerial behaviors.* **Introduction of new integrity legislation.* **Enactment of a Salaries Review Commission Act*[47]*.*	**Cap on public sector employment to hold the size of funded positions in the public service.* **Procurement reform to streamline public administration*	**Creation of a Ministry of Sustainable Development, Energy, Science and Technology.*	

[46] The responsibility of this committee would be to review the operations of all public sector corporations.

[47] This act restricts politicians from determining their own salaries and allowances.

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
	**Introduce legislation to create the Office of Contractor General.*[48]	*and increase the efficiency of public spending. *Establishment of Internal Audit Units aimed at improving Financial Management Capacity*		
St Vincent and the Grenadines	**Reform in financial administration with the passage of the Financial Administration Act of 2004 and the Audit Act if 2005.*	**Administration and organisational changes involving re-classification Exercises. *Performance Management and Development System (PMDS). *Improvement in terms and conditions of*	**Establishment of a National Environmental Management Strategy*	

[48] This office will act on behalf of the Parliament to monitor the award and implantation of government contracts.

Table 1: Country Specific Policies Outlined to address issues of Governance				
Country	***Policy (Area)***			
	Legislation	***Public Sector management***	***Natural Resource Management***	***Foreign Affairs***
		employment. **More and better training in the public service.*		

A LOOK AT THE NEXUS BETWEEN EDUCATION AND SKILLS TRAINING, RESEARCH AND DEVELOPMENT AND ECONOMIC GROWTH IN THE ECCU

BY

MS RHINA MEADE

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EXECUTIVE SUMMARY

The researcher contributes to the discussion on the development goals in the Eastern Caribbean Currency Union (ECCU) by presenting theoretical and empirical developments in the fields of Education and Skills Training and Research and Development (R&D), which have been identified as tenets in the development process of the Organisation of Eastern Caribbean States (OECS) sub-region. The main findings and recommendations are considered under the framework that these areas improve long term economic growth.

For the territories of the ECCU, policy recommendations and actions have been outlined to further advance the sectors while maintaining and/or raising the standard. Education and Skills Training and R&D activities in the ECCU are extensively provided by the Governments. To address deficits in the relevant systems and approach reforms there is a call for increased public investment in a time when Governments are being austere and trying to contain public expenditure.

Current attempts at reforming the education system in the various territories have been largely coordinated across the ECCU and territories are encouraged to work in tandem with the OECS Development Strategy. The reform generally involves universal secondary education, expanding access to higher education, more technical and vocational education and training to improve the skill sets of the labour force, training of teachers and raising the standard of education. In order to deal with the pressures from enrolment expansion and added costs to modernise the system, the governments will need to consider a school fee system. At the tertiary level, Governments may need to find approaches to relax financial constraints affecting the poor, so as to improve participation. With education receiving a declining share of government expenditure, additional resources from alternate sources will need to be mobilised, private-public partnerships will need to be developed. An independent quality assurance organisation or mechanism needs to be set-up. The data management and reporting process by the territories needs to be modernised.

R&D activities would be best situated as a coherent strategy for the sub-region focusing on specific priority areas, so that the territories can share the benefits and risks of projects. This would require a holistic policy framework with special emphasis on the private sector, an agreement on the goals for R&D activities, a well-defined road map, a legislative framework and a monitoring system.

The findings of various empirical studies previously conducted are compelling that increased education expenditure as a channel of accumulating human capital has a positive impact on growth and therefore, has potential for generating economic growth in the ECCU. Studies have pointed to a causal link between Education and Skills Training and R&D that has an endogenous effect on economic growth.

1.0 INTRODUCTION

The context of current policy instruments in the Eastern Caribbean Currency Union[49] (ECCU) is to drive economic transformation; in light of member territories' vulnerabilities, low and stagnating growth and weakening economic prospects. As part of a three-pronged approach to development, the broad socio-political goals to inform the medium to long term strategy for the ECCU are titled the Seven Great Modernisations[50]. Education and Skills Training and Research and Development are two goals which have a long term perspective and will require major reforms, infrastructural projects and a paradigmatic shift in the standards and processes needed to successfully make the transition onto a path of sustainable growth for member territories of the ECCU. Jones-Hendrickson (2011) in his essay on *Education in the Economic Transformation of the States of St Kitts-Nevis-Anguilla* said that investment in human capital is, perhaps, more augmenting in the transformation process than physical capital. Jules (2010) opined that in the Caribbean, "at every stage of our national development, education provided the human resource scaffolding that facilitated the modernisation thrust". However, with a depressed economic environment, governments of the territories must make concerted efforts to protect and hasten momentum in Education and Skills Training and expand Research and Development (R&D).

Historically in the ECCU, moving forward from a system of slavery, the post–colonial era has followed a progressive path with numerous reforms of the education system. Governments have grown from an epoch where they were primarily concerned with residents receiving basic skills and general education – commonly referred to as the three 'Rs'; to universal primary education; to the now strong impetus for universal secondary education, improved access to

[49] The Eastern Caribbean Currency Union (ECCU) is a development of the Organisation of Eastern Caribbean States (OECS). It comprises six (6) Independent Territories: Antigua and Barbuda, Dominica, Grenada, St Kitts and Nevis, Saint Lucia and St Vincent and the Grenadines; and two (2) British Overseas Territories: Anguilla and Montserrat

[50] The Seven Great Modernisations include: Education and Skills Training; Energy; Environment; Governance; Information, Communication and Technology (ICT); Research and Development; and Transportation.

tertiary education, and technical and vocational training. Compared to various regions in the world, Latin America and the Caribbean, ranks second behind North America and Western Europe as having the longest average duration of compulsory education as reported in 2000 and 2010 by UNESCO Institute for Statistics database and International Bureau of Education database. Under the legislative framework, the school leaving age makes secondary school education compulsory across the ECCU, yet full participation has not yet been recorded. Albeit, territories in the ECCU have made commendable efforts to reform their education systems with several policy initiatives implemented with outcomes such as increased access to learning institutions, training of teachers and several other programmes that have led to an improvement in indicators measuring efficiency and participation. The OECS Development Strategy has been used as a guide and the territories are harmonised in their goals across many areas.

Conversely, total research effort in the ECCU has been low. Expenditure on R&D is often misallocated in the ECCU and therefore, difficult to financially quantify and an estimate is not available for discussion. There is also no monitoring of the innovation performance of the sectors on the island. R&D as a market activity needs to be raised in prominence, as resources in the ECCU are often not optimally allocated and utilised. This factor negatively weighs on the sub-region's ability to be competitive, among the other challenges that fraught the open, small island economies of the sub-region.

This paper adopts the approach of investment in education as a means of building human capital to make gains in productivity. It builds on economic growth theories that human capital and technology are drivers of growth. The governments in the ECCU have taken on the role of being central to the process of human capital accumulation; therefore, administrative data from the governments in the territories are mined.

The low growth environment in the ECCU, along with deteriorating fiscal positions of the member governments, means that public spending in Education and Skills Training and R&D

may be jeopardised and it is, therefore, important to understand their impact on economic growth. By the end of the paper, the researcher's aim is to:

1. Deepen readers' understanding of the relationships between Education and Skill Training, R&D and economic growth;
2. Present useful insights on the channels through which Education and Skill Training and R&D may affect growth in the ECCU; and
3. Provide recommendations based on the findings.

This paper aims to elaborate on Education and Skills Training and R&D and their implication in the ECCU and the rest of the paper is organised as follows. Section 2 presents a brief survey of previous studies that provide evidence of the positive impact of the two goals on economic growth. Stylised facts on the ECCU are presented in Section 3. Section 4 provides a short critique of the current approach to the two sectors. Sections 5 and 6 provide the conclusion and policy recommendations, respectively.

2.0 THEORETICAL FRAMEWORK

In recent years, Education and Skills Training and R&D have been receiving increasing attention in both the scholarly community and by policy makers. There has been an upsurge in papers published on the topics and developments in recent research on Education and Skills Training and R&D provide invaluable theoretical and empirical links to economic growth. This growing body of theoretical, experimental and empirical contributions provide evidence to support that there is a positive economic growth nexus between building human capital, education being a large component, and expanding technology in countries. The evidence supports the effect of these variables on long term growth.

This paper is preceded by a sector profile that provides a synthesis of the efforts of the territories in the Education and Skills Training and R&D by looking at the policy, institutional and legislative environment in the ECCU (Meade, 2013). The referenced profile highlighted that the ECCU territories are all actively pursuing education reform however; R&D has not been a focal point in the sub-region leading to underinvestment by both the public and, most

importantly, private sector. As recommended, this area requires targeted policies to improve investment and innovation performance by the various sectors in the regional bloc.

The economics of education as a field of study for theoretical and empirical developments began gaining popularity in the 1960s from contributions by influential economists like Gary Becker, Jacob Mincer and Theodore Schultz. The human capital approach, developed by Gary Becker in 1964 is central to the economics of education. Education has been identified as an important driving force for growth as seen in work by Lucas (1988), Barro (1991), Mankiw et al. (1992), Benhabib and Spiegel (1994), Fernandez and Rogerson (1995) and Benabou (1996).

By accumulating human capital in a country, R&D can be expanded and have an endogenous effect on economic growth as it induces greater innovation (Romer, 1990); it may also affect physical capital investment and thus creates a second order effect on growth performance (Benhabib and Spiegel, 1994); and it can be an engine of technological progress thus raising the productivity of other inputs in the production process (Jones, 1998).

R&D policies have been strongly pursued in developed countries over the past three decades or so, with the aim of fostering innovation and economic growth in the countries. Recent study by Bilbao-Osorio and Rodríguez-Pose (2004) indicates that R&D investment, as a whole, and higher education R&D investment in peripheral regions of the European Union, in particular, are positively associated with innovation. Capable regions are able to transform R&D investment into innovation and, eventually, innovation into economic growth.

3.0 STYLISED FACTS ON THE ECCU

Given the background of the ECCU and the underpinnings of the theoretical framework, the motivation of this paper is to assess how expansion of Education and Skills Training and R&D sectors in the ECCU impacts economic growth by rationalising the use of public expenditure, legislative framework and economies of scale resulting from greater regional cooperation.

Cross-country differences in education qualifications in the ECCU are being eroded with the implementation of Caribbean Vocational Qualification and increased entries in the Caribbean Examination Council examinations. This is very important to mobility concerns raised with free movement in the OECS[51]. However, more integration and cooperation is needed to achieve economies of scale. Administrative expenses in ECCU territories are relatively higher than large countries, as there are fixed costs related to developing curriculum, information systems and guidelines for the education sector. Sub-regional cooperation may help to reduce administrative costs.

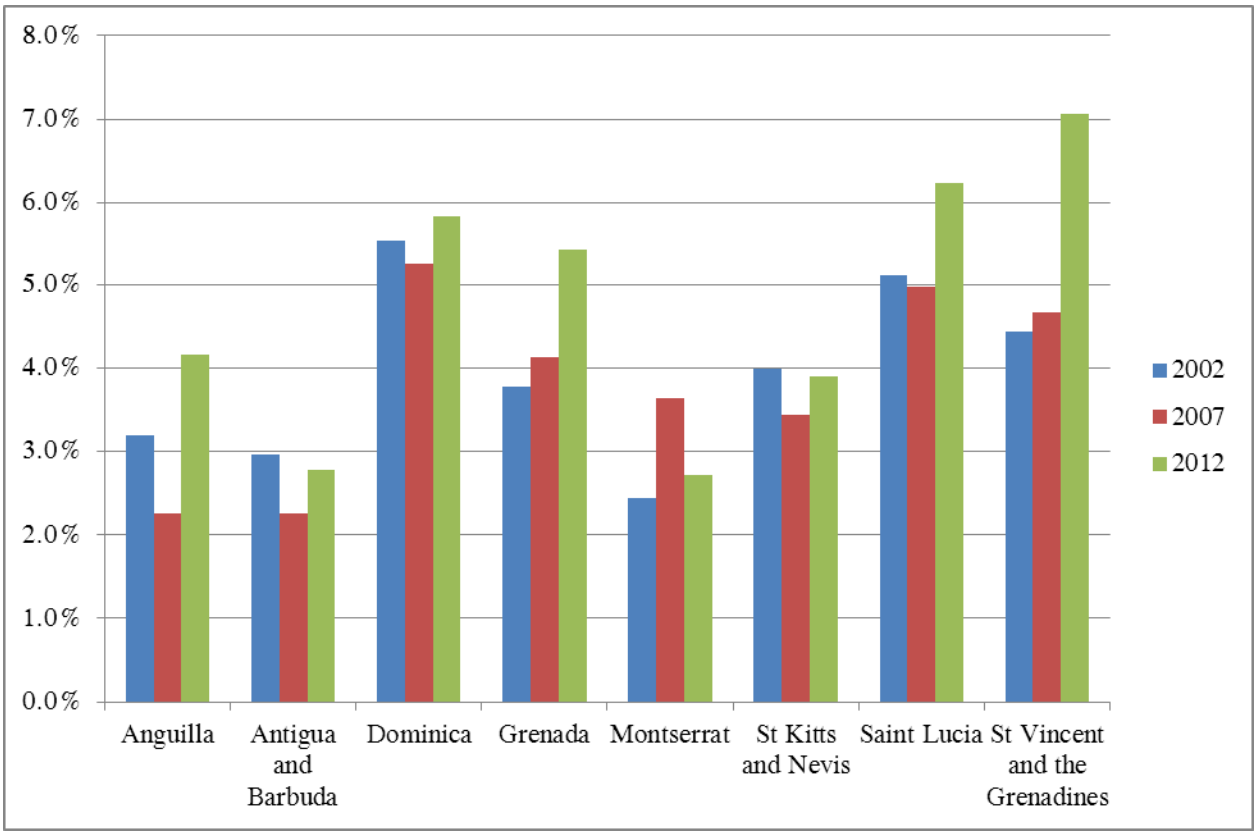
The education system in the ECCU is being transformed to move in tandem with the OECS Development Strategy so that the vision for the territories can be realised. This has required increased investment, modernisation and raising the standard of education and attainment in the sub-region. With universal secondary education as the new bar in the territories, governments have had to tackle access issues, teacher training, assessment and certification and other challenges. To this end, at the national level in line with the sub-regional strategy, educational plans have been developed. Improved access to tertiary education and technical and vocational education and training have also been priority areas.

In the ECCU the level of government expenditure on education, excluding central administrative expenses on education, as a percentage of GDP, is not very high when compared to countries in the region like Barbados, Cuba and Guyana, and developed countries like the United Kingdom, Australia and Sweden. As shown in Figure 4, government expenditure on education as a percentage of GDP in 2012 ranged from 2.7 per cent in Montserrat to 7.1 per cent in St Vincent and Grenadines. The cross country differences in the level of spending by the Ministry of Education may be partially explained by the administrative structures in the respective countries. For example, in Antigua and Barbuda even though basic education is primarily financed by Government, other education related

[51] The Organisation of Eastern Caribbean States (OECS) came in to being in 1981 when seven Eastern Caribbean countries signed the Treaty of Basseterre agreeing to cooperate with each other and promote unity and solidarity among the Members.

activities are financed through the Board of Education, a statutory body established in 1994 for the purpose of managing an Education Levy.

Figure 4: ECCU Comparative Expenditure on Education as percentage of real GDP (Excluding Administrative Expenses)



While government spending on education in the territories has generally seen a year on year increase in the value of spending, see Table 8, the share of education to total expenditure has been fluctuating and in the recession period commencing 2008, the share narrowed in most of the countries by 2012 relative to 2002. The Governments' budgets have many other competing demands and this means that alternatives will have to be found such as increased use of private resources. If there are no means of supplementing direct government provision, it may lead to administrators facing mounting challenges to maintain the goals of equity and quality across the education system.

Table 8: ECCU Government Spending on Education, Excluding Administrative Expenses, XCD

Territory	2002	2007	2012
Anguilla	12,979,909 (13.5)	16,484,727 (10.5)	22,985,607 (12.5)
Antigua and Barbuda	59,362,377 (9.9)	63,816,264 (7.7)	65,551,783 (8.7)
Dominica	43,715,576 (21.5)	46,990,945 (17.5)	57,108,285 (15.7)
Grenada	52,378,502 (15.6)	73,450,346 (17.6)	89,646,928 (15.7)
Montserrat	2,773,480 (4.2)	4,789,059 (5.3)	3,871,200 (3.1)
St Kitts and Nevis	51,870,441 (14.5)	52,872,301 (9.4)	55,909,000 (12.2)
Saint Lucia	105,201,785 (21.3)	123,134,375 (17.7)	162,313,540 (16.9)
St Vincent and the Grenadines	51,030,062 (16.5)	67,880,585 (15.1)	99,809,976 (16.4)

Source: Compiled from the 2002, 2007 and 2012 Budget Estimates of the individual territories
Note: Figure in brackets represents the percentage share of education expenditure to total expenditure

The pool of tertiary institutions in the ECCU is deepening as the territories attract more offshore universities and these institutions grow and expand the programmes offered. More residents of the islands need to enroll in these schools to truly leverage the potential benefit of these institutions to the territories. This may require the governments negotiating more scholarships for nationals and increased public relations or advertisements in the ECCU.

The tertiary institutions in the ECCU need to strengthen their research arm. The mechanism of R&D in the sub-region has generally been in the research arm with basic research in the university campuses like the University of the West Indies and applied research in organisations classed as government agencies, where financing has been largely aimed in the

area of innovation to combat pestilence and diseases prevalent in the ECCU. There has been increasing attention to the development arm of R&D in the sub-region in areas such as tourism, energy and information technology.

R&D activities in the ECCU are mainly driven by the government. While in some cases it may be necessary for the government to participate in R&D ventures, private sector involvement needs to be improved. Governments have identified R&D projects in the region, and they are largely focused on the agricultural sector. On an individual country basis, the independent ECCU countries benefit from bilateral arrangements with friendly governments like France, Taiwan and the Republic of China. Technical cooperation from these governments has enhanced the potential of the agricultural system, in terms of production and management techniques, thereby improving the quality and quantity of exports.

On the Information, Communication and Technology platform, there is evidence of efficient product development in the sub-region with the implementation of e-services for public administration as seen with the electronic government regional integration project (E-GRIP).

The R&D agenda at the OECS level seeks to widen the scope of activities to include more work in tourism, energy and information technology by setting up bodies and institutions across the territories. This, however, does not speak to R&D as a market activity by private firms. Policies need to be developed to promote and incentivize activities in R&D by the private sector.

4.0 CRITIQUE OF POLICY OPTION(S)

Human capital is related with the knowledge and skills embodied in humans that are acquired through schooling, training and experience and are useful in the production of goods, services and further knowledge (Kumar, 2006). As identified in the OECS Development Strategy, as a strategic response to low competitiveness and a mismatch of labour needs and supply in the OECS, part of the vision is to have "*a region managed by highly educated and skilled individuals, who are the products of an education system that places high quality, relevant and*

affordable education and training opportunities, within easy reach of all persons, regardless of their age and/or status in life."

In spite of critical improvements in the education system, studies by the International Monetary Fund (IMF) show that when compared to comparator countries, the ECCU is deficient in some areas especially related to inefficiencies in the way that public funds are spent on education. Recommendations proposed by the IMF in 2011 for the short-term were to increase student-teacher ratios through attrition, reallocating existing spending towards non-salary components; better targeting of subsidized educational programmes and introducing or raising user fees at the tertiary level. The response by the Governments since the publication has not been to reduce the number of teachers, have multi-grade teaching or to reduce the number of schools but rather quite the opposite.

Studies, such as that conducted by the IMF, found that there is under-provision to education institutions resulting in schools being under resourced, regular operating and maintenance services neglected and insufficient teacher training which have a damaging impact on the quality of education proffered.

Monitoring and reporting mechanisms since the implementation of the education strategies remain weak with little public information available on demographic changes, attainment changes, and other statistics and ratios.

While there has been improved coordination in education with the OCES Education Sector Strategy 2012 to 2022 having been launched, administrative costs remain high and budget projections show a continued upward trajectory. Improved coordination in areas such as curriculum development would help to reduce costs.

Policy direction and programmes for R&D as a sub-region have been few and there is little to no coordination, resulting in high cost and risk activities. Lack of effective planning, limited technologies and financing constraints are all hindrances in the development of R&D activities in the OECS.

5.0 CONCLUSION

The roles of Education and Skills Training and R&D have been clearly highlighted in this paper as necessary tools towards transforming the economies and further emphasises the acknowledgment of their relationship to economic growth, which is recognised by their position in the Seven Great Modernisations.

A crucial footing of this study is that the sub-region is not competitive and it is being bandied that the labour force lacks the requisite skill sets to be efficient agents in the production process. The sub-region needs intervention and reforms in these areas that inform the medium to long term strategy and influences the work programme coordination within the OECS. The issues discussed and issues presented further reinforce the relationship and highlights the need for governments not to compromise investment in Education and Skills Training and R&D in spite of tight budget constraints. However, there needs to be enhanced resource mobilisation and inputs of private resources to ensure that the reforms are effective and produce high quality outcomes. Public-private partnerships are important for the sustainability of the systems.

Likewise, industry-government consortia are important for collaborative R&D activities to maximise the limited available technology in the region. A holistic and comprehensive framework is needed at a sub-regional level for R&D.

Appreciation, adoption and adaptation of the recommendations presented will assist the development process and further accelerate sustainable development in the sub-region.

6.0 POLICY RECOMMENDATIONS

Enduring questions that remain to the forefront for the researcher are: first, how can policy makers use Education and Skills Training to improve the skill sets of workers in the ECCU and thereby improve their efficiency and productivity with a spin-off of spurring growth? Secondly, how can R&D be employed to strengthen sectors, create and expand absorptive

capacities, drive sectors into new phases and push economic recovery? These two (2) questions have policy implications that are summarised in this section.

The reform of the ECCU's education system is touted as a priority by the governments. The current setting requires large public investment in the system, the situational context makes it glaringly apparent that the territories lack the financing to cope with increasing enrolment and the modernisation thrust, thus jeopardising the desired quality of education being offered. This means that governments must explore tuition or a **school fee option**, so that there is separate income to invest in facilities. This may have a negative impact on enrolment and school completion rates as it may hinder equal access. An alternative may be tapping into private resources. Further research is needed in this area.

An action would be to create **an independent quality assurance organisation or mechanism** that would measure the educational outcomes and costs to government. This same body can also monitor quality and learning across the sub-region to ensure that is a minimum standard across the OECS.

There also needs to be a good, modern **statistical and monitoring system** established that should be harmonised with international classifications. This will assist studies on unit costs, assessments of student learning and other monitoring of the education system.

The reform generally covers primary and secondary level education; but also seeks to improve access to tertiary level education. To increase participation at the tertiary level, policies may be needed to **relax financial constraints**. Case in point, findings from a household survey indicated that in Saint Lucia, 11.4 per cent of the students in tertiary education came from poor households, which may be indicative that "needy" individuals are not able to attend university. Funding programmes can include incentives like a loan system where repayment may be income contingent, grants and increased scholarship opportunities.

Policies aimed at **improving the dynamism of the labour market** can also have a positive effect on incentivising participation in tertiary education. **Internships and apprenticeships** options may also be examined.

Possible areas for further research include:

- Studies on school effectiveness
- Studies on the sustainability of the "Education for All" policy in the ECCU
- Studies to understand the constraints hindering the transition from secondary to tertiary education

A pull factor for R&D is the availability of trained and skill persons able to do research. Therefore, through **good education** and enabled by the availability of **R&D support services**, the region can increase research effort. Given that services are high on the policy agenda for the ECCU, there needs to be active action in **developing strategies and instruments** for supporting R&D in services, that will lead to new concepts and service business development for private business R&D; identifying important recipients of public sector R&D funding; and having as an important goal the actual practice of the research findings.

The future concern for the ECCU should be creating a regional programme where R&D activities will create products and services for markets. The sub-region must pay attention to the importance of R&D in services and focus on gaining a better understanding of the specific features of R&D in services, and related indicators development. The following actions are recommended:

1. Develop a R&D definition for the ECCU area.
2. Set-up an expert group that can identify a way forward in the development of a favourable framework for R&D in the ECCU. Early initiatives that can be adopted include:
    - Encouraging a more positive attitude towards research and development;
    - Providing incentives to private initiatives,

- Drawing attention to the consequences for training and recognised qualifications and support;
- Facilitating appropriate implementation strategies, and
- Promoting networking with other economic sectors of the economy.

3. Approach Caribbean Universities, hosted Universities and Research Institutions to explore potential research activities and partnerships
4. Create research sub-programmes focusing on R&D in priority areas
5. Perform joint research activities by member territories in the various areas.

REFERENCES

Barro, R.J. (1991) "Economic growth in a cross section of countries" *Quarterly Journal of Economics*, 106, 407-44.

Benabou, R. (1996) "Equity and efficiency in human capital investment" *Review of Economic Studies,* 63, 237-64.

Benhabib, J. and Spiegel, M. (1994) "The role of human capital in economic development: evidence from aggregate cross-country data" *Journal of Monetary Economics*, 34, 143-73.

Bilbao-Osorio, B. and Rodríguez-Pose, A. (2004) "From R&D to Innovation and Economic Growth in the EU Growth and Change" 35: 434–455. doi: 10.1111/j.1468-2257.2004.00256.x

Fernandez, R. and Rogerson, R. (1995) "On the political economy of education subsidies" *Review of Economic Studies*, 62, 249-62.

Jones-Henderickson, S.B. (2011) "Economic Essays on St. Kitts and Nevis" Eastern Caribbean Institute, Virgin Islands

Jules, D. (2010) "Rethinking Education in the Caribbean" The Caribbean Examiner, Vol. 8, No. 2 pp. 6-11

Kumar, C.S. (2006) "Human Capital and Growth Empirics" The Journal of Developing Areas, Vol. 40, No. 1 pp. 153-179

Lucas, R.E. (1988) "On the mechanics of economic development" *Journal of Monetary Economics*, 22, 3-42.

Machin, S. (2008) "The New Economics of Education: Methods, Evidence and Policy" Journal of Population Economics, Vol. 21, No. 1, pp. 1-19

Mankiw, N.G., Romer, D. and Weil, D. N. (1992) "A contribution to the empirics of economic growth" *Quarterly Journal of Economics*, 152, 407-37.

Martins, J.O., Boarini, R. Strauss, H. and de la Maisonneuve, C. (2009) "The Policy Determinants of Investment in Tertiary Education" *OECD Journal: Economic Studies*

Romer, P.M. (1989) "Human Capital and Growth: Theory and Evidence" NBER Working Papers 3173, National Bureau of Economic Research, Inc.