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Nathan Associates Inc. Emerging Market Economics

Caribbean Export Development Agency

Caribbean Region Investment Climate Study

Final Report

Acknowledgments

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Abbreviations

ABAA	Antigua and Barbuda Airports Authority
ABDB	Antigua & Barbuda Development Bank
ABIA	Antigua & Barbuda Investment Authority
AD	Airports Department
AID Bank	Agricultural and Industrial Development Bank
APUA	Antigua Public Utilities Authority
BAA	Belize Airport Authority
BACC	Belize Airport Concession Company
BEL	Belize Electricity Limited
BPA	Belize Port Authority
BRAGSA	Roads, Buildings and General Services Authority
BTL	Belize Telemedia Limited
BWS	Belize Water Services
CAA	Civil Aviation Authority (Belize)
CAIPA	Caribbean Association of Investment Promotion Agencies
CBB	Central Bank of Belize
CFE	La Comisión Federal de Electricidad
CROSQ	CARICOM Regional Organisation for Standards and Quality
CWSA	Central Water and Sewerage Authority
C&W	Cable & Wireless
DASPA	Dominica Air and Sea Ports Authority
DCS	Development Control Section
DFC	Development Finance Corporation
DHRD	Department of Human Resource Development
DOMLEC	Dominica Electricity Services Limited
DOWASCO	Dominica Water and Sewerage Company
ECTEL	Eastern Caribbean Telecommunications Authority
FAA	Federal Aviation Administration
GAA	Grenada Airports Authority
GAC	Grenada Airlift Committee
GBA	Grenada Banker's Association
GBT	Grenada Board of Tourism
GCIC	Grenada Chamber of Industry and Commerce
GCSO	Grenada Central Statistical Office
GDB	Grenada Development Bank
GIS	Geographic Information System
GMOA	Grenada Ministry of Agriculture
GPA	Grenada Ports Authority
GRENLEC	Grenada Electricity Services Limited
GrenSol	Grenada Solar Limited
IADC	International Airport Development Company
IDB	Inter-American Development Bank
IPA	Investment Promotion Agency
ITVET	Institute for Technical and Vocational Education and Training
LAC	Latin America and the Caribbean

LMIS	Labour Market Information System
LUCELEC	St. Lucia Electricity Services Limited
MOW	Ministry of Works (of Belize)
MSMEs	Micro, Small and Medium Enterprises
NAWASA	National Water and Sewerage Authority (Grenada)
NDC	National Development Corporation (St. Lucia)
NIS	National Insurance Services
NTRCG	National Telecommunications Regulatory Commission of Grenada
NTRCSVG	National Telecommunications Regulatory Commission of St. Vincent and the Grenadines
OECS	Organisation of Eastern Caribbean States
PPUG	Physical Planning Unit of Grenada
PPUSVG	Physical Planning Unit of St. Vincent and the Grenadines
PUC	Public Utilities Commission
RLBIA	Robert L. Bradshaw International Airport
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCAPSA	St. Christopher Air & Sea Ports Authority
SIB	Statistical Institute of Belize
SKED	St. Kitts Electricity Department
SKIPA	St. Kitts Investment Promotion Agency
SLASPA	St. Lucia Air and Sea Ports Authority
SVGPA	St. Vincent and the Grenadines Port Authority
TAMCC	T. A. Marryshow Community College
TEU	Twenty-foot Equivalent Unit
TVET	Technical and Vocational Education and Training
UWI	University of the West Indies
VINLEC	St. Vincent Electricity Services Limited
VoIP	Voice over Internet Protocol
WSD	Water Services Department (St. Kitts and Nevis)
WASCO	Water and Sewerage Company (St. Lucia)
4G	Fourth Generation

1 Introduction

This Study was undertaken within the framework of the Caribbean Trade and Private Sector Development Programme being supported by 9th European Development Fund. It aimed to support the regional private sector by examining the regulatory environment for private sector development and investment, and to complement ongoing initiatives addressing other regional investment climate issues.

The objective was to conduct an investment climate assessment for the following 7 CARIFORUM member states, Antigua and Barbuda, Belize, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines. The assessment was to focus on the availability of infrastructure (power, transportation, telecommunications and water), land, labour and capital for investment purposes in each country.

The Study was completed in 3 phases; a literature review, an investment climate analysis involving fieldwork in the 7 project countries and development of recommendations for improvements. This Final Report summarises the key findings of the fieldwork, drawing upon them to identify investment opportunities and areas that could benefit from reform.

The Study has generated a very large amount of information, both qualitative and quantitative, on each of the 7 countries examined. This Report strikes a balance between presenting the information in detail and providing an accessible and easily digestible document for all stakeholders. The complete results for each country are presented under individual chapters, while the material preceding them serves as a standalone summary of the entire project. Stakeholders in each of the 7 project countries should supplement the summary information with the more detailed findings presented on their respective countries. Other stakeholders can draw upon the summary information to get a brief, but still comprehensive, review of the Study's findings and recommendations.

2 Summary of Findings and Recommendations

This Study has captured a great deal of data on the investment climate in the 7 countries covered by the project: Antigua and Barbuda, Belize, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines. While these data will be of use to stakeholders in each of those countries, the information that has emerged from the analysis can also be instructive to stakeholders with a variety of other perspectives, including those in other small island economies of the Caribbean and those taking a more regional view. This chapter outlines the methodology used to conduct the Study, presents an approach to analysing the information gathered and summarises the findings. Lessons learned and recommendations are built into the discussion throughout this chapter.

2.1 Methodology

The project was completed in 3 distinct phases, a literature review, an investment climate analysis involving fieldwork in the 7 project countries and development of recommendations for improvements. The aim of Phase I, the literature review, was to determine the critical areas that impact the investment climate and thus provide a contextual backdrop to the Study. Phase II, the investment climate analysis, involved fieldwork in each of the 7 countries included in the Study and the focus of these activities was on gathering quantitative and qualitative data on the availability of infrastructure, land, labour and capital for investment. To facilitate this process, an analytical framework covering several indicators in each of these areas was designed. The blank framework is provided under Annex I and the indicators used can be found there. Within infrastructure, the analytical framework covered power, water and sanitation, telecommunications and air, sea and road transportation. This brings the total number of areas examined to 9. The investment promotion agencies (IPAs) in each country acted as local facilitators by assisting with data collection and arranging meetings with stakeholders.

The data the framework captured helped to develop a profile of the investment climate in each country. These profiles served as the basis for developing a set of recommendations for improvements in the areas of infrastructure, land, labour and capital during Phase III. The draft Final Report was presented to stakeholders from the Caribbean Association of Investment Promotion Agencies (CAIPA) at a consultation in Suriname for feedback. The Final Report incorporates the comments received at that event and summarises the key findings of the fieldwork, drawing upon both to identify investment opportunities and areas that could benefit from reform.

2.2 Lessons Learned

2.2.1 Data Availability and Quality

The availability of data from one area of analysis to another varied quite widely between countries, as well as from area to area within countries. The experience of attempting to gather a uniform set of data in this environment has yielded the following lessons:

1. **Data in the hands of IPAs varies:** In many instances the information sought by the analytical framework had to do with relatively general information about the business

environment, such as shipping costs or speed and cost of broadband access. Much of this is information that many investors would consider at an early stage of the investment decision making process and up to date information should be available through IPAs and should appear on their websites as well. This was not always the case. Although the IPAs had the ability to source this information, it is important to have a process for ensuring it is updated regularly and made available through investor contact points, which includes staff and websites.

2. **Data on utilities is the most comprehensive:** This is an unsurprising result, given the need for utilities providers to have accurate information on the extent and functioning of their infrastructure for maintenance and investment purposes. However, some utilities providers did face some challenges in presenting certain information, such as incidences of power outages or their length.
3. **Data on labour is minimal and of poor quality:** Of all the areas of the investment climate addressed by the analytical framework, the availability and quality of data on labour is the most lacking. Given that all the countries covered by the Study are service-based economies, a sector that depends critically upon the cost and availability of labour to be successful, this effect of this gap becomes more pronounced. Systems for assessing the labour pool and tracking it are lacking, but the introduction of a Labour Market Information System (LMIS) in countries such as Belize and St. Vincent and the Grenadines could help the situation.
4. **Data on land stocks is also poor:** Many planning authorities do not have comprehensive information on land stocks available. Licensing authorities do not always systematically track and sum their planning approvals, so getting a sense of recent trends in demand for land use is also difficult. A lack of technology hinders the ability to take stock and keep track of this vital resource.
5. **Timeliness of data:** Even where data was available it was often many years old, diminishing its usefulness in determining the quality of and challenges to the investment climate.

The picture that emerges is one that these countries lack key data that are vital to supporting efficient policy processes. Without a clear sense of where challenges and areas of competitiveness lie, policies and reforms to either address obstacles or harness potential cannot be made effectively. For example, if a country has decided to pursue investment in the call centre industry, it must have a clear sense of the size of the labour pool for this type of work, where its skills lie (either in low-value added outbound voice services or higher value functions such as claims processing) and the labour cost of the various skill sets. If it does not, it cannot effectively target investment, if it is ready to do so, or implement policies to develop a workforce that will allow it to compete effectively in this industry. Recommendations on addressing data issues generally and in the areas covered in the analytical framework are made below.

2.2.2 Lessons Learned: Data Collection

At the conference in Suriname, some IPAs indicated a need to use information to generate buy in from governments for investment climate reforms. Others indicated that the Study provided a useful basis for assessing competitiveness and constraints as it focused on gathering information investors would find useful. Many IPAs in the small economies of the Caribbean suffer from severe resource constraints that limit staff numbers and use of technological tools,

which restricts their ability to gather information for lobbying and investor facilitation. However, it is possible to take a strategic approach to developing low cost systems that will improve efficiency of data collection and help to ensure relevant information is gathered.

The analytical framework used in this Study could help in this regard by providing the basis for developing investor fact sheets. There are caveats to this approach, because investors' information requirements will vary from industry to industry, so fact sheets will need to be tailored appropriately, providing a mix of generic information on the business environment and industry-specific information. The analytical framework used in this Study could provide a basis for IPAs to develop such fact sheets and so it is appended to this Report under Annex I. By engaging with investors through promotion and facilitation functions, IPAs should get a sense of what information investors require in certain industries, which will allow them to tailor fact sheets, as well as where investors feel the country is not competitive, which will allow them to present evidence of deficiencies in the investment climate as the basis for reform. In order to ensure data is up to date and comprehensive while minimising time spent on collection, the following steps are recommended:

1. Use analytical framework under Annex I to develop tailored investor fact sheets based on priority investment areas.
2. Distribute fact sheets to ministries, government agencies and the private sector, directing them to provide data points as relevant. In some cases, such as cost of types of labour, estimates will be required. Ask respondents to indicate when during the year they will be able to provide updated information.
3. Analyse data points for which there is more than one response and decide on a final figure. For estimates, it may be necessary to take an average or provide a numerical range.
4. Compile completed fact sheets and provide to investors as required and publish on website.
5. Revise fact sheets based on investor feedback on an ongoing basis.
6. Maintain database of sources of information on each data point and when during the year they are to be contacted for updated data. Implement an automated reminder system to ensure contact is made with a source when revised data becomes available. Continue to update fact sheets on a rolling basis.

2.3 Summary of Findings

This Study has captured a great deal of information on the investment climate in each of the 7 countries covered. Unfortunately, uniform data were not available across all countries, making it difficult to carry out quantitative regional comparisons to establish competitiveness in all the areas surveyed. Where comparable data are available, which is mainly in infrastructure, comparisons on key indicators have been made if useful. In all areas of the investment climate examined, the qualitative information gathered helped supplement or stand in for the numerical data and using the totality of information available allows for some useful analysis.

As would be expected, the OECS countries in the study exhibited a fair amount of similarity in each of the 9 areas examined, while Belize often presented a different case. This is not to say that the cost and quality of services was even across the Eastern Caribbean, it is not, but in a number of cases, the level of development in terms of infrastructure, land, labour and capital is

quite similar, as are the challenges to making improvements. Therefore the sections below discuss each of the 6 aspects of infrastructure as well as the 3 factors of production in turn, summarising the prevailing conditions in the region, pointing to circumstances particular to a certain country and conducting comparative analysis where relevant and possible within data coverage. Opportunities and recommendations for each area are also provided.

Carrying out this analysis has shown that all of the countries examined could make improvements to their investment climate, and that the cost of even the most pressing improvements is very large. Therefore it is important to take a strategic approach to addressing investment climate issues so that the limited resources available are used effectively. The section below sets out recommendations for adopting an approach and precedes the sections summarising the findings on each aspect of the investment climate.

2.3.1 Addressing Investment Climate Competitiveness: A Demand Driven Approach

Comparing performance on various elements of the investment climate can be somewhat useful in determining a country's level of attractiveness to investors. However, an investor will consider several factors in coming to a conclusion about how attractive a particular location is for investment, and this combination of factors will vary depending on the type of investment being considered. Therefore it is critical for a country to bear in mind the specific industries to which it is seeking to attract investment and the particular mix of factors that are relevant in each case.

The importance of doing so becomes more pronounced when one considers that making improvements to the quality and cost of infrastructure, land, labour and capital requires huge resources and is a job that is never done. The countries covered by this Study face major resource constraints, and that has been universally identified as one of the main challenges to improving the investment climate. So the limited resources that are available need to be allocated to addressing the areas that present the greatest restrictions to the type of investment a country is targeting. In this regard, it is important for public policy decision makers to think like their "customers", which are potential investors. Since one of the main reasons for any country to make improvements to its investment climate is to foster private sector development and investment, this customer perspective is an invaluable one and it provides a useful means of effectively targeting and prioritising investment climate reform.

The main factor that investors consider when deciding whether to proceed with a project is the risk-adjusted rate of return on the investment. The various aspects of the investment climate addressed by this Study either affect the size of the return or affect risk. Where certain factors fall and the extent of their impact will vary depending on the type of the investment. Getting an understanding of that interplay in certain industries can play an important role in guiding policy choices.

As discussed above, there are serious limitations on the availability of data to support efficient policy formulation regarding the investment climate. All 7 of these economies are service based and that sector's dominance in these economies will only increase. The implication of this is that human capital will form the basis of economic activity and data is lacking in that area more than any other. Deficiencies on supply side data will still need to be addressed to make fully

informed policy choices, but adopting an investor or demand-side perspective can provide partial guidance while data collection methods are improved.

Therefore national IPAs have an important role to play in informing the agenda for investment climate reform in their countries. Although they may not be able to exercise direct control over matters such as infrastructure improvements, their position on the frontline of investor contact means they can gather feedback from existing and prospective investors on the competitiveness of the investment climate. It is important that they have adequate channels for communicating this perspective to policy makers to guide reform.

2.3.2 Power

2.3.2.1 Findings

In general terms, access to electricity in all of the countries is quite good, due to their small size and typically concentrated population centres. Belize is a slightly different case as it is much larger in area, which means that it is not viable to invest in linking low population areas into the main grid. As a result, only 82% of the population in that country has access to electricity.

Most of the countries rely on diesel for their power supply and this leaves them vulnerable to fuel price volatility, and can represent a significant source of expenditure. Grenada's spend on diesel, for example, represented 3.7% of GDP in 2009. Fuel surcharges are often imposed as a means of passing on costs when fuel prices are high. Belize, Dominica and St. Vincent and the Grenadines have access to hydropower and this helps them to defray the cost of fuel. The supply infrastructure is sufficient to meet anticipated growth in demand over the long-term for most countries.

At the time of data collection, the cost of electricity in St. Kitts was the lowest in the OECS, but a rate hike was planned to take effect in January 2011. That, along with plans to privatise the parastatal in April 2011, was expected to change the landscape of the power supply situation in the country significantly. So the figures on the cost of power for St. Kitts that appear in the table below may need to be updated and should be interpreted cautiously.

Table 1: Power Cost Comparison

Country	Cost to Commercial Consumer Using 2,000 kWh/month (US$)	Rank
Belize	$467.50	1
St. Kitts and Nevis	$558.95	2
St. Lucia	$656.63	3
Grenada	$718.59	4
St. Vincent & the Grenadines	$758.95	5
Antigua & Barbuda	$811.59	6
Dominica	$923.00	7

Reliability was an issue in some countries, with the utility reporting 2.8 blackouts per month in Antigua and Barbuda, while the private sector claimed the figure was more on the order of 4 per

month. Belize faced roughly 3.4 blackouts per month in 2009. In St. Kitts, problems with the reliability of supply meant that some investment in private generators was required.

2.3.2.2 Opportunities and Recommendations

The main opportunities in power supply for all 7 countries lie in developing renewable energy sources. Given the cost and fiscal risk posed by relying solely or heavily on diesel for power generation, the recommendation in this area is also to pursue the development of renewable energy sources.

Solar power is an opportunity in all of the countries and a private company in Grenada is active and has installed 25 photovoltaic, grid-tied, solar electric systems. There are regulatory issues around tying such systems into the grid and a proposal to cap the amount of power generated by these systems was being considered at the time of research. The reasons behind this proposal were not made fully clear, so further comment on this issue is difficult, but it would seem to be an action to preserve the market share of the electricity company. Whether or not such a cap is implemented will provide some perspective on Grenada's commitment to renewable energy sources. How Grenada proceeds on this issue could also be instructive to other countries looking to encourage investment in this area.

Wind power is also a possibility for all these countries and Antigua and Barbuda, Grenada, St. Kitts and Nevis and St. Vincent and the Grenadines are at various stages of scoping and developing such facilities, actively seeking investment in some cases. Belize, Dominica and Vincent and the Grenadines have an opportunity to further develop their hydropower generation capacity. Belize is tied into Mexico's power grid and has an option to call down a certain amount of power when needed. This connection could also present an opportunity to sell power the other way.

Geothermal energy is possible in Dominica, Grenada, St. Kitts and St. Lucia and represents huge potential sources of energy in each country that would far outstrip their needs. The large capital investments required to develop this resource do call into question the economic viability of geothermal power, but if the excess power could be exported, investments could become more attractive. Dominica is probably at the most advanced stage of developing this resource and the European Union has already invested in technical studies and surface drilling. Depending on the availability of investment, the feeling was that Dominica could begin domestic supply from geothermal energy within 5 years, and has the possibility to export power to the nearby French islands after that.

2.3.3 Water and Sanitation

2.3.3.1 Findings

As with power, water supply penetration rates were high in the Eastern Caribbean, around 90% and above. Again, Belize's geography means that coverage is not nearly as extensive, although exact figures were not available. Adequacy of supply was not usually a problem, and shortages and rationing only come about in times of drought. St. Kitts indicated that growth in tourism and agriculture could see demand for water double in 10-15 years, and has plans for tapping into undeveloped ground water reserves to meet this demand.

Sanitation is not nearly as well developed and centralised sewage systems are typically confined to the main urban areas of each country. St. Kitts and Nevis and Antigua and Barbuda are the exceptions and neither have any centralised wastewater treatment systems. In the case of the 5 countries with centralised facilities in urban areas, only Belize provided a level of treatment that resulted in wastewater not being harmful to the environment. With much of this wastewater being pumped out to sea, there would seem to be some environmental concerns about the impact this could have on the marine environment which underpins the tourism industry of all of these countries. In some cases, the infrastructure of these centralised facilities is old and taxed and in need of investment. Outside of the urban areas, septic tanks and soakaway systems are used for waste disposal. In some countries, Grenada for example, the utility felt this was a suitable form of waste disposal as a high water table only exists in an area served by the centralised system. Many hotel developments provide their own sewerage systems.

2.3.3.2 Opportunities and Recommendations

As water supply is typically adequate in these countries, most of the investment that is required is to maintain the existing systems. For many of these countries, droughts affect the low-lying coastal areas which house most of the population. And during these episodes, there is not necessarily an overall shortage of water, but simply a lack of it in these drier areas. Investing in increased storage capacity and interconnection of stores could help to minimise the impact of such supply imbalances during droughts. St. Vincent and the Grenadines made such investment in response to a 2009-2010 drought and the feeling is that this should help alleviate problems during future dry spells. Outside of this, St. Kitts and Nevis is probably the most active of the countries in developing its water supply and is looking to increase daily production levels from 7.21 to 12 million US gallons.

There is a major need for investment in sewage infrastructure in all these countries, both in terms of upgrading centralised systems and expanding their coverage. Assessing the environmental ramifications of disposing of harmful wastewater at sea and the widespread use of septic tanks and soakaway systems was beyond the scope of this study. Utilities providers did not seemed concerned about the potential environmental impacts from these systems on the natural environment of their countries, despite the obvious links between tourism and the environment. Therefore there may be a need to carry out impact assessments to determine the urgency of the risk and establish the need for investment. In most cases, the required investment is far beyond the means of the local utility to fund and so external assistance may well be needed.

The need in St. Lucia is even more pressing and extends to water supply infrastructure. Hurricane Tomas damaged the infrastructure and weakened the already poor fiscal position of the Water and Sewerage Company. Without direct support, it will be difficult for the Company to address water supply issues and make improvement to the sewage infrastructure.

2.3.4 Telecommunications

2.3.4.1 Findings

Of all the various aspects of infrastructure in these countries, telecommunications has seen the greatest amount of private sector activity and investment over the past decade or so. Liberalisation of the industry has allowed private companies to break the monopolies that prevailed in all 7 countries in varying forms and the level of competition has gradually increased as more players have entered the market. This increased competition has led to lower prices, higher telecoms penetration rates and better technology. Growth in mobile use has been explosive and that trend, along with the spread of broadband, which enables the use of Voice over Internet Protocol (VoIP) for communication, is increasingly eroding fixed line revenues.

5 of the 7 countries, with the exceptions of Belize and Antigua and Barbuda, are members of the Eastern Caribbean Telecommunications Authority (ECTEL). ECTEL has had a positive regulatory impact and has pushed for improvements in service and the legal framework governing the industry and interactions between service providers. The pattern of activity post-liberalisation in the non-ECTEL countries has generally followed the one observed in the ECTEL islands. However, the actual impact in terms of broadband costs has been quite mixed, as shown below.

Table 2: Internet Penetration and Cost of Broadband

Country	Internet Subscribers (% of population)	Monthly Cost of 2 Mb/second Broadband Connection (US$)
Grenada	12.0%	$25.92
Dominica	10.6%	$32.96
St. Kitts & Nevis	29.4%	$36.67
St. Lucia	11.8%	$50.17
St. Vincent & the Grenadines	10.4%	$61.57
Antigua & Barbuda	18.9%	$62.59
Belize	3.1%	$182.50

Interestingly, the 5 ECTEL countries all have lower broadband costs that the non-ECTEL countries. Antigua and Barbuda is not far off the pace set by the laggards among that group, but broadband in Belize is nearly three times the price of the same connection in the next most expensive country. This is perhaps explained by the fact that BTL, the state-owned company, controls the country's external fibre optic connection and sells access to the private service provider, so competition is not as open as in the Eastern Caribbean. Disputes between the two companies have led to court proceedings recently and so there are some regulatory challenges in Belize's telecoms industry.

Within the ECTEL group, price also varies significantly and the cost of broadband in Grenada is less than half of what it is in St. Vincent and the Grenadines. Although the pace of regulatory harmonisation has been mixed, this does suggest that competition has played a greater role in lowering the cost of service than the ECTEL framework.

2.3.4.2 Opportunities and Recommendations

The key thing to note in this area is that the pace of technological improvements means that investment is ongoing and continues to lead to improvements in the infrastructure and thus service. The countries are at various stages of planning for the introduction of 3G and 4G technologies and further improvements in broadband connectivity are expected with time.

Despite the investment to date and plans for continued investment, internet penetration rates could be improved. Internet access is increasingly important from a social development perspective as it increases access to information and helps with the development of human capital across a wide range of areas, both technological and non-technological. ECTEL reports that limited access to computers has held back internet penetration rates so there could be space to increase investment in this area. St. Lucia has seen a number of public and private initiatives to increase internet usage through centralised access points at community centres and internet cafés. In St. Vincent and the Grenadines, the regulator collects fees from service providers that contribute to a Universal Service Fund, which aims to provide affordable telecoms services to the public, particularly in underserved communities. A project to introduce/improve broadband connectivity at community and learning centres was implemented in 2009, the first such project to be implemented under the Fund in the ECTEL countries. The approaches taken by these 2 countries to filling in the gap left by private service providers could serve as a model for other countries looking to extend the reach of modern telecommunications services.

On the regulatory side, governments will need to remain proactive about developing legislation to accommodate new technology, provide data protection and facilitate e-commerce and continuously open up the industry to competition. The ECTEL countries benefit from a centralised approach to regulation and the combined wisdom this brings, although it does somewhat limit their autonomy. Given the pace of change in this industry, it can be difficult for governments to maintain a suitable legal framework individually, so the benefits from this collective approach may outweigh the drawbacks. It is important that the non-ECTEL countries keep up with these changes and could be guided by the instruments adopted by ECTEL countries.

At the time of research, Belize had a block on the use of VoIP, a result of the desire to preserve fixed line revenues of the state-owned company. This block should be lifted as it leads to reduced competitiveness and could create an adverse perception among prospective investors.

2.3.5 Transportation: Air

2.3.5.1 Findings

Air transportation is of particular importance to these countries as it provides the primary means of arrival for stayover visitors. Although yearly cruise passengers numbers are usually a few times larger than stayover arrivals, those staying in the country typically account for a much larger share of expenditure and are thus the backbone of the tourism industry.

Against this backdrop, the principal issue in terms of air transportation is direct access to the key source markets for tourists such as the US, Canada, the UK and other European countries. As can be seen in the table below, only St. Vincent and the Grenadines and Dominica do not have

direct flights to the US/Europe, which means these tourists need to catch a connecting flight from a regional hub. The challenges with delays in regional flights can make this more of an issue than it might be and is certainly a consideration for American tourists who have very limited vacation time.

Taking Belize out of the equation, there does seem to be some correlation between the number of direct extra-regional flights and stayover arrivals in the Eastern Caribbean. What is unclear is the extent to which more flights lead to increased tourist arrivals. A serious debate has raged in St. Vincent and the Grenadines and Dominica about the viability of constructing and operating an international airport and whether creating such air links will automatically lead to a significant rise in visitor numbers.

Table 3: US/UK Flights Comparison

Country	Direct Flights to US/Europe per Week	Tourist Arrivals (2009)
Belize	56	232,373
St. Lucia	42	278,491
Antigua & Barbuda	26	234,410
Grenada	15	113,370
St. Kitts & Nevis	12	106,408 (2008 figure)
St. Vincent & the Grenadines	0	75,446
Dominica	0	74,923

Construction of an international airport is underway in St. Vincent and the Grenadines and will serve as an important test case for answering this question. This is particularly true as the investment is not being made because the current infrastructure cannot cope with existing passenger numbers. So demand is not leading to this development, rather it is being undertaken with the expectation that the new airport will lead to steady growth in air traffic, rather than a sudden ballooning in business. How this expectation will play out remains to be seen but the principals behind the project anticipate making losses for at least 5 years once operations commence. This project could help other countries in a similar position decide whether or not to undertake similar projects themselves.

More generally, passenger and freight volumes have been hit by the global economic downturn and there is generally a good deal of spare capacity available over the year. Passenger load factors are generally between 50-60%. Revenues within this business are driven primarily by aircraft charges such as landing, departure and navigation fees. Air freight is a small business in these countries and is usually limited to perishables, time sensitive cargo, excess baggage and less than container loads. The implication of these revenue streams is that as passenger numbers recover in line with general economic recovery, taking up the excess carrying capacity, the revenue impacts for airport companies are not likely to be large, but the wider economic impacts from increased visitor numbers could be.

The result of this situation is that most countries, with the exception of St. Vincent and the Grenadines, are making investments in maintaining infrastructure, responding to changes in civil aviation standards and gearing up to deal with gradual increases in passenger numbers.

2.3.5.2 Opportunities and Recommendations

A number of countries offer incentives to encourage carriers to fly routes as a means of expanding and increasing airlift and facilitating access to key source markets. Models of the incentives used by Grenada include:

- **Risk sharing:** Some carriers work on a risk sharing agreement. For example, American Airlines levies a minimum charge per flight into Grenada and as long as the airline's revenue meets that figure, the government does not have to pay anything.
- **Marketing support:** Some carriers receive funds to finance destination marketing. In the case of British Airways, it receives £775,000 each year for flying to Grenada. They use this money to market Grenada as a destination and prepare a marketing plan to demonstrate that the funds are being used for their intended purpose. Virgin Atlantic is under a similar arrangement as is Condor Flugdienst, a German airline, which receives €300,000 annually for marketing support.
- **Joint venture booking:** In partnership with Trinidad and Tobago, Grenada has booked Monarch Airlines, a UK airline, for flights to the two countries. The fixed cost of the flight is shared evenly between the parties and if passenger numbers are sufficient, these costs are recouped. Any profits go to Monarch, while the countries bear the risk of losses. The trade off is the economic benefits they derive from the visitors. At the time of research, the average cost was about £122 per passenger, but as Grenada receives more passengers than Tobago, its average cost is lower.

The Grenada Airlift Committee is responsible for negotiating with airlines on routes into the country. In order to get an understanding of the utility of paying carriers to fly to Grenada, the Committee carried out a study on the economic benefits of visitors from the US, the UK, Canada and Germany. The amount spent on airline support was found to be 37.7% of airport revenues generated and just 3.0% of total passenger spend. This does demonstrate that such incentives can provide significant benefits. Another useful outcome of the study was that it yielded information on the spending patterns and length of stay for visitors from each market. Canadians at US$239 had the highest daily spend and Germans at 14 days stayed the longest. This sort of information is useful in determining where to concentrate marketing efforts and where to extend airline incentives. The details of that study are provided in the chapter on Grenada and the recommendation is that other countries carry out similar analysis to guide their approach to attracting airlift.

2.3.6 Transportation: Sea

2.3.6.1 Findings

Sea transportation is generally uncompetitive for many of the small island economies of the Caribbean. Low trade volumes mean that direct shipping is uncommon and transhipment is usually necessary. This increases the time and cost of shipping, a problem that is exacerbated by slow customs clearance and cargo handling times. This undermines the competitiveness of exporting from these countries, which is one of the reasons that manufacturing industries struggle to be viable. These economies, particularly the OECS countries, are heavily import dependent and so the majority of cargo throughput in ports derives from imports. The

problems with sea transport affect imports as well, driving up their cost and thus the cost base of the country as a whole.

Prior to developing recommendations for improvements, it is necessary to understand the factors underlying the problem, as well as some of the costs involved. The cost of bringing a container from Miami to each country is shown below, with the cost of shipping separated from the cost of offloading and delivery to warehouse.

Table 4: Import Cost Comparison

Country	Import Shipping Costs from Miami (US$/TEU)	Import Handling Costs (US$/TEU for port clearance to delivery at warehouse)
Belize	$950	$275
St. Vincent & the Grenadines	$1,600-$1,900	$167
Grenada	$2,400	-
Dominica	$3,000	$150
St. Kitts & Nevis	$3,500	$125
Antigua & Barbuda	$3,500	$190-$370
St. Lucia	-	$480

Shipping to Belize is obviously significantly cheaper than to any of the Eastern Caribbean islands, which is likely a reflection of higher throughput volumes as a result of its position near larger trading centres and larger export base.

Reducing shipping costs will be a challenge for the OECS countries as it is trade volumes that encourage more participants to enter this business and create competition that puts downward pressure on prices. St. Vincent and the Grenadines has the lowest shipping costs of these 6 countries and is served by 5 shipping companies. Grenada, the next cheapest, is served by 3 companies. Attracting further shipping lines will be a challenge as throughput was down across the board due to decreased economic activity, particularly in construction, following the global recession.

The majority of throughput in the OECS is based on imports, the cost of which is affected by the quality of the infrastructure, but not so the volumes as in the case of exports. For example, if the cost of shipping is high, this can make exports more expensive resulting in a loss of market share and purchasers buying elsewhere, thus reducing trade volumes. Many of the imports for these countries cannot be purchased locally, so need to be brought in, therefore the shipping cost is unavoidable and thus affects the price more than the volume of trade, so long as demand for the goods exists. The economic downturn reduced demand for imports, and so trade volumes fell.

Investing in infrastructure can have an impact on export volumes as it can decrease the time and cost of moving through a port, which can help to reduce the cost of exports, leading to increased trade volumes, thus attracting more shipping lines and eventually bringing shipping costs down as well. However the cost of such infrastructure improvement can be very large and resources for such investments are lacking in many of the these countries. Additionally, for import focused ports, such as those of the Eastern Caribbean, the efficiency gain from such

investment is less likely to lead to increased trade volumes as those volumes are dictated more by demand for goods than by transport quality. And since revenue in sea transport is derived from volumes passing through the port, there is little incentive to invest in infrastructure as it is unlikely to lead to increased trade and thus does not offer a reasonable return on expenditure.

In many cases the tariffs are fixed by the regulatory body and so price increases are unlikely, particularly given that trade volumes are currently depressed. While increase in trade is likely as economic recovery gets underway and demand for import increase, dramatic increases are unlikely and volumes should grow slowly. So if volumes or prices will not go up or will go up slowly, revenue will not go up or will go up slowly. With expensive infrastructural improvements unfeasible, ports and management companies need to consider other means of improving profits against a relatively fixed revenue base, such as making procedural efficiency improvements that will reduce operating costs. This should help them to build up a fiscal position that will eventually allow them to fund directed infrastructural improvements that will lead to further reductions in operating costs.

2.3.6.2 Opportunities and Recommendations

Implementation of improved customs clearance procedures and faster processing times can reduce the cost of providing port services, thus widening profits against what is likely to be a fixed or slowly improving revenue base. With returns on large-scale infrastructure improvements likely to be limited for some time, projects of this kind are more likely to attract investment. The poor fiscal position of the majority of the organisations responsible for ports in these countries means that even these lower cost measures may require donor support.

Improving shipping costs is a more difficult issue to address for the reasons set out above and so recommendations for addressing this challenge are limited. One possibility is to encourage businesses to collaborate on shipping to take advantage of bulk rates. While a relatively straightforward suggestion, this kind of cooperative approach has not always been common in the Caribbean private sector and will likely require the support of local chambers of commerce and industry associations to implement effectively.

2.3.7 Transportation: Road

2.3.7.1 Findings

Responsibility for the roads infrastructure in the countries studied varies in terms of organisational structure and functions. Some countries, such as Belize, have assigned oversight to a government ministry or combination of ministries, while others have assigned responsibility to statutory bodies, as is the case in St. Vincent and the Grenadines. There is also significant variation in the functions assigned to the responsible entity as some carry out maintenance and (usually limited) construction works themselves, while others contract out such works and exercise a management function. This has implications for how the relevant entities are funded and their level of resources and so it is difficult, and of limited use, to make comparisons between the models. What can be said is that the Ministry of Works in Belize perhaps reflected the greatest degree of control over the roads infrastructure of any of the countries and took a highly professional approach to its responsibilities. Its methods of operation and execution of duties could be informative to countries that have a similar organisational model in place.

With the variation in functions, there was also a significant variation in the amount of data available from the relevant organisations. However, the varied geography of these countries means that metrics such as length of network, density of the network and density of paved roads are not useful as comparators. Belize, for example, has a far greater land area than any of the other 6 countries and so has a far larger network of roads than the smaller countries and a lower density in relation to total area. And because of the country's size, much of the road network will have been developed to access remote areas and as such will not be paved, bringing down the density of paved roads indicator. Even within the OECS countries of similar size, comparisons are not useful as the timeliness of the data varies significantly, in some cases dating from 2000, in others from 2010.

What is important for the organisations managing the infrastructure is that they have information on road conditions, traffic and journey times and can use this to prioritise repair and construction works to ensure the infrastructure enables rather than constrains key economic activities. In all of these countries, vast resources are required to carry out necessary maintenance, upgrading and new construction works and the resources available to do so fall well short of basic needs, much less of what could be funded in terms of works. This makes the need to prioritise even more pronounced so that the limited resources available are used effectively. Again, this can only be done if accurate data are available. As an additional benefit, having such information to hand will help preserve the autonomy of the organisations managing the roads infrastructure, reducing the opportunities for political interference in scheduling of works.

2.3.7.2 Opportunities and Recommendations

There is an opportunity to support the development of the roads infrastructure in a manner that prioritises works effectively and ties into wider economic development objectives. For the organisations managing this infrastructure to work in this way, they need to have effective management information systems in place. The approach taken by the Ministry of Works in Belize is instructive in this regard.

The Ministry is in the process of developing a master plan for development and maintenance of the road network, but in the absence of such a formal planning document it has always maintained a list of required works. While construction of new roads and upgrading of existing roads are both on this list, the Ministry contracts out this construction work and carries out all maintenance works in house. From the management information systems perspective, additional equipment such as weight in motion sensors are required and would be beneficial. They would help to automatically count and classify types of vehicles on a particular road, which is currently done by sampling through manual counts. This would provide greater and more accurate information and would help to guide expenditure to areas that most justify the investment. To deal with the equipment limitations, the Ministry tries to take a professional rather than an ad hoc approach to maintenance and cycles through a list of roads and villages based on the amount of time previously spent on maintaining each of them.

This approach is one that other countries without technological systems in place could follow. It provides a methodical approach in the absence of technology and thus an inexpensive means of methodical management until such equipment can be sourced.

The information gleaned from this approach could then be cross-referenced against wider development objectives, ensuring that quality roads are available on key tourism, agriculture and business pathways. In this way, ongoing work on the roads infrastructure would be more effective in creating an enabling environment for private sector activity and investment.

In terms of where additional funds for road works come from, a number of countries have received support from donors in this area. Loans have come from entities such as the Caribbean Development Bank, the Inter-American Development Bank, the World Bank, the EU, the Kuwait Fund, the OPEC Fund for International Development and others.

There are a few more specific opportunities and recommendations that warrant mention:

- Regardless of whether road works are carried out by the public or private sector, there is an opportunity to reduce the purchasing costs they face. Building up a database of suppliers of materials and equipment could facilitate inter-country purchasing and possibly reduce costs. This would most likely require a regional organisation to take the lead on assessing the viability of this approach and then considering how it could be implemented.
- In Belize, an organisational review assigned the line marking function on roads to the Ministry of Transport. Given that the Ministry of Works has responsibility for maintenance, this function should revert to that Ministry.
- Hurricane Tomas damaged parts of St. Lucia's road network quite badly. The financial implications of repairing the damage are very large for a country of St. Lucia's resources and there is both room and the need for investment, which will likely require external support.
- The Department of Public Works in Antigua and Barbuda is in need of support for road maintenance. The Department's work has been adversely affected by the country's fiscal challenges and recent spending cuts. Plans have had to be put on hold or reversed. In particular, recent attempts to decentralise the work of the Department have had to be reversed and the functions reabsorbed. Financial support for reorganising and reequipping the Department could help improve the roads infrastructure.
- Dominica's terrain and rainfall pattern push up the costs of road development and maintenance. The Public Works Department has been made into a corporate and although it is operating with some degree of efficiency, it needs more equipment and improved operational procedures. Any support that is forthcoming should be aligned behind the 10-year Road Sector Plan.

2.3.8 Land

2.3.8.1 Findings

In attempting to gather quantitative data on land stocks in the 7 countries, what was immediately evident was the large extent of data gaps in this area. Administration of physical development is typically achieved through development planning, such as the preparation of land use plans, and through development control or licensing, which involves the oversight of

planning permission for development. Information failures are common at both these functional levels.

Planning authorities lack comprehensive information on land stocks by type, utilisation figures and costs. In the absence of detailed information on land stocks, trends in land use could be a useful, if imperfect, source of information to guide land use planning. However, licensing bodies typically do not track and sum planning approvals by type of development on a systematic and ongoing basis, so trends in land use over time are also unavailable. Given how precious and limited a resource land is, particularly in the OECS countries, it is vital that management of this resource is carried out strategically and systematically. But in the absence of adequate data, such effective management becomes difficult.

2.3.8.2 Opportunities and Recommendations

There are 2 tools that can be used to overcome these information deficiencies. The first is a Geographic Information System (GIS), which directly addresses the problem by providing a means of capturing, analysing and managing the data that are lacking. Of these 7 countries, only Grenada and St. Vincent and the Grenadines showed evidence of any plans to implement such a system, and information on Grenada's progress was not available, but it is likely to be limited. The form of a GIS can vary, but the Vincentian GIS is mapping spatial data such as buildings, roads, etc. and other data such as census information in order to improve understanding of land use, trends and needs. It is expected to provide integrated spatial data that will assist in policy formulation in relation to land use and development activities. The System was close to becoming operational at the time of research, but some work on mapping and data entry remained outstanding. The Physical Planning Unit reported that land stocks had not been fully quantified and whether or not this will happen upon completion of the data entry for the System remains to be seen.

In the absence of such a technology driven approach, development of a Land Use Plan can take stock of the information that is available and set out a strategic approach to land use management. Grenada, St. Vincent and the Grenadines and St. Lucia have plans of one sort or another in place, and Belize is developing one. Some of these documents require updating, however. Dominica and Antigua and Barbuda lack such plans and it was unclear whether St. Kitts and Nevis has one.

With these countries at different stages of progress in using and developing the tools to deal with information deficiencies, the recommendations below have been set out in a generic fashion. Ideally, the first step, development of a GIS, would be in place before the other activities as it could help inform the approach they take. However, resources for the first step may not be available, and work on the other activities should not wait on creation of a GIS to proceed.

1. Develop a GIS.
2. Develop or revise a Land Use Policy/Plan, if necessary.
3. Develop a planning approval database to keep track of applications, with the ability for applications to be filed electronically.
4. Adopt CROSQ regional building standards into local law to harmonise the approach to planning approvals and monitoring of compliance to plan by approved developments.

This and the database should help facilitate enforcement of penalties for building violations.

There are 2 final recommendations that are slight asides from the preceding discussion and so these are set out by way of conclusion. In the overall approach taken to land use management, there is a need to guard against a race to the bottom in the granting of incentives, particularly to large international hotel developers and operators, in the name of competing for investment. Some of these investors have significant bargaining power and use the competition for their investment to strike deals that minimise local benefits. Land is a finite resource and giving it away or letting it for use on such terms should be avoided. Addressing this race to the bottom may require some regional leadership.

Finally, some of the smaller islands, including Dominica and St. Kitts and Nevis, have been successful in attracting investment into industrial estates. With demand for such facilities apparently robust, consideration should be given to expanding their availability.

2.3.9 Labour

2.3.9.1 Findings

These 7 economies are already service dominated and will be increasingly so in the future. The implication of this is that human capital will form the basis of economic activity. As the countries in this study, and others throughout the region, seek to facilitate increased private sector development and investment with a focus on service industries, human resource considerations will become more and more important. In this context, having up to date and accurate information on the labour market is important for 2 key reasons:

1. **It allows for effective investment promotion:** Accurate information provides governments and IPAs with an understanding of where their country has competitive advantages and allows them to focus on attracting investment in activities that depend upon those advantages to succeed. Information also allows investors to get a sense of the availability and cost of labour relevant to their particular investment. This will help them make determinations on the potential return they can make on their investment and decide if it is viable to proceed. Clarity in targeting investors and an improved capacity for investor decision making facilitates higher conversion rates of interest to investment and contributes to those investments being more effective as businesses. In this way the investment promotion process is made more efficient.
2. **It allows for effective human resource development:** With information on the areas and depth of expertise, volume of expertise and competitiveness in the labour pool, governments can plan effectively. They can continue to develop existing areas of expertise to build upon competitiveness and invest in training in areas where competitiveness does not exist. This can help achievement of broader economic development objectives, particularly within service industries.

The primary finding of the study in this area is that relevant labour market data is not collected and, given the potential benefits of this data, there is a need to address this deficiency. The data that is available tends to focus on traditional areas of economic activity that are connected with unskilled or low-paying employment. Wages in these areas are low and do not provide a

basis for individual prosperity. At the same time, productivity in these areas is also low, which has constrained economic activity in the face of globalisation in the past, as seen in the decline of the banana industry in the Eastern Caribbean.

A good example of the focus of labour market information can be seen in the Statistical Report 2009-2010, published by the Department of Labour in St. Vincent and the Grenadines, which captured data on wages. It must be noted that the amount of information in this Report and its timeliness was far beyond what was available in many other countries. Despite being one of the better examples of labour information, the Report was deficient as it focused on collecting salary information in low-paying employment categories, including:

- Wholesale/retail;
- Office/staff;
- Hotels;
- Construction;
- Bakeries; and
- Security workers.

Of the 57 occupations covered under these categories only 4 had a monthly salary range that reached EC$3,000 (US$1,111) or more. 3 of these occupations fell under hotels and included accountant, manager and chef, and the top end of the range for chef was EC$3,000. The other occupation was engineers, under construction. The point here is that the information that is tracked is linked to occupations that do not have significant potential to improve livelihoods and is largely linked to the tourism industry (even engineers may be working on construction of tourism projects). Given that most countries in the region have identified a need to diversify their economies away from tourism and into higher value-added service industries, what is apparent is that data relevant to those pursuits is not being gathered.

Aside from this critical and overriding finding, a number of other observations can be made.

- The training available, including Technical and Vocational Education and Training (TVET), is not aligned with labour market needs and does not reflect economic development priorities.
- As a result of this, there are skills gaps in the workforce. However, anecdotal reports from the private sector in a number of countries have indicated that the workforce is generally trainable.
- Development of a Labour Market Information System (LMIS) is underway in both Belize and St. Vincent and the Grenadines and these systems could serve as potential models for the other countries to follow.

2.3.9.2 Opportunities and Recommendations

These 7 countries should be focusing on making the transformation from low value addition, process-oriented services (such as retailing, restaurants, hotels) to high value, knowledge-based services. As such, they should be focusing on gathering information relevant to these activities, which will provide more productive and better-paid jobs. This will mean gathering information on:

- Size of labour force by occupation.
- Number of workers with particular skills and qualifications within occupations.
- Wage rates by occupation, categorised by level of experience/expertise if possible.

Ideally, this is the type of information that an LMIS should capture in a systematic and cost-effective fashion, once the initial setup work is complete. The LMISs of Belize and St. Vincent and the Grenadines were at early stages of development when the fieldwork was conducted, so not much is known about how they will function once operational. Once these LMISs are running, other countries should adopt aspects of these models that work and alter aspects that do not, rather than taking them on as they are.

What is known is that a variety of stakeholders have been involved in the LMIS projects thus far. In the case of St. Vincent and the Grenadines, the Department of Labour, the Statistical Office, the National Insurance Services, the Ministry of Education (which covers vocational training) and the Ministry of Education have been involved. It is critical that such a broad range of stakeholders participate in the development and operation of an LMIS for a number of reasons, which can be regarded as recommendations for countries considering implementing a LMIS. The reasons are as follows:

- A variety of information will need to be gathered in order for the system to produce comprehensive and timely data. This information will need to come from a variety of sources.
- Distributing information collection amongst stakeholders will reduce the need for improving the relevance of survey instruments and carrying out such labour-intensive surveys on a more regular basis. This will minimise the burden of collection on statistical bureaus that suffer from severe capacity constraints. Automating information collection will reduce the burden on all stakeholders.
- In term of outputs of the system, having a range of stakeholders connected to the system will ensure results are distributed to a number of actors that play a role in the labour market. This will mean that government ministries and agencies should be involved along with training institutions and key private sector entities. This will facilitate more effective human resource development, economic development, policy setting and investment promotion.

A full-fledged and effective LMIS may be some way off for a number of countries and the need to address deficiencies in labour market data cannot wait to be addressed. In the interim, there may be a way to access more relevant data in relatively quick and easy manner.

The National Insurance Services (NIS) in St. Vincent and the Grenadines provides a useful example of how the gap in labour market statistics can be partially bridged. As part of social security contributions paid by employers for employees, the NIS gets information on the number of people working in certain industries and the total wages earned within these industries. Coverage is not absolute due to the fact that some contributions are on a voluntary basis (self-employed persons for example), the informal sector is not included and the fact that not all employers contribute (for example, coverage in construction is 42%). As a result, the data collected are not reflective of the entire labour market, but they are certainly useful as an indication of the situation and trends. Other countries could draw upon their equivalent of the

NIS to gather figures such as employment by industry and average annual wage by industry while working towards development of a more comprehensive LMIS.

2.3.10 Capital

2.3.10.1 Findings

The results of this Study on the situation regarding access to finance will not come as a surprise to many. The situation is one that is well understood by stakeholders in the region and the data gathered has not yielded anything to change the prevailing view. The findings can be summarised as follows:

- Large investors do not face an issue in accessing finance and are able to borrow internationally and regionally at better rates than what is available locally.
- Small businesses (which are usually locally-owned) are disadvantaged by this situation since they borrow at the higher local rates (see table below). This undermines their ability to be competitive, which undermines their viability as businesses.
- Micro, Small and Medium Enterprises (MSMEs) also lack collateral, which drives up the risk premium they face on commercial loans, or makes finance unavailable to them. In some parts of the world, venture capital is extended as a means of lending when collateral is not available. In the Caribbean, the availability of venture capital is limited, which is partially a reflection of the fact that demand for venture finance is limited by the fact that local businesses often do not want to cede equity and control.
- Some development finance institutions have tried to bridge this gap by focusing on MSME lending, but have been hampered in the past by a high instance of non-performing loans in their portfolios and a limited amount of capital for lending. The incidence of bad loans has led to the closure of some of these institutions, the curtailment of the volume of the lending of others and an increased risk aversion. This risk aversion among development finance institutions has led to a shift away from lending to productive sectors to more secure areas such as mortgages and student loans.

Table 5: Commercial Lending Rates in National Banks

Country	Commercial Loan Interest Rates
Belize	14-15%
St. Vincent & the Grenadines	14%
Grenada	8-14%
Dominica	8.5-12%
St. Kitts & Nevis	8-16%
Antigua & Barbuda	9-12%
St. Lucia	9.5-12%

2.3.10.2 Opportunities and Recommendations

The upshot of the situation is that there is a need for sources of funding at competitive rates for smaller businesses. Some recommendations for providing this type of financing are provided below.

- Development finance institutions could explore the use of credit unions and NGOs to onlend funds to small and micro clients as a means of reducing administrative costs. Other funds earmarked for development finance could be similarly channelled if they are not directed through a specific development finance institution. For this approach to be viable, funds would need to be allocated to organisations that have systems in place to provide such services more cost effectively than the central institutions could themselves. The suitability of this approach is something that individual countries will have to examine further.
- MSMEs often lack the expertise or staff time to prepare adequate business plans, prepare financial management systems and keep adequate records. This makes lending to them more uncertain and therefore more risky, which leads to higher lending rates. Providing centralising technical assistance to them in these matters could help reduce the risk premiums they currently incur. Countries will have to determine on an individual basis which organisation(s) are best placed to provide such services.
- At the time of research, plans were underway for an Eastern Caribbean Enterprise Fund, which would aim to improve access to finance and provide some technical assistance at a regional level. The potential opportunities presented by this Fund should be explored further by countries and communicated to their private sectors, if relevant.
- Governments could set up dedicated venture capital funds to encourage investment, particularly in innovative businesses. A possible model is for a government to supply the initial capital for the fund and leverage that capital to attract private contributions. The government would subordinate its returns to those of private investors to encourage contributions. Such funds could earmark certain amounts of finance for lending in specific areas within industries that are targeted for development. Ensuring an adequate response from the private sector may require some education to address the reluctance in certain quarters to cede equity. Again, the viability of this approach and how to take it forward is something countries will have to consider individually.

3 Findings: Belize

3.1 Infrastructure

The various aspects of infrastructure are discussed individually in the sections below. Where the data requested in the analytical framework was made available, those sections of the framework have been reproduced as tables in the relevant infrastructure sections.

3.1.1 Power

Much of the information on Belize's energy sector comes from Belize Electricity Limited (BEL), the country's primary distributor of electricity.[1] BEL was able to provide all of the data sought by the framework, which is summarised in the table below. The information from BEL was referenced against the data provided by the Public Utilities Commission (PUC), the country's regulatory body, and BECOL, an electricity producer that sells all of its production to BEL.

Table 6: Analytical Framework – Power

Indicator	Units	Data	Year	Source
Installed capacity	MW	169 MW	2010	PUC, BEL
Delivered capacity or firm capacity	MW	92 MW	2010	BEL
Peak demand	MW	76 MW	2010	BEL
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	US$233.75/MWh	2010	CARILEC Tariff Survey June 2010
Electric power consumption	MWh per capita	1.25 MWh per capita	2009	BEL
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)	41.3	2009	BEL
Average number of brownouts	Number per month	n/a	2010	BEL
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)	45.8	2009	BEL
Time to obtain electrical connection	Days	4.06 days	2010	BEL

With good sources of developed hydropower, Belize can generate more energy than the country currently needs. Estimates put peak demand at 76 MW, well below the 92 MW of firm capacity, which is the amount of energy that can be available at any given time. In addition to the 119 MW of installed capacity within Belize, there are 3 contracts in place with La Comisión Federal de Electricidad (CFE), Mexico's state-owned electricity company, which provides an option of

[1] There are some small-scale producers of electricity in the country, including the Mennonite community and others in the south. While they do distribute and sell some of their production, this is done locally and so the estimated 4-5 MW of production has not been factored into the statistics on installed capacity.

accessing another 50 MW. A further 22 MW exists through a gas turbine facility west of Belize City, but since this is for emergency use, it has not been factored into the calculation of installed capacity.

Since spare capacity does exist in the sector, BEL has indicated a desire to export electricity. Given that Belize is connected to Mexico's grid, there seems to be an opportunity there. Feedback indicates that the PUC is negotiating with CFE on the export of energy, and this is an issue that should be monitored and pursued. BECOL indicated that Belize would be cost competitive in exporting to Mexico, but no data on the cost differential or the size of this market was provided. Accessing CIPAK, the Central American grid, may represent a longer-term option and would require further research to determine viability.

Although supply capacity is strong, there are some problems with reliability. Of the average of 45.8 hours of supply interruptions per customer per year, 28-29 hours were unplanned. However, with an average of 41.3 supply interruptions per customer per year, the average duration of each interruption was just 1.1 hour, suggesting a good response time when things do go wrong. BEL commissions a customer satisfaction survey; and 82% of respondents reported they were satisfied with the service they received in 2009. This would suggest that power outages are causing concerns for some.

As supply exceeds demand, BEL does not have a curtailment policy. In fact, it does not have the line structure in the distribution network to facilitate rotation of power, so brownouts are not an issue. A plan to put in a line structure that will facilitate rotation of supply is under consideration.

The PUC licenses and regulates the production of electricity and its distribution through the public network. If a facility is over 75 kW, a production licence is required, and supply through the public network requires a separate licence. At the moment, BEL is the only supplier through the public network and the rates it charges are set by the PUC. Stakeholders expressed satisfaction with the legal framework around the energy sector, but BEL did have complaints about the PUC's exercise of its tariff setting authority. A tariff review mechanism is in place and a dispute between BEL and the regulator is ongoing in the courts. With legal proceedings pending, neither party was able to comment on the situation in detail, however the present rate of B$0.44/kWh (US$0.22) is not far above the 1983 rate of B$0.43/kWh. The table below summarises the costs of electricity across customer types at different consumption levels in each of the 7 countries in the study. What is immediately evident is that Belize has the lowest cost of electricity in all areas among the countries, by a significant margin in many cases. On this evidence, it would seem that BEL is providing a competitive service.

Table 7: CARILEC Tariff Survey June 2010 (US$)[2]

Billing Category	Antigua & Barbuda	Belize	Dominica	Grenada	St. Kitts & Nevis	St. Lucia	SVG
Domestic Consumer using 100 kWh/month	$39.02	$22.25	$36.46	$34.10	$30.62	$24.25	$32.50

[2] The CARILEC survey covered the St. Kitts Electricity Department but did not have any information on costs. Therefore, the figures for St. Kitts and Nevis are those reported by NEVLEC, which provided data as of the end of year in 2009.

Billing Category	Antigua & Barbuda	Belize	Dominica	Grenada	St. Kitts & Nevis	St. Lucia	SVG
Domestic Consumer using 400 kWh/month	$155.32	$91.25	$168.07	$139.63	$109.87	$113.29	$135.52
Commercial Consumer using 2,000 kWh/month	$811.59	$467.50	$923.00	$718.59	$558.95	$656.63	$758.95
Commercial Consumer using 5,000 kWh/month	$2,005.96	$1175.00	$2,302.92	$1,796.47	$1,394.60	$1,641.58	$1,897.38
Industrial Consumer using 10,000 kWh/month	$4,096.58	$2,300.00	$4,230.48	$3,087.54	$2,787.37	$3,155.80	$3,378.11
Industrial Consumer using 100,000 kWh/month	$40,809.38	$21,700.00	$42,259.08	$30,875.45	$27,857.12	$30,085.76	$33,692.81
Fuel Surcharge ($/kWh)	$0.243	-		$0.17	$0.21	$0.031	$0.14

At the moment, the relationship between the regulator and supplier is somewhat poor. In addition to the ongoing tariff dispute, BEL reports that there are other problems with the PUC. For example, there is a law that requires the PUC to reimburse BEL when the cost of supply exceeds a certain threshold and although this threshold was exceeded from 2005-2008, reimbursement was not made. The PUC has drafted new regulations for the energy sector and hopes to have these in effect next year. Whether they will improve the relationship between BEL and the regulator remains to be seen, but for now, problems persist.

Belize has seen decreased or slowed economic activity in the wake of the global downturn and this has had an impact on a number of industries. Electricity has been no exception and BEL reports that its number of commercial consumers is declining. BECOL had forecast growth in electricity demand to be between 8 and 10% per annum recently, but these levels have not been reached. With this slowing or contracting of demand along with an oversupply of energy, the scope for investment in domestic electricity production and supply would seem to be limited. The PUC reports that 82% of the population have access to electricity, including those supplied by the small scale producers, so there may be a possibility of connecting more people to the public network. It is important to note that Belize's large land area and low population means that it will be difficult to reach high penetration levels, and the returns to investment for doing so may not exist for BEL. However, there are certain areas off the grid that are more densely populated and so connecting them may be feasible. Some of the tourist islands off the east coast represent such a possibility. Ambergris Caye, for example, runs off freestanding diesel and the PUC indicated that BEL has expressed an interest in connecting it through a cable.

As excess supply exists and is apparently cost competitive, exporting to Mexico may improve investment prospects and create further opportunities in terms of production and supply. Accessing this market and the scale of the opportunity it will present is dependent on negotiations with the CFE and the terms and conditions of supply.

Outside of investment in the energy sector itself, production and supply of electricity is important in facilitating investment in other industries. In this regard, Belize seems to be well positioned as spare capacity exists, the key population and economic centres are connected to the grid and the cost of electricity is low. While there are some problems with interruptions of supply, these are short in duration on average and so should not pose a significant constraint to business.

3.1.2 Water & Sanitation

The PUC was a useful source of information on the provision of water and sanitation sources. Unfortunately, it was not possible to meet with Belize Water Services (BWS) during the fieldwork, the country's only licensed provider of water services, so the analytical framework for this aspect of infrastructure (summarised in the table below) is missing information on supply interruptions.

Table 8: Analytical Framework – Water & Sanitation

Indicator	Units	Data		Year	Source
Cost of water supply	US$ US gallons	Consumption Bands (US gallons/month)	Fixed Charge (US$)	2010	PUC
		0 - 1,000	$4.31		
		1,001 - 2,000	$6.90		
		2,001 - 3,000	$7.47		
		3,001 - 4,000	$7.76		
		4,001 - 5,000	$8.04		
		5,001 - 6,000	$8.62		
		6,001 - 7,000	$9.19		
		7,001 - 8,000	$9.48		
		>8,000	$9.77		
Average number of incidents of water shortages	Number/month				
Average duration of water shortages	Hours				
Time to obtain water connection	Days	7 days		2010	PUC
Cost of wastewater supply[3]	US$/1000 US gallons	0 - 1,000: $0.86 1,001 - 2,000: $2.01 2,001 - 3,000: $2.30 3,001 - 4,000: $2.59 4,001 - 5,000: $2.88 5,001 - 6,000: $2.87 6,001 - 7,000: $2.59 7,001 - 8,000: $2.59 >8,000: $2.58		2010	PUC
Quality of waste treatment system	Rating from 1 – 5: 5: Public waste treatment facilities provide first stage (solid particle removal), second stage (aeration,	Belize City: Designed as a 4, operating as a 3 Belmopan: Designed as a 4, operating as a 2		2010	PUC

[3] The cost of wastewater supply figures are for Belize City and Belmopan only. The cost of this service in San Pedro is several times the price paid in the two mainland cities.

Indicator	Units	Data	Year	Source
Quality of waste treatment system	organic matter killed), and third stage (removal of heavy metals and chemicals) biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable. 4: Public waste treatment facilities provide first, second, and third stage biological and chemical wastewater treatment, but tap water is not potable. 3: Public waste treatment facilities provide first and second stage treatment only. Wastewater smells. 2: Public waste treatment facilities provide first stage treatment only. Wastewater is harmful to the environment. 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.	San Pedro: Designed as a 4, operating as a 3	2010	PUC

The main issue with water and sanitation services in Belize is access, which varies widely from area to area, with particularly marked differences between urban and rural areas. The primary urban centres of Belize City, Belmopan and San Pedro enjoy access to fresh water and wastewater services, while other areas only have fresh water. In these locations, disposal of wastewater is done through septic tank systems. The companies that provide disposal services for these tanks are unregulated and the PUC does not know where the waste is dumped. While water supply is generally good in these areas, some of them, such as the cays, rely on reverse osmosis, an expensive process that is subsidised by mainland customers. Rural areas also operate under septic tank schemes but water supply is through water boards, which again are not regulated by the PUC. According to its 2008-2009 Annual Report, BWS serves approximately 44,600 customers. The Statistical Institute of Belize estimated the country's population at 333,200 in mid 2009, so only about 13.4% of people are benefitting from the services of the sole licensed provider of water services.

Data on percentages of the population accessing certain types of services outside of those serviced by BWS was not provided by the PUC. Given the fact that most of the non-BWS services are unregulated, the PUC's ability to comment on these other areas would seem to be limited. On a broader qualitative level, the regulator did indicate that while availability of fresh water in the key urban areas is generally good, sewage services could be improved. On the rural side, the quality of water supply varies due to the individualised role of the water boards, but sewerage is an issue.

Both Belize City and Belmopan have seen investment in expansion of water services, but this has not been matched on the wastewater disposal side. The sewage investment that has taken place is primarily focused on maintaining the infrastructure rather than expanding it and even then facilities are not operating at the levels they were designed to. In this study, wastewater treatment facilities are assigned a rating from 1 – 5, according to the classification system set out in the table above. For the sake of clarity, the classification is based on the stages of biological and chemical treatment applied to wastewater and the quality of the treated water. There are 3 possible stages of treatment: at first stage, solid particles are removed; at second stage the water is aerated and organic matter is killed; at third stage heavy metals and chemicals are removed. For example, a level 5 facility provides first, second and third stage biological and chemical treatment to the highest international standards and tap water is chlorinated and potable. The waste treatment systems in both Belize City and Belmopan were designed to operate as level 4 facilities but Belize City is operating at level 3 while the capital city is running at level 2.

San Pedro was also designed as a level 4 but is running at level 3. This and the other 2 facilities are also operating at full capacity, so there is a pressing need for investment to upgrade the quality and reach of the sewage infrastructure in these areas. However, the PUC indicated that the high cost of wastewater infrastructure has proved to be a challenge to investment. The fact that access to finance has consistently been cited as a constraint by stakeholders in Belize exacerbates this difficulty.

Away from these three urban centres, the need is to develop wastewater infrastructure is even more pronounced given that both urban and rural areas are serviced by unregulated septic tank operators. The PUC suggested that the Central Building Authority could get involved in expanding the public system through the design and build of septic tanks, but did not indicate that there are any plans to proceed with such a course of action.

At the moment, BWS prepares 5-year plans for the development of infrastructure and submits them to the PUC for approval. The PUC also provides direction to BWS on critical areas of investment and the annual rate review mechanism is intended to ensure this path of investment can be followed. However, the pattern of investment that has taken place to date has been insufficient to even maintain the specifications that sewage facilities were built to. This suggests that either the investment plans have been deficient or that BWS has either been unwilling or unable to undertake the investment specified. Given how pressing the need for improvement of facilities is, and the fact that this was pointed out by the PUC, it seems unlikely that investment plans have ignored these concerns.

Without having met with BWS, it is difficult to determine how financially feasible it is to undertake the required development of sewage infrastructure to improve quality and access and whether the prescribed tariffs it charges are sufficient to do so. Therefore the causes of deficiencies in investment in sewerage services remain unclear, even as the need to invest remains abundantly clear. On the freshwater side, although supply is adequate, investment to increase its reach could be made.

While BWS is the only licensed provider of water services, new entities can enter the market through a licence review. However, as the more densely populated parts of the country are

already well served by the BWS-owned infrastructure, new entrants would face heavy initial capital outlays with limited returns, as they would have to invest in developing infrastructure to serve less densely populated areas or attempt to go head-to-head with BWS. Given the pattern of investment by BWS under the existing tariff structure, the first approach seems unlikely. Directly challenging BWS would seem to be nearly impossible, given its massive first-mover advantage. So at the moment, BWS represents the most feasible avenue for further investment in water and sanitation services.

3.1.3 Telecommunications

The telecommunications landscape in Belize is dominated by 2 players, Belize Telemedia Limited (BTL), the state-owned flagship company, and Speednet Communications Limited, a private provider of mobile and wireless internet services under the marketing name Smart. BTL offers fixed line, mobile and data services and uses a GSM cellular network. Additionally, it is connected to the ARCOS-1 fibre optic submarine cable. Speednet uses CDMA technology to provide its wireless based services. Its license extends to cover fixed line services, and while its website states that it is expanding into that area, its primary focus remains on mobile services.

The 2003 entry into the market of Speednet has resulted in an improved quality of service for Belizeans as it introduced competition into an industry that had previously been subject to a BTL monopoly. Despite the improvements, challenges still remain, particularly since Speednet purchases external connectivity from BTL, which controls the submarine cable landing point. The fact that BTL is a state-owned company has created a impression of an uneven playing filed in the industry and perceptions of unfair treatment of Speednet by the regulatory body. Before expanding on the relationship between these two entities and the PUC, the analysis will focus on setting out the status of the telecommunications infrastructure, beginning with the table below.

Table 9: Analytical Framework – Telecommunications

Indicator	Units	Data	Year	Source
Broadband cost	US$/month (download speed: 1 Mb/second)	Standalone: $150.00 Residential package (with $17.50 fixed line rental): $116.00 Commercial package (with $49.50 fixed line rental): $139.00	2010	BTL
	US$/month (download speed: 2 Mb/second)	Standalone: $250.00 Residential package (with $17.50 fixed line rental): $182.50 Commercial package (with $49.50 fixed line rental): $199.50	2010	BTL
	US$/month (download speed: 4 Mb/second)	Standalone: $425.00 Residential package (with $17.50 fixed line rental): $292.50 Commercial package (with $49.50 fixed line rental): $299.50	2010	BTL
Size of external fibre optic connection	Terabits/second			
Internet subscribers	Number/1,000 people	30.94	2010	BTL, Smart
Landline cost	US$/month	Residential: $10.00 Commercial: $25.00	2010	BTL
Landline cost of local call	US$/3 minutes	$0.00 - $0.033	2010	BTL
Landline cost of call to mainland US landline	US$/3 minutes	$0.451 - $0.575	2010	BTL
Landline penetration	Mainlines/1,000	83.87	2010	BTL

Indicator	Units	Data	Year	Source
	people			
Mobile phone cost	US$/month	BTL 250 minutes, 30 SMS: $25 500 minutes, 30 SMS: $50 800 minutes, 40 SMS: $75 1,200 minutes, 40 SMS: $100 Smart 200 minutes, 25 SMS: $25 480 minutes, 40 SMS: $60 600 minutes, 50 SMS $75	2010	BTL, Smart
Mobile phone penetration	Mobiles/1,000 people	860.3	2010	BTL, Smart

In comparison with North America and Europe, the cost of broadband is quite high and the speeds on offer are well below what is available even at the residential level in those markets. The simple fact is that this infrastructure is not as well developed in the Caribbean and so international comparators are not as useful as benchmarks as regional comparators. Therefore, analysis of Belize's performance on this front will take place once data from the other countries have been collected.

The cost of fixed line services presents a similar case in that it must be compared against data from other countries. But this area is perhaps of slightly less importance than broadband in the modern world, given the prevalence of Voice over Internet Protocol (VoIP) technologies, which have sidelined the importance of cost competitiveness in fixed line communications. Given this trend, what is a more pressing concern than the cost of fixed line calling is the fact that VoIP has been blocked in Belize. This reduces the country's telecommunications competitiveness, particularly in regards to attracting investment in call centres. Additionally, the fact that it is banned because it cuts into BTL's revenue stream from long distance calls and does not present a possibility for capturing the alternate revenue generated sends out a negative message to investors. This position is one that requires further policy consideration.

The cost of mobiles is also higher than the prices prevailing in North America and Europe for similar service contracts, but is not several times higher as was the case for broadband. Again, analysis of competitiveness will hinge upon comparison with the other countries in the study, but the high penetration rate suggests that the price is at least somewhat reasonable for the local market. This conclusion should be tempered somewhat by the fact that mobile phones may be regarded almost as a necessity by many segments of the population, but on balance, cost would not seem to be a constraint.

Belize will always face a challenge in reaching high penetration rates in most infrastructure metrics due to a regionally low population density and, more significantly, a low incidence of urban population. The country's urban population as a percentage of the total population was 52% in 2008, compared with 79% for the Latin America & the Caribbean (LAC) region.[4] And although data from the other countries is not yet available, data for the LAC region is and it is unsurprising that most penetration indicators are lower than regional averages, as shown below.

[4] Belize, ICT At a Glance, World Bank, http://devdata.worldbank.org/ict/blz_ict.pdf.

Table 10: Telecommunications Penetration Indicators

Indicator	Belize (2010)	LAC Region (2008)[5]
Internet subscribers per 1,000 people	30.9	62.0
Landlines per 1,000 people	83.9	185.0
Mobiles per 1,000 people	860.3	803

The fact that Belize has a higher incidence of mobile phone use than the regional average is interesting and can perhaps be explained by the fact that it may be easier to obtain a cell phone in some rural areas than a fixed line. However, in terms of internet and landline subscribers, the expectation is that the pattern of low incidence for the region will be repeated when Belize is compared against the other countries in the study.

Both BTL and Speednet are continuing to invest in infrastructure to meet ongoing technological developments. BTL expects to begin rolling out fourth generation (4G) cellular wireless standards through its GSM network next year. It is currently using microwave technology to connect to the islands, but it does plan to run a cable to San Pedro this year. Eventually network coverage is expected to cover 75% of the country geographically and 90% of the populated areas. Additionally the company is migrating to Internet Protocol based switch for the public switched telephone network. Speednet is rolling out the infrastructure for third generation cellular wireless standards and has managed to secure domestic financing for this work.

According to BTL, bandwidth is not an issue in terms of capacity. However, Speednet has indicated that they would like to access a greater amount of bandwidth and that the price they pay for current usage levels is high. The two companies have entered into a number of agreements that allow Speednet to access BTL-owned infrastructure so that it can provide telecommunications services. These agreements, including the Master Agreement that grants Speednet capacity on BTL international transmission links, were not made available to the consulting team, so it is not possible to analyse the terms of their access to bandwidth. However, the claim of insufficient and expensive access raises the issue of the status of the relationship between the parties and the role of the PUC as the regulator.

Essentially the difficulties stem from the fact that Speednet must rely upon BTL controlled-infrastructure to provide certain services, such as international calling. At the same time, the companies are direct competitors in the supply of these services. When disputes about access to infrastructure arise, as they will from time to time, the actions BTL takes can be perceived by Speednet as anti-competitive and an abuse of its position of dominance in the industry. This perception is not helped by the fact that BTL is a state-owned company and the PUC is an autonomous government body created by statute, which can create a perception of regulatory bias. These statements are given credence by the dispute between Speednet and BTL, which led to the latter commencing legal proceedings in December 2009.

Briefly, the dispute arose from BTL's suspension of Speednet's access to unfiltered E1 transmission links, which allow it to provide its customers with international telephone access.[6]

[5] Figures for the LAC Region are taken from Belize, ICT At a Glance, World Bank.

[6] The summary of this dispute is taken from the decision of the Court of Appeal of Belize in Civil Appeal no. 27 of 2009, heard on 18 January 2010.

BTL's position was that the terms of this access was granted below cost in a non-arms' length transaction when the companies were under the same ownership and it gave Speednet an unfair commercial advantage. Notification of intent to terminate the access within 7 days was given on 13 November 2009 and Speednet then wrote to the PUC on 17 November to complain of "abusive" and "anti-competitive" behaviour and requested it to instruct BTL to refrain from terminating access until alternative arrangements for the provision of international voice services could be made.

Details of the PUC's response to this request were not given in the Court's judgement, but access had been cut off by the time Speednet received the response on 20 November. Although there is a complaints procedure set out in Public Utilities Commission Act, access was not restored and Speednet turned to the courts for relief on 7 December resulting in an interim order dated 17 December compelling BTL to restore the E1 service by 10:00 am on 19 December. This order was upheld when BTL appealed the decision.

It is perhaps unsurprising that disputes of this kind arise between two competitors that also have a service provider and consumer relationship. There are conflicting interests inherent in such a structure and since the present structure is unlikely to change, given that BTL retains sole control of the country's external connectivity, it is vital that the relationship is subject to effective regulation. It is important to note that information on the steps the PUC attempted to take in resolving this dispute are unknown, but the simple fact that it was unable to find a solution, even an interim one, from the time Speednet wrote to it on 17 November until the time court action commenced on 7 December suggests the regulation function could have been performed more effectively. Indeed, the court provided more timely redress, making a clearly defined order within 10 days of the action commencing.

During the meeting with Speednet, concerns about the regulation of the industry were expressed. The PUC has stated that it is looking at the interconnection rates between the 2 companies as well as the issue of how to share the cost of building infrastructure. At the moment it is attempting to use a collaborative process to arrive at these decisions, but arbitration is also an option. So the regulation of the telecommunications industry continues to evolve. This is an important issue as it will impact on how Speednet and BTL carry on business in the country, including their approach to further investment. At the moment, both of them are proceeding with infrastructure investment, but the regulatory question also bears watching because it will also have an influence on the willingness of others to invest in the industry.

Both companies pointed to the quality of the labour supply as a constraint to operations. Both of them are investing in training of staff as entry-level workers do not have the skills they require. BTL pointed out that much of the technology they use is not available for study in educational institutions. The issue of adequacy of training will be discussed further in the section on labour.

3.1.4 Transportation: Air

Responsibility for management of airports in Belize is divided along international and domestic lines. The sole international airport is managed by the Belize Airport Concession Company (BACC), while the Belize Airport Authority (BAA) is in charge of the 10 domestic airports. Outside of these 11 airports, there are an additional 5 not under the BACC or the BAA and these are privately owned. The information in table below dealing with the number and size of the runways in Belize is based on the figure of 16 total airports in the country. However, the 11 public airports are sufficient to deal with current levels of demand for international and domestic passenger and freight transport and each of these areas is dealt with in turn.

Table 11: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	16	2010	ACC
Number of direct flights to US/Europe	Number of flights/day	8	2010	ACC
Airports with paved runways	Number	14	2010	ACC
Number of paved runways by size	Under 914 metres	14	2010	ACC
	914 - 1,523 metres	1	2010	ACC
	1,524 - 2,437 metres	0	2010	ACC
	2,438 - 3,047 metres	0	2010	ACC
	Over 3,047 metres	1	2010	ACC
Passenger load capacity	Load factor	55%	2010	ACC
Freight load capacity	Load factor			
Export handling charges	US$/kg for warehouse pickup to port clearance			
Time to export	Days from packing at warehouse to departure from port	General Cargo: 1 day Perishable Goods: hours	2010	ACC
Export shipping costs	US$/kg from main port to Miami	General Cargo: $2.03/kg Perishable Goods: $1.32/kg	2010	ACC, Amerijet
Import handling charges	US$/kg for port clearance to delivery at warehouse			
Time to import	Days from arrival at port to delivery at warehouse	1-2 days	2010	ACC
Import shipping costs	US$/kg from Miami to main port	$2.62/kg	2010	ACC, Amerijet

3.1.4.1 Air Transportation: International

The BACC's 30-year concession to manage the international airport came into effect in 2004. The terms of the agreement require it to make ongoing investments in infrastructure in order to maintain facilities and expand to cope with growing demand as necessary. Shortly after signing the lease, work began on a first phase of investment that extended the runway, expanded the

terminal building, refurbished its facilities and developed access roads serving the airport. The development cost US$22.5 million and was competed in 2009.

Importantly, the BACC was able to obtain private financing for the expansion project through the First Caribbean Bank. While the Central Bank of Belize does impose restrictions on external borrowing because of its exchange rate controls, this was not an issue for the BACC as it derives much of its revenue from airline fees that are paid in US dollars. This is important to note because it demonstrates that access to finance was not an issue for the BACC in the past and should not be once it moves into the planned second phase of infrastructure investment.

The scope of this investment is very generally prescribed by the lease agreement and basically involves an expansion of the main terminal. The timing of this project is linked to the development of demand in terms of passenger numbers and initial expectations were that the requisite levels would be reached between year 7 and 10 of the lease. However, the global economic downturn has taken a toll on visitor numbers and a 2.55% decrease in arrivals in 2008 was followed by a 5.15% fall in 2009 that put total stayover arrivals at 232,383.[7] With this decline in numbers, the expectation is that the second phase of investment will be pushed back from the original timeline.

Although passenger numbers have an impact on earnings, the majority of the BACC's revenue, 60-70%, is derived from departure fees, with landing fees and rental of terminal facilities also important sources of income. The Concession Company reported it is competitive on departure and landing fees for the region. Nevertheless it was not immune to the effects of the downturn and its business contracted about 8-9% during the recession, but has started to increase again in the past year.

As part of this recovery, talks with airlines regarding additional flights and new routes are proceeding. Frontier Airlines is expected to begin a flight from Denver, which would be a new route, and American Airlines is adding another flight from Dallas. The BACC did not indicate when these flights would begin. More generally, they have had some preliminary interest from JetBlue Airways in flying to Belize. The Civil Aviation Authority (CAA) reports that the Federal Aviation Administration (FAA) of the US has determined that Belize is a Category 2 country, which means that local carriers cannot commence service to the US unless they lease aircraft from an authorised carrier. Some local companies have expressed an interest in flying to the US and the feeling is that they are close to being Category 1 compliant. According to the CAA, Belize has not been formally assessed by the FAA, so the American market will remain closed to local carriers until such an assessment takes place and Belize passes muster.

At the moment, the overall passenger load factor is 55% and that movement is not evenly distributed, with the airport only operating at capacity for about 6 hours a day. In fact the airport does not offer night departures at the moment. So a fair amount of carrying capacity exists, and the BACC indicated that while it could quite easily carry out construction to meet an uptick in passenger and flight numbers, the increase would have to be significant before investment became necessary. Therefore it is unlikely that further infrastructure investment will be required in the medium term, even as passenger numbers return to and eventually surpass pre-recession levels and if the planned new flights are added.

[7] 2009 Country Statistics, Caribbean Tourism Organisation.

Finally, there has been some discussion of construction of a second international airport in Riversdale in the southern part of the country. The BACC did not have any information as to whether or not this plan would proceed or what stage it was at, nor did internet searches return any results. The potential impact of another international airport would have a dramatic impact on the air transport infrastructure (as well as the BACC's business), however the low load factors call the viability of such a project into question, in the medium-term at the very least. Given the lack of information, this issue has not been factored into the analysis, but is one that bears monitoring.

3.1.4.2 Air Transportation: Domestic

Demand for domestic air transport is largely fuelled by tourist traffic and the BAA reports that the local airports move around 300,000 passengers a year. The Authority expects a strong recovery in passenger numbers over the next 3 years and is forecasting 15-20% growth over that period. Although the domestic airport infrastructure is currently able to cope with passenger volumes much of it, particularly runways, is tired due to lack of maintenance and in need of improvement if it is to effectively deal with the expected growth in demand.

The BAA has recognised the need for investment and its long-term plan is to improve all of Belize's domestic runways. More immediately it is focusing on redeveloping the two most important domestic airports, Belize City Municipal Airport and the San Pedro Municipal Airport, which was recently renamed the John Greif II Airport.

The Belize City project is the larger of the two, with the improvements expected to cost between US$6 and $7.5 million. As the BAA is a quasi-government body it does not receive government funding but does report to the Ministry of Tourism, Civil Aviation and Culture. It is dependent on landing fees and flyover charges for revenue and in December it implemented a US$2.50 rider fee on local tickets to help finance the cost of the Belize City Municipal Airport project. The BAA faces more of a challenge than the BACC in accessing finance, which is due to the fact that the domestic airport business is smaller than the international airport business. This scenario of smaller businesses facing greater challenges than larger businesses in accessing finance is certainly not unique to Belize and that situation will be analysed in greater detail in this report in the section on capital. Although regional and international banks were not interested in financing the project, the rider fee and weight of government support were sufficient to obtain local financing.

Work on the John Greif II Airport is due to commence in January 2011 and funding for the US$1.55 million project has been obtained. The works will include an upgrading of the landing strip, addition of security fencing, expansion of the parking area for private aircraft, lighting for emergency night landings and a general enhancement of the safety and security features on the compound.

In addition to these two projects and the general aim to improve the country's airstrips, the BAA has plans to open an airstrip in the Mountain Pine Ridge area, but this is at little more than the concept stage.

In general, the BAA concedes that the state of the domestic airport infrastructure is serviceable and in need of improvement. Plans to make improvements are underway and the Authority feels that as long as these investments take place, the redeveloped infrastructure will be able to keep pace with the anticipated growth in passenger volumes. The BAA did not feel that it faces any particularly significant constraints to the development of its business, stating that the legal and regulatory framework is adequate and that it benefits from the support of a Minister who creates an effective enabling environment for their operations. As with other businesses in the country, access to finance is a challenge, but it has been able to overcome this constraint, partially due to government support.

3.1.4.3 Air Transportation: Freight

Airfreight is not a large business in Belize as most domestic needs are serviced by road transport and most international needs are serviced by sea transport. In fact, Amerijet is the country's only dedicated air cargo operator.

Operating in Belize since 1987, Amerijet runs two inward flights from Miami per week, one on Tuesday and one on Thursday. The Tuesday flight brings in the majority of the week's freight and the Thursday flight is used to follow up on cargo that missed the earlier shipment. Although Amerijet only flies in the Caribbean, the links to Miami afford the possibility of transhipment to Europe and Asia. Most of the freight it handles is either time sensitive, perishable or bulk well below a full container load. Historically, the company was bringing in approximately 60,000 pounds of cargo per week, but its business has been severely impacted by the global economic downturn and the resultant decrease in economic activity in Belize. In the last year and half, Amerijet's import volumes have fallen by roughly 40%.

While American Airlines and some other airlines do carry some freight, each of them seem to have their own markets and as such they do not compete with Amerijet. With no other dedicated air cargo carrier, there are no direct competitors in the country and so the fall in import volume cannot be ascribed to a loss of market share. For this reason, Amerijet attributes the fall in shipping volume to an overall dip in private sector activity. And feedback from the sea transport industry corroborates this claim.

On the export side, volumes have remained relatively constant over the past 2-3 years, with about 10,000-12,000 pounds being shipped from Belize each week. The majority of these shipments are agricultural products and small objects purchased by stayover tourists.

Even at pre-recession import and export volumes, Belize had spare capacity in airfreight. Clearance times of under a day for exports and 1-2 days for imports are not a barrier to trade, but shipping costs will have to be compared with those from other countries to determine competitiveness. At the moment, prospects for investment in this business would seem minimal, even should import volumes return to pre-recession levels in the next few years as Amerijet expects them to.

3.1.5 Transportation: Sea

Belize has 2 main ports, one in Belize City and another further south in the country at Big Creek. Both ports are privately operated and the Belize Port Authority (BPA) has regulatory oversight over these 2 companies. Field research took place in Belize City and Belmopan and there was not time to visit the southern part of the country, so it was not possible to meet with the Port of Big Creek. Therefore the data in the table below relates to the Port of Belize, however the Port Authority and a private shipping company did provide qualitative feedback on Big Creek, which is summarised below. Although the data provided relate to the Port of Belize, much of it can be regarded as representative of the state of the infrastructure at Big Creek as well, given that rates are set centrally and international shipping times from both locations are similar.

Table 12: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/TEU for warehouse pickup to port clearance	$150/TEU	2010	Caribbean Shipping
Time to export	Days from packing at warehouse to departure from port	1-2 days	2010	Caribbean Shipping
Export shipping costs (TEU)	US$/TEU from main port to Miami	$495/TEU	2010	Caribbean Shipping
Export delivery time	Days from departure from main port to arrival in Miami	2.5 days	2010	Caribbean Shipping
Import handling charges	US$/TEU for port clearance to delivery at warehouse	$275/TEU	2010	Caribbean Shipping
Time to import	Days from arrival at port to delivery at warehouse	2-3 days	2010	Caribbean Shipping
Import shipping costs (TEU)	US$/TEU from Miami to main port	$950/TEU	2010	Caribbean Shipping
Import delivery time	Days from departure from Miami to arrival at main port	2.5 days	2010	Caribbean Shipping

Again, cross comparisons of costs and delivery times will be made against data from the other countries to determine competitiveness. However, both the Port Authority and the private shipping company interviewed did provide qualitative perspectives on the competitiveness of the service provided by the Port of Belize and the state of its infrastructure.

3.1.5.1 The Port of Belize

The Port Authority has granted a 30-year licence for the operation of the Port of Belize and the relationship between the regulator and the management company has been somewhat rocky. The BPA reports that non-compliance with the terms of the licence has been repeated and it has little power to sanction the company for these breaches, outside of the drastic and undesirable measures of court action and revoking of the licence. Since the management company owns the port facilities, taking away the license would be fraught with difficulty. Instead, the BPA has attempted to take a collaborative approach to resolving difficulties. Although the license does provide for a review every 5 years, this is mainly aimed at examining the prescribed tariff, not a revision of the terms of the agreement. Despite the review mechanism, the regulator reports that the operator has previously tried to raise tariffs outside the terms prescribed by the agreement.

An additional problem stems from the fact that the licence requires the management company to maintain and modernise the infrastructure, but this is prescribed in general terms. The private sector reports that investment and upkeep has not taken place and the standard of service is not what it should be. The Port Authority confirmed this claim about investment, indicating that its attempts to encourage improvement of equipment have not been successful. The private sector indicated that it has made complaints to the regulator and the BPA indicated that informal complaints are not sufficient for its purposes as there is a formal complaint procedure to be followed. However, the complaint process would seem to be somewhat irrelevant since both the regulator and the private sector agreed that the Port Authority does not have the power to regulate effectively, and this seems to be down to weaknesses in the licence agreement.

It is important to balance these views against those from the Port of Belize. The Port does acknowledge that there is a need to improve the infrastructure, however they do not see the potential for returns on this investment. Prior to the global recession, the Port handled approximately 39,000 twenty-foot equivalent units (TEUs) per year, and the number of containers coming through annually now is 30,000 TEUs. As with airfreight, this drop in volumes has been attributed to decreased economic activity in the country. Recovery is underway, but the pickup has been slow and with 4 ships coming in per week, facilities are not fully utilised.

Looking at a broader time line, it becomes apparent that while shipment volumes have varied over the past decade, there has not been a clear tend in one direction over that period. In considering the figures in the table below, what is immediately apparent is that tonnage in 2009 was at its lowest level since 1999. The average number of ship calls per year from 1999 to 2009 was 240, so the 235 calls in 2009 were below average, but only slightly. Therefore, the ships that came into Belize that year were, on average, carrying less cargo each than in any year since 1999. One private shipping line indicated that its vessels are presently running at 35% capacity.

Table 13: Port of Belize – Annual Cargo Throughput and Ship Calls

Year	Throughput (Tons)	Ship Calls
1997	492,770	229
1998	535,933	220
1999	554,728	219
2000	672,955	223
2001	701,921	253
2002	724,510	227
2003	737,533	246
2004	703,203	273
2005	701,715	238
2006	675,486	237
2007	722,796	256
2008	658,632	234
2009	603,460	235

Source: Port of Belize website

While some of the decrease in shipping volumes can be attributed to an overall decrease in private sector activity, both the BPA and the Port indicated that some of the reduction is due to

a loss of business to Guatemala. The Port suggested that lower levels of customs scrutiny in Guatemala led businesses to import in that country and then truck their goods into Belize, as customs inspections are less rigorous at land crossings than marine entry points. It also acknowledged that shipping costs are cheaper in Guatemala, attributing the savings to the higher volume of trade in the country. The Port Authority echoed the point on cost, indicating that a TEU could be brought into Guatemala for US$1,000, as opposed to US$1,225 at the Port of Belize. The extent to which customs control plays a factor in this trend is difficult to determine, but it is clear that Belize is not as competitive as some of its immediate neighbours in terms of shipping costs, something that does have an impact on trade volumes.

With shipping volumes fluctuating in an inconsistent manner since 1997, the Port of Belize's claims that returns to investment in facilities would not exist does seem to have some merit. At the moment, ships do not arrive on Wednesdays and Thursdays, so facilities are not fully utilised throughout the week. Despite this, the Port does normally take 3 days to fully offload containers from a ship. And it is clear that its customers do have an issue with the quality of service it provides. Given the added time and cost that would be involved in moving goods to and from the Port of Big Creek, it seems unlikely that trade for the central and northern parts of the country would be lost to the southern port. And with a licensing agreement that does not allow the Port Authority to compel the Port to develop its infrastructure, users remain at the mercy of the service provider in this regard. Therefore, in order for investment to take place, the management company must be convinced that it will be beneficial to the bottom line.

With trade volumes seemingly tied to economic growth, the management company may be correct in saying that investment in facilities will not lead to increased business. This would seem to be its primary concern as it indicated it does not face a challenge in accessing finance when it does decide to make investments. However, it could undertake investment that would lead to efficiency gains, as this would allow it to achieve greater profit margins against a fixed volume of trade. This would result in better customer service and should help its bottom line.

The implementation of the ASYCUDA World[8] system should work along these lines and the Port will have to make certain investments to facilitate its operation. For example, it will have to procure a scanner for the system by 2014, which could cost up to US$3 million. It does have a business plan in place to cover the cost of implementing ASYCUDA, and part of this plan involves a request for an increase in rates that have been unchanged for 30 years. In addition to applying for tariff increases, the Port is looking to expand its revenue streams into other areas.

Essentially, this amounts to charging for additional services and it would seem that the management company is, at least to some degree, oriented towards rent-seeking behaviour. Balancing this pattern of behaviour are the Port's reports that the BPA has increased the tariffs it charges, while keeping the Port's fees constant. This erosion of its profit margins may be contributing to the Port of Belize's attempts to try to capture revenues from other sources.

[8] Stakeholder feedback indicates that the ASYCUDA World system is not being implemented at land borders yet, so entry procedures will not be harmonised with those at sea entry points. Given the comments regarding the use of land borders to benefit from laxer customs controls, it is important that the system impose uniform standards on Belize's entry points. This will ensure uniform regulation of trade and will prevent the sea ports from being disadvantaged if customs control at land borders remains less stringent post-ASYCUDA.

The feedback from the various stakeholders highlights a number of challenges at the Port of Belize. It is evident from this feedback that a weak regulatory structure has contributed to or helped perpetuate the poor quality of service, and that the approach of the regulator, operator and users of the system to addressing the challenges has been closer to adversarial than cooperative. While improvements are being made, more effective governance arrangements, and the effective partnership working they should engender, should help increase the pace and efficacy of investment.

The BPA has acknowledged the deficiencies in the licensing agreement and is also attempting to harmonise laws and regulations and bring them in line with international best practice. At the moment, there are 4 acts that affect the operation of the Port Authority and a draft of a revised act to harmonise them is expected by the middle of this year. Given the obvious problems around regulation of the Port of Belize, it would be a major oversight if this initiative does not address the deficiencies in the licensing regime.

3.1.5.2 Big Creek Port

As the fieldwork took place in Belize City and Belmopan, it was not possible to meet with the Big Creek Port management company. Therefore the information provided in this section is based on feedback from the Port of Belize, the Port Authority and a private shipping company.

The Port of Belize reports that Big Creek deals mainly with bananas, citrus products and crude oil. While it operates under the same licensing agreement as the one in effect at the Port of Belize, it seems to be operating at greater satisfaction levels than its counterpart. The regulator reports that Big Creek Port has a development plan for further infrastructure investment that includes dredging of the channel to 11 metres and consideration of the possibility of establishing a cruise village there. More anecdotally, it indicates that the Big Creek management company has shown a greater willingness to improve infrastructure than the Port of Belize. For instance, it has built a 60-container barge to facilitate movement of goods between Puerto Barrios in Guatemala and Puerto Castillo in Honduras.

A private shipping line that attempted to bring in goods through Big Creek received correspondence from the Port of Belize's lawyers indicating that they could not do this. This action, particularly in light of Big Creek's willingness to facilitate trade with ports in Guatemala and Honduras is indicative of the very different approaches each of the port management companies have taken to running their businesses. The Port of Belize seems to be focused on trying to generate revenue through higher fees, while the Port of Big Creek seems to be taking a more business-friendly approach. This may be due to the fact that Big Creek faces greater competition from the nearby Guatemalan port, while the Port of Belize does occupy a geographical position that gives it more of an effective monopoly over parts of the country. Whatever the reasons, Big Creek seems to be doing more to facilitate trade than the Port of Belize, which seems to be concerned with protecting its existing business.

3.1.6 Transportation: Road

The Ministry of Works has responsibility for construction and maintenance of Belize's road network. In the past, it also dealt with sea defence structures, hospitals, fire stations, schools, lighthouses and other public structures, but its remit is now chiefly to do with roads, bridges and supporting drainage. As Belize has a far greater land area than any of the other 6 countries covered in the study, comparative analysis of data on the size and density of its road network is unlikely to produce meaningful results. In absolute terms, it will have a far larger network of roads than any of the other countries, and density in relation to land area will always be significantly lower than in the eastern Caribbean islands. And because of the country's size, much of the road network will have been developed to access remote areas and as such will not be paved, bringing down the density of paved roads indicator. Therefore the analysis will not focus on the numbers shown in the table below, but will instead concentrate on the feedback from the Ministry of Works (MOW) in order to more meaningfully profile the country's road infrastructure.

Table 14: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	3,327.96	2010	Ministry of Works
Density of road network	Length of road network/total land area	0.14 km of road/km^2	2010	Ministry of Works, CIA World Factbook
Density of paved roads	Paved roads as a% of total road network	20.69%	2010	Ministry of Works
Condition of road network	% of road network in poor condition			

3.1.6.1 Role of the Ministry of Works

Generally the Ministry is not responsible for municipal streets, although it has provided assistance to civic governments when requested, and funded, in the past. Notably it carried out works in Belize City when the Prime Minister made special funds available. It does work on village streets and drains when it has funds in its budget, but focuses more on highways and feeder roads.

The MOW is in the process of developing a master plan for development and maintenance of the road network, but in the absence of such a formal planning document it has always maintained a list of required works. While construction of new roads and upgrading of existing roads are both on this list, it is important to note that the Ministry contracts out this work and carries out all maintenance works in house. Therefore its budgetary allocation is spent on maintaining the road network and, like many government bodies, it reports that its funding is inadequate for this purpose.

Although the budget has been increased in recent years, it is still approximately one third of what is required for maintenance purposes alone. The MOW recently increased its fleet of road maintenance equipment by 40% and now has an equipment stock worth US$7.5 million. As a minimum, 6 trucks are necessary for each of the country's 6 districts, but at the moment none of them have more than 4. In order to have an economical and efficient fleet, a further US$7.5

million of equipment is required. From the management information systems perspective, additional equipment such as weight in motion sensors would also be beneficial. They would help to automatically count and classify types of vehicles on a particular road, which is currently done by sampling through manual counts. This would provide greater and more accurate information and would help to guide expenditure to areas that most justify it.

To deal with these limitations, the Ministry tries to take a professional rather than an ad hoc approach to maintenance and cycles through a list of roads and villages based on the amount of time previously spent on maintaining each of them. From time to time this orderly approach is disrupted by political interventions, which can force them to move certain areas up the list.

On the organisational side there is one key issue. Halcrow carried out an organisation review of the MOW to improve its functioning and, contrary to its recommendations, Works and Transport were separated into 2 different ministries. The Ministry of Transport handles licensing of drivers and public transportation providers, vehicle registration and traffic violation fines. Without examining the reasons for this division too deeply it is difficult to determine whether the functions of the two ministries are better performed separately or together.

However, both ministries agreed that the transfer of responsibility for line marking on roads from Works to Transport is not useful. Given that the MOW has this equipment and needs to transfer it to Transport is an initial difficulty. However, the situation is made worse by the simple fact that since Works is performing maintenance and overseeing construction of the roads infrastructure, it is better placed to carry out the line marking function than Transport is. Therefore it is recommended that this function be shifted back to the Ministry of Works for more efficient performance.

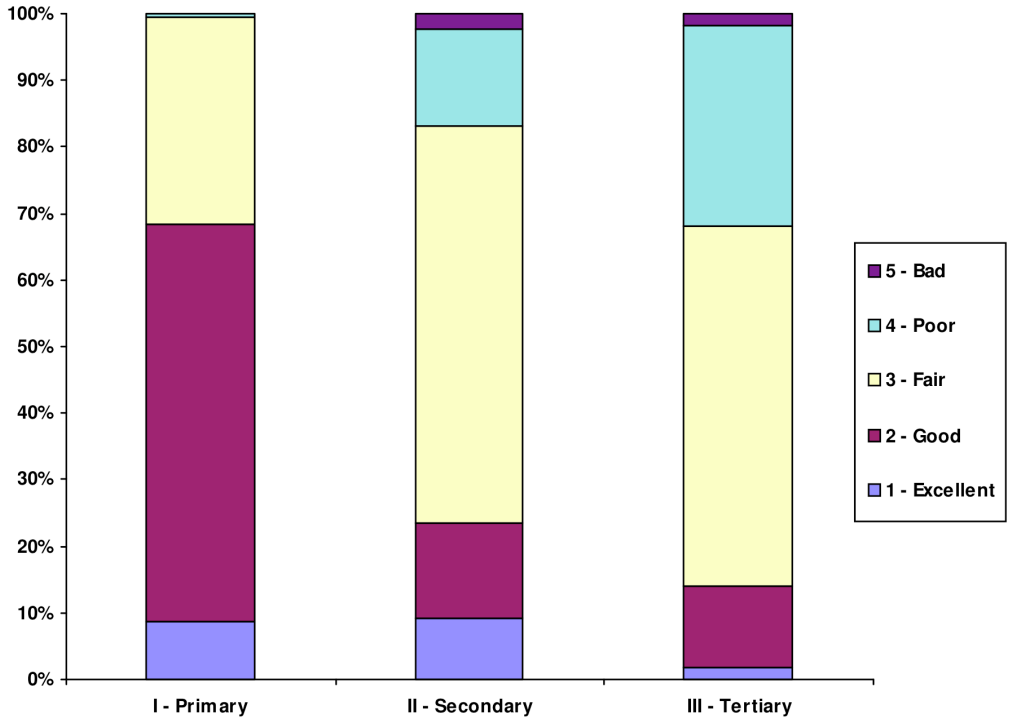
3.1.6.2 Status of the Road Network

In terms of the condition of the roads, it is unsurprising that those in the overall best state are the main highways and that quality deteriorates from these primary roads down through secondary and tertiary roads, as shown in Figure 1.[9] Nearly 70% of primary roads, which account for 76.2% of all paved roads, are in good or excellent condition. Although a larger percentage of secondary roads are in excellent condition as compared with primary roads, the proportion of this category in good or excellent condition is only slightly over 20%. Notably, secondary roads make up 22.2% of the country's paved roads. Finally, over 10% of tertiary roads are in good or excellent condition and this category accounts for the remaining 1.6% of paved roads in Belize.

[9] The Ministry of Works defines the 3 categories of roads as follows:

- Primary Roads: main highways with a road reserve width of 100 feet.
- Secondary Roads: town and village access roads with a road reserve width of 66 feet.
- Tertiary Roads: village and farm roads with a road reserve width of 40 feet.

Figure 1: 2010 Belize Road Network Condition



Source: Ministry of Works ROMAPS Reports

The fact that the category with the highest proportion of paved roads is in the overall best condition makes sense as these surfaces remain in a better condition longer than unpaved surfaces. While it is clear that work needs to be done and that despite the limitations the Ministry of Works faces, it is encouraging that the vast majority of the road network, irrespective of category is at least in fair condition. Nearly 100% of primary roads are fair or better, over 80% of secondary roads are as well and close to 70% of tertiary roads meet the fair or better standard as well. Nevertheless, traffic fatalities are leading cause of male deaths in Belize.

3.1.6.3 Recent and Planned Works

Limited budget or not, the Ministry of Works has been active in either undertaking work itself or commissioning projects. Recently, paving of the 100 mile Southern Highway was completed and the paving of the Placencia Road on the southeast coast is nearing completion. For projects of this kind, the MOW often seeks external funding. The Placencia Road project, for example, was funded by the Caribbean Development Bank. The Ministry reports that it has done fairly well in terms of sourcing capital for investment and has either accessed funds or had discussions with the Inter-American Development Bank (IDB), the Kuwait Fund, the OPEC Fund for International Development, the Austrians and the Chinese, among others. They have secured EU funding for paved upgrades of roads in the northern part of the country, which is part of a wider initiative to help the sugarcane industry increase activity.

Future plans for which the Ministry is seeking funding for include:

- Paving of a 40-mile stretch of the Northern Highway.
- Paving of the coastal road.
- Construction of a street bridge in Belize City to help reduce congestion.

More general plans include:

- Improvement of the Western Highway. An assessment showed that there were a few issues, such as good riding quality but poor skid resistance from Belize City to Belmopan and poor riding quality but good skid resistance from Belmopan on to Cayo.
- An 11-mile causeway to link San Pedro to the mainland. As part of that initiative, the MOW would like to improve the quality of the Northern Highway to improve access to the San Pedro link.
- A US$6 million project to fix the bridge over the Mexican border.

The upshot of all this is that the Ministry of Works is active in applying its existing resources to maintenance of the roads infrastructure and in seeking financing and partners to supplement and augment its capability. Its success in this regard and in increasing its budgetary allocation is in part a reflection of its political clout, which the Ministry indicated is important in order to get things done.

Aside from the state of the physical road infrastructure, there is also an issue around the quality of public transportation in the country, with the Ministry of Transport reporting complaints about overcrowding and delays in service. The Ministry controls the licensing of private transport service providers, determining where their routes may run and their scheduling. While it can utilise its regulatory power to attempt to deliver improvements in this industry, private investment is primarily what is required for improved service.

Predictably, the Ministry reports that transport providers have stated they need to raise the rates they charge in order to fund such investment. Rates are regulated and requests for increases must be submitted for approval. Both public and private stakeholders in the industry have prepared studies on the cost of transport per mile, and there are discrepancies between the figures reached. The Ministry has been meeting with the Bus Owner's Association to try to arrive at some agreement on the figure, as this would facilitate a more transparent procedure for rate setting. It is important that the procedure also accounts for movement in the cost of service provision through changing fuel prices and that a means of making rate increases conditional on investment in equipment and facilities be established. Greater transparency, cost accounting and tying of higher fees to investment should help to mitigate the inevitable public complaints about higher ticket prices.

3.2 Land

While Belize has institutions that deal with land use and licensing, data on the volume and types of land available for development are lacking. Outside of the investment arena, this lack of information makes it difficult for the relevant authorities to effectively manage land resources and develop effective usage plans. The institutions involved in this area are aware of the problems created by a lack of information and a key initiative is underway to address the deficiencies.

The Physical Planning Section of the Lands & Surveys Department has responsibility for land use planning and management and has indicated that limited spatial data exists on land availability. While Belize is different from countries in the eastern Caribbean in that it encompasses a far larger area of land, it does suffer from many of the same constraints in terms of resources for management as those small island states. That may help to explain why many land titles, covering 87% of the country, are unregistered. This lack of information on who owns property is exacerbated by the fact that many of these unregistered land titles exist without proper surveys, which makes it difficult to determine exactly which lands are public and which private.

The information problems on land availability extend to land use, as Belize does not have a land use map. Therefore, information on stock of commercial, industrial and freezone land was not available. A Land Use Policy and Integrated Land Use Planning Framework consultancy is underway, but a draft has not yet been produced. The Physical Planning Section has undertaken to provide a draft copy when it is produced, but the timeline for its completion is unclear.

Land valuation falls under the responsibility of the Chief Valuer of the Lands and Surveys Department. At the moment, rates are being revised and are expected to be settled early in 2011.

The consequence of all this is that the information on land the analytical framework seeks to capture, such as stocks, vacancy rates and cost of various types of land is largely unavailable, as shown in the table below. Attempts will be made to follow up with the Physical Planning Section to capture any information that becomes available prior to the conclusion of the study.

Table 15: Analytical Framework – Land

Measure	Units	Data	Year	Source
Stock of commercial sites	Total square metres	Unavailable		
Vacancy rates of commercial sites	% unoccupied	Unavailable		
Cost of renting commercial sites	US$ per square metre/month	Unavailable		
Stock of industrial sites	Total square metres	Unavailable		
Vacancy rates of industrial sites	% unoccupied	Unavailable		
Cost of renting industrial sites	US$ per square metre/month	Unavailable		
Stock of freezones sites	Total square metres	Unavailable		
Vacancy rates of freezone sites	% unoccupied	Unavailable		
Cost of renting freezone sites	US$ per square metre/month	Unavailable		
Length of beaches	Total kilometres	Unavailable		
Cost of purchasing beachfront land	US$/square metre	Unavailable		
Cost of leasing beachfront land	US$/square metre/year	Unavailable		

Measure	Units	Data	Year	Source
Accommodation stock	Total rooms	6,536	2009	Caribbean Tourism Organisation
Accommodation occupancy rates	%	41.1%	2009	Caribbean Tourism Organisation
Amount of arable land	% of total land area	4.44%	2005	CIA World Factbook

The Central Building Authority is charged with approving building permit applications and carrying out site inspections to ensure compliance with approvals. While they do not deal with land use planning, they do have an element of control over information on how lands are used through the permit approval process. At the moment, systematic tracking of approvals by land use is lacking but the Authority is putting together a database to collect this data by capturing the information provided on the building permit application form. While this database will not contain information on total available land stock, it will provide a useful indication of what type of development is taking place in the country and should serve as a useful resource for the Physical Planning Section as it shapes land use policy. Indeed, information on approvals and status of construction should be fed back into land use policy and planning to allow for adjustment during execution.

The efforts by the Physical Planning Section and the Central Building Authority to implement stronger informational and operational tools should lead to more effective land management. However, the Authority did indicate that there are a plethora of laws dealing with construction in Belize and that harmonisation under the Building Act would be beneficial. And with the CARICOM Regional Organisation for Standards and Quality (CROSQ) implementing regional building standards, the need for legislative reform becomes more clear.

3.3 Labour

3.3.1 Labour Market Data

As with the other countries in the study, nuanced data on the supply of labour is lacking. Disaggregated information on areas such as employment by types of industry and cost of certain types of labour within industries is not captured by the Statistical Institute of Belize's (SIB) labour force survey. It must be acknowledged that this type of data is difficult to collect for nearly any country, but it must also be stressed that for countries that are heavily reliant on services sector industries, it is important that such information is available, both for planning and investment purposes. Without sufficient information on the labour market, it is difficult to determine levels of competitiveness that are essential determinants of investment attractiveness, particularly in services. And it also means that initiatives to develop the country's human resource base will not be informed by adequate knowledge of the current state of affairs.

Both the deficiency and the need have been recognised and the Department of Labour is working on a Labour Market Information System (LMIS) that should capture a larger and more detailed amount of data in a systematic fashion. At the moment, the Department relies on the SIB for data. While it would continue to do so once the LMIS is up and running, the system would draw on information from the Social Security Board and the Chamber of Commerce and Industry, which the Department of Labour would then administer. What should result is a nuanced picture of the labour market that would facilitate more effective planning, both in terms of human resource development and economic development, as well as better investment promotion.

For the moment though, data are lacking. Much of the information captured by the SIB focuses on traditional areas of economic activity such as agriculture, manufacturing and services, particularly conventional activities such as construction and wholesale and retail trade. Statistics on emerging activities such as employment in the IT industry, for example, are not presented in the SIB information. It is important to note that information on total IT employment can be difficult to gather because it is a cross-cutting industry and IT labourers are often employed in support roles in other industries. Given that ICT is one of the priority areas in the country's export strategy, inclusion of this industry in the LMIS would seem to be necessary.

Within the areas covered by the SIB, only total employment by industry is provided and no distinction is made between skilled and unskilled workers. Again, such distinctions are difficult to capture, and even to precisely define in a uniform manner conducive to data collection. But in order to be truly useful, labour market information should contain such nuance and indications of the cost of labour at the various levels. As data coverage, both in terms of industries addressed and level of detail, is lacking, the analytical framework on labour, which covers total employment, proportion of skilled and unskilled labour and the cost of each in the agriculture, tourism and ICT-enabled services industries could not be completed. Data from the SIB on income levels in these industries has yet to be provided despite a few requests. Further attempts to obtain this information will be made and, to the extent possible, it will be used to provide proxy indications of numbers of skilled and unskilled workers and the cost at each level in these industries. Of the information sought by the analytical framework, only total employment in agriculture and tourism is currently available. As of 2007, total employment in

agriculture was 24,837, or 22.2% of the employed workforce. In the same year, tourism provided 15,668 jobs, representing 14.0% of those in work at that time.

3.3.2 Labour Market Characteristics

Unemployment is a problem that is particularly pronounced among women and youth. SIB's September 2009 labour force survey indicated that 12.6% of the 144,363 people in the labour force were unemployed, but the figure rose to 20% for both women and youth. The Department of Labour has indicated there is a large demand for unskilled labour as some Belizeans do not want to take on these types of jobs, particularly in the agricultural industry. As a result, about 6,000 migrant workers have taken on these jobs. Were these positions filled by the unemployed population, the unemployment rate would drop to 8.4%, using the September 2009 figures.

The Department of Labour referred to this scenario as voluntary unemployment and it does suggest that there may be an issue with adequacy of employment opportunities. Investment, particularly in fledgling industries, can help to address a lack of job opportunities, and by doing so can provide an incentive for individuals to invest in training and development of skills.

In terms of availability of training, Belize does have a wider range of options than many of the Organisation of Eastern Caribbean States (OECS) countries. As in the other countries included in the study, it does have an open campus of the University of the West Indies (UWI). However, the option to study at UWI, either at one of the 3 physical campuses in the region or at the local virtual campus, is supplemented by the existence of 2 other universities, one public and one private. The public University of Belize has over 2,500 students and it offers associate and bachelor degrees in 4 faculties: Education and Arts, Management and Social Sciences, Nursing and Allied Health, and Science and Technology. 3 master's degrees are also available via collaboration with Caribbean and North American institutions. The private Galen University offers both undergraduate and graduate degrees and is affiliated with the University of Indianapolis. A comparison of tuition costs between the three institutions is shown in Table 15. Unsurprisingly, the tuition cost for local students is cheaper at the University of Belize and at UWI, both of which are public institutions, than at Galen University. However, while Galen is more than 3 times the cost of the University of Belize, it is only 12.2% more expensive than UWI. So in terms of academic tertiary institutions, Belize affords a number of possibilities, and at a competitive cost.

Table 16: Comparative Undergraduate Tuition Costs (in US$)

Tuition Cost	University of Belize	Galen University	UWI – Cave Hill
Local or Regional Student (regional only applies to UWI)	$45/credit hour	$137.50/credit hour	$122.50/credit
Foreign Student	$90/credit hour (foreign student from developing country) $135/credit hour (foreign student from developed country)	$275/credit hour	$687.35/credit*

Source: University of Belize, Galen University and UWI websites

* Foreign student tuition cost at UWI includes tuition and economic costs. The governments of contributing countries, which includes all 7 countries in the study, normally meet the economic

cost portion of fees for students. So the figures represent the tuition costs each type of student would face.

This offering is augmented by the Institutes for Technical and Vocational Education and Training (ITVETs). One ITVET is located is each of the country's 6 districts. The fieldwork did include a meeting with the ITVET in Belize City. One of the principle concerns expressed during the meeting was that linkages between the Department of Labour on one side and the Ministry of Education and the ITVETs on the other were not as strong as they could be. As a result the training offered by the ITVETs is not informed by labour market needs in a systematic manner. The LMIS could help to address this situation and as the Labour Commissioner sits on the National TVET Board the institutional linkage is in place to allow this viewpoint to factor in to the development of the information system. The current training courses available can be grouped as follows:

- Low value added services linked to tourism: house keeping, bartending, food & beverage preparation & catering, food & beverage service, front office, tour guiding.
- Technical skills with potential for higher value-added employment: automotive, automotive body, AC & refrigeration, computer repairs, electrical, coastal navigation.
- General skills: introduction to computers, small business.
- Other skills: manicure & pedicure, hairdressing.

It is clear that, even in technical areas such as electrical, which might afford the possibility of more lucrative employment, the training on offer is focused on traditional areas that are unlikely to foster the development of new industries capable of having a transformative effect on the economy. The level of ICT training in particular is deficient as areas such as programming, network development and technical support are wholly lacking. Given that ICT is one of the priority areas in the export strategy, it would seem that there is a gap between the technical training offered and some of the country's development plans. Along with meeting the practical demands of the labour market, ITVETs should aim to produce a work force with the skills to meet broader strategic objectives. In some senses, this would seem to be lacking at present.

Again, some of what the Department of Labour is attempting to do should help address some of the challenges in the labour market. It is working on a Decent Work Programme, which focuses on 3 areas:

1. Modernisation and harmonisation of the legal framework. Through the Labour Advisory Board, representatives from the private sector, trade unions and ministerial appointees designated to represent the national interest have been charged with reviewing all labour laws.

2. How to assist vulnerable groups, such as women and youth. As these groups face above national average unemployment, the focus is on how to increase their employability through training. The Ministry of Human Development and the ITVETs are involved in this area and therefore it should assist in addressing the adequacy of training for broader strategic goals. The LMIS will play an important role in this area by providing the information base to guide policy choices.

3. Institutional strengthening and capacity building of unions, the private sector (through the Chamber of Commerce and Industry) and the Department of Labour.

What is clear is that there are information deficiencies that hinder efforts to develop Belize's human resources. Establishment of the LMIS in a holistic manner that allows for accurate data on areas of employment, levels of skill, cost and labour market demands to flow freely between stakeholders is critical. If this is done it should provide the necessary information to guide strategic labour market planning and practical execution of the strategies through provision of relevant training.

3.4 Capital

3.4.1 Access to Finance

As in many other Caribbean countries, access to finance can be a challenge for certain types of businesses and businesses in certain industries. Commercial lending rates tend to be high in comparison with those in developed countries, which can effectively preclude small businesses from borrowing funds or impose repayment terms that undermine the viability of such businesses. Table 16 provides data on financial sector indicators in Belize and with commercial lending rates of 14-15%, it is clear that mainstream lending may not be an option for some businesses, particularly small ones. That scenario is complicated by the importance of microenterprises to the economy; the Development Finance Corporation (DFC) roughly estimated that the micro sector accounts for about 35% of the GDP.

Table 17: Analytical Framework – Capital

Measure	Units	Data	Year	Source
Private credit/GDP	%	65.9%	2009	World Bank
Central bank lending rate	%	n/a	n/a	Central Bank of Belize
Central bank savings rate	%	4%	2010	Central Bank of Belize
National bank commercial lending rates	%	14-15%	2010	Central Bank of Belize, DFC
Development bank commercial lending rates	%	Microenterprise entrepreneurship programme: 8% Standard rate: 10.75%	2010	DFC

The Central Bank of Belize (CBB) provided some useful insights on factors that influence lending in the country. In addition to featuring high rates, commercial lending has tended to focus on traditional activities such as the distributive sectors due to the ready availability of collateral. As collateral for non-traditional activities such as professional services may not be readily available, businesses in these areas can face a financing challenge. Alternative means of financing do not seem to be well developed; venture capital, for example, is not common because many businesses tend to be family-owned and do not want to give up equity, which has limited the development of this market. While external borrowing, for those who can attract it, is an option, financing in this way is subject to CBB approval due to exchange rate controls. These difficulties in accessing finance led to the establishment of the DFC to fill in some of the gaps in the financial market.

3.4.2 The Development Finance Corporation

The DFC was established in 1963 and restructured under government ownership in 1973. Perhaps unsurprisingly, it was subject to some government interference and at times took on loans that were not in the Corporation's interest. As a result, the proportion of non-performing loans in its portfolio was high, around 30%, and threatened the DFC's viability. A 2008 decision to revitalise its operations and resume lending led to a new Development Finance Corporation Act in 2009 that set out improved governance and institutional measures. The new Act clearly indicates that the role of the DFC is not to compete directly with other financial institutions but

to expand the availability of financial services by providing credit to those who would otherwise be unable to fund their requirements from other sources on reasonable terms and conditions.[10]

Despite these developments, the DFC's loan portfolio at US$43.9 million in 2009 has contracted significantly from the US$151.5 million it stood at in 2005. Given the overall economic growth over that time period it is clear that, despite the refocus in lending, the DFC has fewer resources available for financing than in the past. The composition of its lending portfolio also shows a movement towards more stable lending, perhaps in reaction to the previously high incidence of non-performing loans. There has been a shift from lending in the agricultural sector to residential mortgage financing, which has moved from 40% of the portfolio to account for 62.5% in 2009. However, the DFC is trying to move back to increased lending to productive activities. The proportion of non-performing loans in the productive sectors rose from 9% in July 2010 to 15% by the end of the year, but the DFC indicated this is due to under payment rather than non-payment and that it is largely satisfied with the willingness to pay among this group. In order to facilitate this shift, a number of types of loans are available, including:

- A standard lending rate of 10.75%.
- A microenterprise entrepreneurship programme lending at 8%.
- 9% lending for rehabilitation of the sugarcane industry.

In addition to lending directly to consumers at these rates, the DFC offers funds to NGOs and credit unions at 6.25% for on lending to microenterprises. This is designed to help the DFC move away from direct lending and the attendant administrative costs. Besides preferential rates, access to finance is broadened by a variety of options for collateral on loans up to US$7,500, which can be secured by a promissory note or bill of sale on chattels. The DFC also provides business support services and credit officers help prospective borrowers with the preparation of business plans. The Corporation is also active in sourcing support for small producers through lines of credit and technical assistance to aid initiatives such as certification for products and services.

Although the overriding constraint in accessing finance is the high commercial lending rates, within the context of the DFC's attempts to meet lending gaps there are a few other challenges:

- Although credit unions are making good progress on micro lending, they are limited to 20% of their capital for lending purposes. Therefore they either need additional capital to make more funds available to the private sector or a reconsideration of this threshold, perhaps specifically for micro enterprise lending.
- The DFC does have sufficient credit to meet current lending demands, but it has to expend a great deal of effort to secure new sources of financing on an ongoing basis.
- Knowledge, both in terms of market information and incentives available, among the micro sector is low, meaning that business and support opportunities can go unrealised.
- Technical capabilities among much of the small business sector in terms of preparing proposals, business plans, financial management and record keeping is lacking.

It is clear that access to finance is a constraint for much of the private sector in Belize, particularly for smaller enterprises. The DFC and credit unions are attempting to address this

[10] Development Finance Corporation Annual Report 2009.

constraint and the largely EU-funded Belize Rural Development Programme is piloting a micro grant programme with a US$500 cap on grants to start or assist micro enterprises. However, the lack of business management capability among small and micro businesses suggests that a lack of funds is not the only problem. While support is available through institutions such as the Caribbean Development Bank and the CARICOM Development Fund, there would seem to be a need for a holistic review of the challenges facing the micro sector, the assistance available and what other measures are required to facilitate private sector development.

4 Findings: Grenada

4.1 Infrastructure

4.1.1 Power

Grenada Electricity Services Limited (GRENLEC) is the country's primary provider of electricity. Some private individuals have installed solar power systems attached to the GRENLEC-owned grid, but aside from these exceptions, the company is the sole generator, transmitter and distributor of electricity in Grenada. The majority of the country's 41.4 MW installed capacity is produced at the single generating station on Grenada, which accounts for 39 MW of production. The rest of the production facilities include a 1.92 MW station in Carriacou and a 483 kW station on Petite Martinique. As all power is produced using diesel, all of Grenada's production capacity can be available at any given time, and so firm capacity is equivalent to total installed capacity, as shown in the table below. Peak demand is 74.9% of current production levels and so it seems that GRENLEC has the generating infrastructure to respond to growth in demand for some time.

Table 18: Analytical Framework – Power

Measure	Units	Data	Year	Source
Installed capacity	MW	41.4 MW	2010	GRENLEC website
Delivered capacity or firm capacity	MW	41.4 MW	2010	GRENLEC website
Peak demand	MW	31 MW	2010	GRENLEC
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	US$359.30/MWh	2010	CARILEC Tariff Survey June 2010
Electric power consumption	MWh per capita	1.67 MWh per capita	2009	GRENLEC Annual Report 2009
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)			
Average number of brownouts	Number per month			
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)			
Time to obtain electrical connection	Days			

With no domestic oil production, Grenada must import fuel to meet its requirements for transport and electricity generation. This represents a significant expenditure and in 2009,

GRENLEC spent approximately US$23.29 million on diesel, which amounts to 3.7% of GDP.[11] Volatility and high oil prices therefore represent a significant risk to GRENLEC's profitability, even with the possibility of levying a fuel surcharge that can push the cost per kWh up by 50%.

This raises the question of the viability of relying solely on diesel as a source of energy. As noted above, GRENLEC has more than enough capacity to meet current energy demands. In order to build in a buffer against equipment failure, the company ensures that it is able to meet peak demand with its 2 largest generators offline. When planning development of additional production facilities, it forecasts growth in demand against what it can meet with 2 generators non-operational and then determines what investment will be required. GRENLEC has indicated that one of the constraints it faces is its vulnerability to oil price volatility and this would seem to be contributing to its exploration of sources of renewable energy.

In the 2009 Annual Report, GRENLEC states that it is examining renewable energy options such as wind, solar and geothermal. In terms of wind power, 2 sites for measurement of wind energy potential have been identified, one on Grenada and one on Carriacou. Arrangements to build towers to take measurements to determine the technical and economic potential of wind power in each site are underway. These sites are in addition to 2 others, which have been under evaluation since 2007.

As of 2009, 25 photovoltaic grid-tied solar electric systems had been installed on GRENLEC's grid. These are installed by a separate private company, Grenada Solar Limited (GrenSol), which is able to provide the systems on a one-to-one net metering basis. Under that metering system, any unused excess production flows into the public power supply and the meter spins backward showing a credit to the customer. When there is a shortfall between consumption and what the solar system produces, the shortage will be drawn from the grid and the meter spins forward. At the end of the month, the electricity bill will be reduced by the amount of power the system produced, but if there is a net credit to the user GRENLEC will not pay for it. While the use of these solar power systems is encouraging, there is a proposal to cap the total amount of power that can be generated using the one-to-one net metering system at 1% of the country's total installed capacity. As of 2009, the amount of installed capacity of the solar power systems was 123.83 kW, or 29.9% of the limit of 414 kW based on most recent installed capacity figures. GrenSol has indicated that if the cap is implemented and eventually reached, the alternative metering system will significantly reduce the financial incentive to use the solar systems, particularly given that they require a significant initial capital outlay. Whether or not such a cap is implemented to preserve GRENLEC's market share will say a good deal about Grenada's commitment to renewable energy sources.

Geothermal energy is a much further off option than wind and solar power. Initial prospecting and feasibility studies have commenced and aim to determine Grenada's geothermal energy potential. In the 2009 Annual Report, GRENLEC goes on to indicate that it is working with the Government and other stakeholders to establish the framework for exploration and administration of the resource. Given that it is at an early stage of development, that its full potential and economic viability remain unknown, that a massive capital investment would be required to begin to use the resource and the time required to develop it, this remains very

[11] The figure for diesel expenditure is taken from GRENLEC's 2009 Annual Report. The World Bank gives Grenada's 2009 GDP as US$626,562,952.

much a long-term option. The large capital investment required also calls into question the economies of scale in undertaking such a project. Despite these factors, the viability of geothermal energy is worth exploring.

In its mainstream business, GRENLEC continues to make investments to improve the reach and reliability of its system. 2 substations and a 33 kV transmission network were added in 2009 to increase capacity in the south of Grenada and improve distribution reliability. Penetration rates are in the high 90s and the company has indicated that it can connect anyone to the grid who wants to be connected. To assist those in rural areas with the cost of connectivity, there was a Rural Electrification Programme that provided up to 200 feet of line for free to those well off the grid. The company reports that it does not have a challenge in accessing finance for investment, but did indicate that it uses regional or international banks as local rates are not competitive.

The issue of oil price volatility does raise the issue of how rates are set and the attendant governance arrangements surrounding this private company that enjoys a monopoly on energy supply. GRENLEC has an operating licence issued by the Government of Grenada under the Energy Supply Act of 1994. While there is reportedly a law that allows for the creation of a public utilities commission, no such body has been formed. In the absence of such a regulator, rate increases are approved by Cabinet according to a prescribed method. The rate is composed of a non-fuel and a fuel component. The non-fuel component is linked with inflation and GRENLEC can only apply for a rate increase when the retail prices index increases by more than 2%. The fuel component is tied to oil prices and is established by taking a 3-month rolling average of prices and applying to Cabinet for an increase. How much of fuel cost increases Cabinet will allow GRENLEC to pass on to the customer through its rates remains to be seen. However, the company was due an increase of 3.39% in 2010 and that coupled with VAT, would have pushed up the price of electricity by as much as 5% for commercial and industrial customers. As of June 2010, the cost of electricity in Grenada fell in the middle of the countries in the study. So in regional cost terms, it was neither competitive nor uncompetitive.

4.1.2 Water & Sanitation

The National Water and Sewerage Authority (NAWASA) is a statutory body formed in 1990 and charged with supply of potable water and disposal of sewage. Details of its costs and quality of service are shown below.

Table 19: Analytical Framework – Water & Sanitation

Measure	Units	Data			Year	Source
Cost of water supply	US$/1000 US gallons	Consumption Bands (US gallons/month)	Variable Rate (US$/1,000 US gallons)	Fixed Monthly Charge	2010	NAWASA
		Domestic Customer				
		<2,800	$3.00	$4.00		
		2,800 - 5,500	$5.00	$4.00		
		>5,500	$7.50	$4.00		
		Non-Domestic Customer				
		<2,801	$7.91	$5.56		
		2,801 - 20,000	$7.91	$12.50		
		20,001 - 100,000	$7.91	$51.85		
		>100,000	$7.91	$203.70		
Average number of incidents of water shortages	Number/month	1 /month			2010	NAWASA
Average duration of water shortages	Hours	2 hours			2010	NAWASA
Time to obtain water connection	Days	5 days			2010	NAWASA
Cost of wastewater supply	US$/1000 US gallons	Domestic is 1/3 of water supply cost Commercial and industrial is 2/3 of water supply cost			2010	NAWASA
Quality of waste treatment system	Rating from 1 – 5[12]	St. George's: 2 Grenville: 2			2010	NAWASA

4.1.2.1 Areas Requiring Investment

While the vast majority of the population, about 95%, receives potable water services, the reach of sewage services is much more limited. Only St. George's and Grenville have sewage facilities and they are fairly rudimentary in nature. Facilities in both locations only offer first stage waste

[12] The criteria for the ratings are as follows:

- 5: Public waste treatment facilities provide 1st, 2nd and 3rd stage biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable.
- 4: Facilities provide 1st, 2nd and 3rd stage biological and chemical wastewater treatment, but tap water is not potable.
- 3: Facilities provide 1st and 2nd stage treatment. Wastewater smells.
- 2: Facilities provide 1st stage treatment. Wastewater is harmful to the environment.
- 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.

treatment, which consists of removal of solid particles from liquid waste. The resulting wastewater is harmful to the environment and it is disposed of 1,500 metres out to sea. Given the importance of the marine environment to the country's tourism industry this system does raise concerns. NAWASA also indicated that the sewage infrastructure is quite old, from 1939 in some cases, so it does leak, which is a further worry from both the health and environmental standpoints. There is an act that deals with sensitive environmental areas and disposal of waste, but NAWASA did not provide details of how this legislation impacts on its operations. Some of the tourism properties use independent facilities for waste processing, some of which do feature up to third stage treatment for waste, which does help to mitigate their environmental impact.

There are plans to develop the public facilities from the current rating of 2 to a maximum rating of 5, which mean the facilities would include first, second and third stage treatment of waste to international standards. However, funding for such improvements is an issue and the estimated cost of works at St. George's alone is US$30 million. Further afield, there are also has plans to extend sewerage to all the major towns. In the NAWASA Strategic Plan 2009 – 2014, one of the stated goals is to begin providing sewerage services in priority areas in need of services by December 2012. However, the Plan does not outline what these areas are, instead indicating that a Sewerage Sector Master Plan is to be developed in 2011 that will identify priority communities.

With sewerage unavailable in rural areas, septic tanks are used. NAWASA suggested that this form of waste disposal is suitable for these areas, in part because there are no issues with a high water table, outside of Grenville.

4.1.2.2 The Pattern of Investment

Despite planning for investment, at times capital improvements are not decided on by NAWASA. For example, the majority of capital enhancement and expansion has historically come from grant and project based financing through the public sector investment programme, managed by the Ministry of Finance and the Ministry of Works and Public Utilities.[13] NAWASA's input into these processes has not been consistent and often the Government's priorities differ from those of the company. The Strategic Plan correctly notes that this lack of collaboration in planning represents a lost opportunity for greater efficiency in infrastructure investment and works. As an example, NAWASA's distribution line replacement activities have followed government decisions on road repair, rehabilitation and construction. NAWASA could benefit from such activities as it undertakes distribution upgrades through better coordination on planning of works.

The reason for this dependence on donor funding is simply that the company does not generate enough revenue to undertake such works on its own. As a statutory body, it must finance its operations by charging for its services and it must apply to the Ministry of Works if it would like to increase its fees. Prior to the 30% rate increase that came into effect on April 1, 2010, the tariff had not been raised for 18 years. At the moment, revenue does cover day-to-day operations, but is not sufficient to cover maintenance and improvement of the infrastructure. This shortfall is typically made up by donor funds, and, as stated above, can take NAWASA's

[13] NAWASA Strategic Plan 2009 – 2014.

destiny out of its own hands at times. For example, the most significant capital project for several years has been the EU-funded Southern Grenada Water Project. This US$8.07 million project replaced and upgraded pipelines, treatment plants and storage reservoirs associated with 7 systems that supply the southern and southeastern parts of the country and included an institutional development and capacity building component.[14] Given the difficulties in meeting costs, commercial loans are not a viable option because they would impose additional liabilities NAWASA would struggle to repay.

Much of the Strategic Plan is aimed at dealing with this dependence on grants and developing NAWASA's ability to independently implement at least part of its capital investment programme. To achieve this aim it will need to realise operations surpluses, something it did not do in 2008. The 35% rate increase NAWASA requested was the most important step in improving financial performance and the table below shows the effect of the tariff increase without factoring in any changes in operational efficiency.[15] Although the rate increase granted was only 30%, the forecast does provide a useful indication of what sort of operational surpluses NAWASA could generate from now through to 2014. With the potential to achieve annual profits between US$2.5 and US$3 million, and considering that the most significant water infrastructure project in the past several years was on the order of US$8 million, NAWASA's capability to independently take on capital investments should improve dramatically. However, considering the overall scale of investment required, external financing will continue to be required.

Table 20: NAWASA Revenue and Expenditure Projections

Year	Revenue (EC$)	Total Expenses (EC$)	Net Profit/(Loss) (EC$)	Net Profit/(Loss) (US$)
2009	25,562,340	25,090,814	471,526	174,639
2010	34,509,159	26,244,991	8,264,168	3,060,803
2011	35,440,906	27,452,261	7,988,645	2,958,757
2012	36,397,811	28,715,065	7,682,746	2,845,461
2013	37,380,552	30,035,958	7,344,594	2,720,220
2014	38,389,827	31,417,612	6,972,215	2,582,302
Total	**EC$207,680,595**	**EC$168,956,701**	**EC$38,723,894**	**US$14,342,182**

4.1.2.3 Challenges

The dependence on donor support to fund investment in maintenance and improvement of infrastructure is NAWASA's primary challenge, and it is encouraging that efforts to address this situation are underway. Naturally, there are other constraints that affect the company, and through it, the quality of water and sanitation infrastructure in Grenada.

One of these issues could very well be addressed by NAWASA's newfound potential to invest in infrastructure. Water supply systems tend to be localised and so during droughts there are areas, such as the key tourism centres in the south of the island, that can experience water

[14] NAWASA Annual Report 2008.

[15] These figures are taken from the NAWASA Strategic Plan 2009 – 2014. The revenue and expenditure forecasts are based on the following assumptions: a 35% tariff increase from 2010, a 2.7% annual sales increase and 4.7% annual expenditure increase based on historical trends, no significant increase in outstanding receivables. 2009 data are per NAWASA budget.

shortages. Yet even in times of drought, parts of the island are well supplied with water. Investment to better integrate the localised system and permit redistribution of supplies would help.

The Strategic Plan indicates that 56% of employees did not have the formal skills required for the job. Complicating this problem was the fact that 46% of permanent employees were eligible for retirement at that time. There does seem to be evidence for the lack of skills in a number of customer service metrics reported in the Strategic Plan. Customer satisfaction levels in all of the following areas were low by any standard:

- Reliability: 29%
- Bill processing: 14%
- Response to queries: 9%
- Response to faults, leaks, meter problems: 4%
- Assistance in dry season: 8%
- Notification on interruptions: 6%

Access to skilled labour is a serious issue and the quality of the workforce and adequacy and availability of training will be addressed further in the section on labour in Grenada.

4.1.3 Telecommunications

4.1.3.1 Industry Stakeholders

The industry is regulated by the National Telecommunications Regulatory Commission of Grenada (NTRCG), which was established in 2000 pursuant to the Eastern Caribbean Telecommunications Authority (ECTEL) Treaty. ECTEL is the regulatory body for telecommunications in its 5 member states, which include Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines. ECTEL is composed of a Council of Ministers, a regional Directorate and a National Telecommunications Regulatory Commission (NTRC) in each country that carries out regulatory functions at the national level. Therefore the regulatory structure for the telecommunications industry in the countries in the study, with the exceptions of Antigua and Barbuda and Belize, is similar. The NTRCG offers a number of different licences, but the main ones are: fixed public telecommunications, internet network and services, public mobile telecommunications, public radio paging and submarine cable.

As in many other Caribbean countries, the Grenadian telecommunications industry was subject to a Cable & Wireless (C&W) monopoly until fairly recently. Liberalisation and the varied licensing regime has helped foster competition. In addition to the traditional fixed line provider C&W, which operates under the name LIME, Columbus Communications Grenada, under the brand name Flow, also offers a fixed line service. Both LIME and Flow also offer a broadband service and LIME goes a step further than FLOW as it also offers mobile phone services. The third major player in the market is Digicel, which is a mobile services provider that concentrates on cell phones and supplies wireless internet access.

Flow came to Grenada in April 2008 when it acquired the assets of the cable TV service provider, Grenada Cablevision Ltd. As Flow owns the cable TV infrastructure, it has used the existing cable structure to provide broadband services and has also begun to offer a fixed line service in competition with LIME. LIME is in a similar position as it owns the fixed telephone line infrastructure and uses it to provide broadband. Each of these companies have external connectivity through submarine fibre optic cables, LIME through the older East Caribbean Fibre System and Flow through the Southern Caribbean Fibre, which landed about 2 years ago. The second cable connects into a common area and where there are such areas of interconnectivity between companies, interconnection agreements are in place to govern the relationship between the parties.

4.1.3.2 Characteristics of the Telecommunications Industry

Unfortunately, meetings with LIME and Flow were not possible during the fieldwork, and the meeting with Digicel was with an individual involved in marketing rather than operations who was not able to provide anything in the way of substantive information. Therefore information from the service providers on the challenges they face and their plans for development of infrastructure is not available. However, between the data gathered and perspectives provided by the NTRCG, a fairly robust picture of industry emerges.

The competition within telecommunications has helped bring prices down and the Grenada Chamber of Industry and Commerce (GCIC) reported that broadband rates are among the

lowest in the region. Details of the cost and reach of various telecommunications services are shown below.

Table 21: Analytical Framework – Telecommunications

Indicator	Units	Data		Year	Source
Broadband cost	US$/month (download speed: 2 Mb/second)	LIME	Flow	2010	LIME, Flow websites
		$29.39	Up to 3 Mb/second $25.92		
	US$/month (download speed: 4 Mb/second)	$54.94	n/a	2010	LIME, Flow websites
	US$/month (download speed: 8 Mb/second)	$59.20	$50.00	2010	LIME, Flow websites
	US$/month (download speed: 12 Mb/second)	n/a	$85.18	2010	LIME, Flow websites
Size of external fibre optic connection	Terabits/second				
Internet subscribers	Number/1,000 people	120 (estimated)		2010	NTRCG
Landline cost	US$/month	LIME $11.24 (residential line rental only)	Flow $8.51 (unlimited on network calls + 100 minutes to LIME landline)	2010	LIME, Flow websites
Landline cost of local call	US$/3 minutes	$0.09 (to LIME landline $0.10 (to non-LIME landline)		2010	LIME website
Landline cost of call to mainland US landline	US$/3 minutes	$1.16		2010	LIME website
Landline penetration	Mainlines/1,000 people	273.0		2010	NTRCG
Mobile phone cost	US$/month	LIME: $60 2,500 minutes (on-net) 2,500 SMS (on-net) 1Gb (on-net data)	Digicel: $110.74 1,000 minutes	2010	LIME, Digicel websites
Mobile phone penetration	Mobiles/1,000 people	1,106.1		2010	NTRCG

The cost of broadband does seem to be competitive and is certainly a fraction of the price in Belize. A 4 Mb/second connection in Belize costs US$292.50, whereas an equivalent connection in Grenada is just US$54.94. Although the NTRCG was not able to provide data on the size of the external fibre optic connections, it did indicate that bandwidth availability does not seem to be an issue. With the second cable landing just a few years ago, Grenada would seem to be well placed in this regard.

At around 12% of the population, the number of internet subscribers would seem to be low. However, the low price of broadband and the fact that much of the population is concentrated in the areas around St. George's and Grenville suggest that the low figures are not due to limitations on access. With the market only being liberalised about 10 years ago, take up of broadband should increase with time.

Mobile penetration is over 100%, and is very much the opposite end of the penetration scale. This would suggest that costs are fairly competitive and it will be interesting to see if the heavy preponderance of cellular phones leads to a reduction in the relative frequency of landlines in the population.

The NTRCG did point out that there is a need to introduce 3rd Generation mobile standards to improve mobile connectivity, thereby facilitating the use of smartphones. While there is a need to invest in development of this kind of infrastructure, the legislative framework surrounding the industry must also be updated to adapt to new technology and remain neutral to new forms of technology that develop. Steps have been made in this direction and the telecommunications act is under review and legislation to support e-commerce and data protection is in draft form. The NTRCG did not provide an indication of when these pieces of legislation might come into effect.

4.1.4 Transportation: Air

4.1.4.1 Status of Infrastructure

The Grenada Airport Authority (GAA) is responsible for the operation and maintenance of the country's airports. In addition to the Maurice Bishop International Airport, there are two smaller airports, Lauriston Airport in Carriacou and Pearls Airport in the northeast of the country. Lauriston is basically a domestic airport, although it does occasionally service some regional charters. Pearls has been dormant for 27 years, which is why the data on air transportation infrastructure only reflect the existence of two airports.

Table 22: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	2	2010	GAA
Number of direct flights to US/Europe	Number of flights/week	15 Charters Air Canada: 1 Toronto from Dec to March Air Jazz: 1 Toronto Dec to Jan Sky Service: 1 Toronto Dec to Jan	2010	GAA
Airports with paved runways	Number	2	2010	GAA
Number of paved runways by size	Under 914 metres	1	2010	GAA
	914 - 1,523 metres	0	2010	GAA
	1,524 - 2,437 metres	0	2010	GAA
	2,438 - 3,047 metres	1	2010	GAA
	Over 3,047 metres	0	2010	GAA
Passenger load capacity	Load factor	AA: 75-80% Delta: 60% BA: 45%, but difficult to measure as flight shared with Barbados Virgin: 59%, but difficult to measure as flight shared with Tobago Monarch: 80%	2010	GAA
Freight load capacity	Load factor			
Export handling charges	US$/kg for warehouse pickup to port clearance			
Time to export	Days from packing at warehouse to departure from port			
Export shipping costs	US$/kg from main port to Miami	General $0.10/kg; fruits, vegetables, fish $0.03/kg	2010	Business Grenada Magazine
Import handling charges	US$/kg for port clearance to delivery at warehouse			
Time to import	Days from arrival at port to delivery at warehouse			
Import shipping costs	US$/kg from Miami to main port	General $0.25/kg	2010	Business Grenada Magazine

Although there have been discussions about reopening Pearls, these are very preliminary in nature. Were such a plan to go ahead, the airport would require some minor repairs and it would also come under the authority of the GAA.

In terms of infrastructure works, there are a number of planned activities, but the majority of them have not progressed beyond that stage. The length of the international airport's runway is deemed sufficient for current purposes, but it is due for resurfacing. At the moment, aircraft have to proceed all the way to the end of the runway to turn off, which slows down movement of craft. Eventually the GAA would like to construct a parallel taxiway and has singled this out as the most pressing infrastructure development need, but it is also a major challenge to construct as the terrain on site makes the expansion difficult. Therefore, there is an interim plan to construct a turning bay area approximately two-thirds of the way down the runway. Equipment also needs to be addressed, and the control tower needs navigational equipment, consoles and radios.

The GAA is also planning to resurface the runway at Lauriston and is actively looking for funding to do so. It also indicated that the terminal building needs rehabilitation, but did not state that there are any plans to do this. The primary constraint to carrying out all infrastructure works is accessing funding, and the cost of the radio equipment alone has been quoted at US$889,000.

4.1.4.2 Need for Investment and the GAA's Revenue Base

In order to understand the GAA's difficulty in finding funds for investment, it is necessary to analyse their revenue streams. As a statutory body it does not receive government funding but finances its operations through service fees. The majority of the Authority's revenue is derived from landing fees, landing charges, navigational aid charges, an airport service charge (the departure tax, which was increased this year) and a facilitation charge for incoming passengers. Additional sources of income include a security charge, baggage handling fees and concourse rentals. There is also a charge for cargo, but volumes have fallen significantly in recent years. Cargo volumes used to be around 2 million kilograms per year, but throughput is now about 900,000 kg annually. As more than 95% of Grenada's imports and exports come through the seaports, airfreight is not a large business.[16]

Operations are funded by these revenue streams, an overdraft facility and loans, which are typically government guaranteed. Most borrowing is through local banks and typically at around 9-10% interest. The GAA does borrow from a Trinidadian merchant bank and, at 7-8% interest, does so on more competitive terms than what it gets locally. Its revenues are sufficient to cover operations, maintenance and debt servicing, so expansion is externally financed. Given that revenues are just meeting current debt loads, taking on large loans to fund infrastructure development would only be viable if they translate into increased revenues once the works are complete. Therefore it is important to consider current passenger volumes and any capacity issues that exist to determine whether such investment is likely to pay dividends.

From the GAA's feedback, the need for investment seems to be linked to quality and maintenance issues, rather than an overstressed carrying capacity. The Authority indicated that

[16] Grenada Ports Authority Annual Report and Accounts 2009.

airlift is sufficient at current passenger numbers, which it estimates will be around 380,000 for 2010, including regional passengers. Excess carrying capacity does exist and some routes, such as New York, are oversupplied, as indicated by the fact that many aircraft are flying with spare capacity. Average load factors are shown in the table above, and Delta, which flies out of New York twice a week, is operating at about 60% capacity. American Airlines, which operates 3 flights a week from Miami, tends to run with planes 75-80% full. British Airways and Virgin Atlantic are a bit more difficult to measure as they connect to Grenada via Barbados and Tobago respectively. However, estimates are around 45% for BA, which has 2 flights a week, and 59% for Virgin, which flies once a week, for the onward journey to Grenada. Monarch Airlines, which flies direct once a week from London is around 80% of capacity. Though the numbers vary depending on the route and frequency, it is clear that spare capacity exists all around.

Despite the excess lift capacity, Virgin is planning on adding another flight from London next year. Looking at the extra-regional airlift situation as a whole, it seems that Grenada is well served at the moment and will be over the short term at least. Regionally connectivity is also good, but there is a problem with the relatively high cost of airfares for flights within the Caribbean. Following the LIAT price hike in 2006, arrivals from Trinidad dropped from about 25,000 to 17,000. However, as this is a Caribbean-wide problem, it does not erode Grenada's competitiveness in regional terms. So the airlift is sufficient and could absorb additional passenger numbers. Therefore, investment in large-scale capital works is both unnecessary and unlikely to result in additional revenues for the GAA. As passenger numbers increase, as they are expected to in line with economic recovery in key visitor source markets, they should increase GAA revenues and help it to finance the smaller-scale investments it is planning. These works should keep pace with the demand for quality of infrastructure.

The GAA also indicated that number of hotel rooms is also a factor in considering the impact of higher tourist numbers. The available room stock in 2009 was 1,880 and occupancy rates were 71%.[17] Although arrivals dropped by 6.4% to 106,156 in 2010, there is an issue around the hotel plant's ability to meet surges in demand, particularly at certain quality levels. The Authority suggested that it can be a challenge to locate suitable accommodation for passengers in the event of a large aircraft being delayed for a night. The issue of size and quality of room stock is therefore an issue that should be considered simultaneously with plans to increase visitors to Grenada.

4.1.4.3 Impact of Airlift

The Grenada Airlift Committee (GAC) negotiates with airlines on routes into the country. In addition to the Chairman of the Board of Tourism, the Permanent Secretary of the Ministry of Tourism and the Chairman of the GAA, there are several prominent representatives of the private sector on the GAC, which reports to the Minister of Tourism and Civil Aviation. In a number of cases, airlines coming into Grenada seek a number of incentives for doing so. These do vary by carrier, but can be broadly categorised as follows:

- **Risk sharing:** 3 American carriers work on a risk sharing agreement. For example, for American Airlines, there is a minimum charge per flight into Grenada and as long as the airline's revenue meets that figure, the government does not have to pay anything.

[17] 2009 Country Statistics, Caribbean Tourism Organisation.

- **Marketing support:** These carriers receive funds to finance destination marketing. In the case of British Airways, it receives £775,000 each year for flying to Grenada. They use this money to market Grenada as a destination and prepare a marketing plan to demonstrate to the GAC that the funds are being used for their intended purpose. Virgin Atlantic is under a similar arrangement as is Condor Flugdienst, a German airline, which receives €300,000 annually for marketing support.
- **Joint venture booking:** In partnership with Trinidad and Tobago, Grenada has booked Monarch Airlines, a UK airline, for flights to the two countries. The fixed cost of the flight is shared evenly between the parties and if passenger numbers are sufficient, these costs are recouped. Any profits go to Monarch, while the countries bear the risk of losses. The trade off is the economic benefits they derive from the visitors. At the moment, the average cost is about £122 per passenger, but as Grenada receives more passengers than Tobago, its average cost is lower.

In order to get an understanding of the utility of paying carriers to fly to Grenada, the GAC carried out a study on the economic benefits of visitors from the US, the UK, Canada and Germany. Using airline manifests, the study established total inbound visitors in 2009 from each country and then reduced the numbers by those not staying in paid accommodation. The average per day spend of each visitor type was then multiplied by the average length of stay to arrive at an average spend per passenger. The details of the GAC analysis are reproduced in the table below.

Table 23: Economic Impact of Airlift (US$)

	US	Canada	UK	Germany	Total
Movements					
Inbound Passengers	42,449	5,095	29,933	1,880	79,357
Outbound Passengers	43,729	4,839	29,957	1,835	80,360
Sub-total	86,178	9,934	59,890	3,715	159,717
Aircraft Movements	1,042	41	360	26	1,469
Average Passengers per Flight	83	242	166	143	109
% of Inbound in Paid Accommodation	65%	69%	75%	100%	
Inbound in Paid Accommodation	27,592	3,531	22,450	1,880	55,453
Passenger Spend					
Average Stay (days)	7	11	10	14	
Average Spend per Day	$166.67	$239.22	$158.22	$203.70	
Average Spend per Passenger	$1,166.67	$2,631.44	$1,582.22	$2,851.85	
Total Passenger Spend	$32,190,491.67	$9,291,866.51	$35,520,493.33	$5,361,481.48	$82,364,333
Airport Revenues	$3,403,486.95	$717,800.51	$2,333,704.77	$150,510.76	$6,605,503
Total Direct Contribution	$35,593,978.62	$10,009,667.01	$37,854,198.10	$5,511,992.24	$88,969,836
Airline Support	$754,694.44	$0.00	$1,734,178.70	$0.00	$2,488,873
Net Economic Benefit	$34,839,284.17	$10,009,667.01	$36,120,019.40	$5,511,992.24	$86,480,963
Net Economic Benefit per Passenger Accommodated	$1,262.67	$2,834.72	$1,608.93	$2,931.91	$1,559.54

There is a wealth of information is this table and the key finding from the GAC's perspective is that although the amounts spent to bring flights to the country are relatively large in terms of

the available marketing budget, they are a small fraction of the direct contribution they make to the economy. For the countries receiving airline support, the amounts provided were just 2.8% of the total revenue generated. So it is clear that paying to bring airlines in is worthwhile but one must be careful about assuming that more flights will continue to lead to more funds. At some point, passenger numbers will drop to an extent that it is no longer viable. Therefore, what is important is to use the data to establish where potential growth exists.

Key metrics in that regard are the number of passengers per flight and the average spend per passenger. The first measure provides an indication of how well served a particular market is and how much uptake of further flights there might be. Canada has a much higher number of passengers per flight, 242, than the next highest country, the UK, at 166, indicating that there is demand in this market. Canadians also spend the most per day of visitors from the 4 countries, although the total spend per visit is slightly less than German tourists as they tend to stay longer. Flights from Canada are not available year round, which is what contributes to the high passenger loads, but the data suggest that there is an opportunity to increase the number of arrivals from this country, with the added benefit of high per capita spending levels. The GAC study has helped to justify the financial support for airlift and given the apparent potential in the Canadian market, the possibility of making such an arrangement with a Canadian carrier is worth exploring.

4.1.5 Transportation: Sea

4.1.5.1 Sources of Revenue and Implications for Investment

The Grenada Ports Authority (GPA) is a statutory body created by the Ports Authority Act. The GPA owns and operates the port infrastructure and carries out its operations subject to the regulations pursuant to the Act. Cargo handling operations, including provision of berths and pilotage services, generate over 80% of the Authority's revenue,[18] and the fees it charges for the services are set at a specific level. Increases in the tariffs are subject to Ministerial review and an increase in 2010 was the first one in 10 years. With its rates relatively fixed in this manner, the GPA is mainly dependent on increased trade to increase its revenue. But as with many eastern Caribbean nations, the majority of trade through the seaports is import-based and is therefore strongly linked with overall economic activity, rather than competitiveness of port services and infrastructure.

Early stage Ministry of Finance data indicated that the domestic economy shrank by 7.7% in 2009, with the largest dip in the construction sector, which contracted by 52.4% that year.[19] The decrease in activity led to a 5% drop in cargo throughput from 2008, with a 6.3% drop in imports slightly offset by a 13.9% increase in exports. When movement of goods is expressed in tons, the dominance of imports becomes clear as they accounted for 92.3% of cargo throughput. The trend of decreased activity extended to container throughput, which experienced a 16.3% decline to 14,904 TEUs in 2009. Ship calls have been on a downward trend since 2005 and this continued in 2009 with a 1.4% decrease to 1,447 calls. Notably, cruise ship calls bucked this trend and increased 8.2% to 251, pushing the number of cruise passenger arrivals to an all-time high of 343,032. This may help to account for the fact that the GPA's gross revenues increased to EC$20.1 million, an increase of EC$200,000 over 2008.

With this contraction in trade and the fact that cargo handling operations consume a significant proportion of financial resources, the GPA has been concentrating on increasing productivity and efficiency.[20] Grenada is in a similar position to Belize in that its seaport trade is heavily import-based and trade volumes are tied to economic activity more than quality of port services. As a result investment in facilities may not lead to larger trade volumes and therefore would not provide a return to investment from that perspective. Given that situation, and the relatively fixed tariff level, the Authority focusing on efficiency gains would seem to be its best option for improving its financial position and should have the added benefit of improving customer service.

An ASYCUDA World project is underway and is due for completion in 2012 and should help in this regard. While the GPA reports a good working relationship with Customs, ASYCUDA World should improve the functional relationship as it moves towards a paperless system.

[18] Grenada Ports Authority Annual Report and Accounts 2009.
[19] All figures in this paragraph are taken from the Grenada Ports Authority Annual Report and Accounts 2009.
[20] Grenada Ports Authority Annual Report and Accounts 2009.

Despite the focus on efficiency and productivity and the fact that it regards the state of the infrastructure to be adequate, the GPA did indicate that improvements could be made and the quality of the infrastructure is discussed in the section below.

4.1.5.2 Status of Infrastructure

The results of the data collection exercise are shown in the table below. Shipping costs are high in comparison with Belize, and the expectation is that this is a pattern that will be repeated in the other eastern Caribbean nations in the study. Part of the reason for the high costs is that the cost of stevedoring labour is high, the GPA noting that it is in the top 5 in the Caribbean region. This is due in part to a strong union, which means that reducing the labour rates could be a challenge. The Authority did state that the quality of labour was adequate.

Table 24: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/TEU for warehouse pickup to port clearance			
Time to export	Days from packing at warehouse to departure from port	1	2010	GPA
Export shipping costs (TEU)	US$/TEU from main port to Miami	$2,000/TEU	2010	GPA
Export delivery time	Days from departure from main port to arrival in Miami	5 days	2010	GPA
Import handling charges	US$/TEU for port clearance to delivery at warehouse			
Time to import	Days from arrival at port to delivery at warehouse	3 days	2010	GPA
Import shipping costs (TEU)	US$/TEU from Miami to main port	$2,400 /TEU	2010	GPA
Import delivery time	Days from departure from Miami to arrival at main port	7-14 days	2010	GPA

There are 3 lines serving south Florida directly from Grenada, Tropical Shipping, Bernuth Lines and SeaFreight Agencies, and each of them operate a weekly call. Of these 3, only Tropical comes directly to Grenada, the other 2 tranship, hence the reason for the variation from 7 to 14 days to import from Miami.

In terms of constraints, the port operates from 7 am to 11 pm, and the ships would prefer a 24-hour service to afford increased flexibility. The GPA did indicate that the only increase in cost of extending hours would be the cost of staff on shift. However, given its focus on efficiency and the decrease in trade volumes, it seems unlikely that this change will be made in the near term.

The Ports Authority Act empowers the GPA and it regards the legislation as being modern enough to permit it to carry out its functions in the manner it would like to. While the working relationship with Customs is sound, the laws in that area are not as flexible and this has been cited as a constraint. And with a time of 3 days from arrival at port to delivery to customer, there would seem to be issues with customs clearance times. The legislation and regulations dealing with customs clearance, as well as the operational performance, should be addressed within the context of the ASYCUDA World project.

An expansion in 2000 extended the quay to allow 335 metres of berth, with a depth alongside of 9 metres. This can accommodate feeder ships that go direct to Miami and have a 1,100 TEU capacity. As part of the expansion there was a land reclamation, which increased the land available for container storage. So at the moment, storage and berth are adequate for current demands.

In terms of equipment, the main issue is the fact that the Port at St. George's does not have a crane to offload cargo from vessels. At the moment, ships have to offload using their own equipment, and the GPA provides container-handling services from that point on. The current plan is to bring in a crane in 5 years. Other equipment is adequate, but as it is slightly old maintenance costs can be high and downtime somewhat lengthy. So the port could use further equipment and the GPA is considering replacements in the next year if there continue to be issues.

4.1.6 Transportation: Road

Maintenance and management of the roads infrastructure is the responsibility of the Ministry of Works, Physical Development and Public Utilities.[21] Within the Ministry, the Roads Unit is charged with the planning, implementation and supervision of road projects, although the actual construction works are contracted out. The Unit has a number of technical staff, including engineers, engineering assistants, road officers, surveyors and surveyor's assistants to assist in delivering against its functions, which include:

- Maintenance of the existing public road network to include debushing, cleaning of drains and culverts;
- Improvements of the existing public road network through regular maintenance; and
- Construction of new or rehabilitation of existing public roads.

To facilitate its work the Unit operates in two divisions, the Western and Eastern Roads Divisions. The Western Division ranges from St. Patrick to St. George and includes the entire west coast while the Eastern Division spans St. Andrew to St. George and all the areas on the east coast of the Island. The Western Division's main office is in Beausejour, St. George and the Eastern Division's main office is in Pearls, St. Andrew and each Division has sub offices in each Parish.

Unfortunately it was not possible to meet with the Roads Unit during the course of the fieldwork, so the data on the road network shown in the table below are somewhat dated. Without the perspective of the Unit, qualitative information on the roads infrastructure is also limited. However, the Chamber of Industry and Commerce did indicate that the reach of the roads network is quite good and did not regard roads as an issue from the private sector perspective. In terms of density of the network, the Chamber's view would seem to be supported even as far back as 2000, when density was a solid 3.28 km of road/km^2. This perspective perhaps did not take account of the agricultural view, considering that the Ministry of Agriculture pointed to the quality of access roads as a constraint to the industry.

Table 25: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	1,127 km	2000	CIA World Factbook
Density of road network	Length of road network/total land area	3.28 km of road/km^2	2000	CIA World Factbook
Density of paved roads	Paved roads as a% of total road network	61.0%	2000	CIA World Factbook
Condition of road network	% of road network in poor condition			

Without the perspective of the Roads Unit, it is difficult to determine what projects are planned or underway and therefore where investment is required.

[21] Information on the Ministry and the Roads Unit are taken from the Government of Grenada's website, www.gov.gd/ministries/works.html.

4.2 Land

Although institutions dealing with land use, both in terms of planning and development approval, exist in Grenada, data gathering does not appear to be done in a systematic fashion. The Physical Planning Unit of Grenada (PPUG) is responsible for setting land use policy direction and ensuring actual development is carried out in a manner consistent with the plans. Its objectives are:[22]

- To guide the future development of the State by establishing a National Physical Development Plan, Local Area Plans and schemes for National Development.
- To ensure the orderly and progressive development of land, in a manner that will protect the environment and conserve the nation's heritage.
- To implement the Grenada Building Code and Guidelines.
- To facilitate improved efficiency in the processing of applications for approval to develop land and monitoring of developments.
- To implement and maintain a Geographic Information System in order to enhance the output of the Physical Planning Unit.

To deliver on these objectives, the PPUG has a Forward Planning Section and its Development Control Section. In broad terms, the Forward Planning Section sets the policy direction and the Development Control Section processes land use applications and enforces compliance with approved development and regulations. During the fieldwork, a meeting was held with the Development Control Section (DCS). The DCS did report that Grenada has a National Physical Development Plan to guide land use and in that sense it is ahead of some of the other countries studied. Unfortunately a copy was not made available for review.

Although information on stocks of land, particularly undeveloped land, falls more squarely under the purview of the Forward Planning Section, the DCS has an important role to play in recording land use applications according to categories of use following approval and build. Unfortunately, the DCS does not currently maintain such records in a systematic fashion and acknowledges that it could benefit from software to assist it in doing so. The DCS indicated that applications are divided into the following categories:

- Residential: Constituting about 75% of applications received.
- Industrial: 2-3% of applications, mainly for manufacturing use, which is why the proportion is low.
- Commercial: 15-20% of applications, for offices, restaurants, bars, storage facilities and occasional residential (apartments and guesthouses). In this category, the majority of applications have been for occasional residential use.

As the proportionate figures for application types were quite rough, they do not sum to 100%. Although hard data were not available, the breakdown does show that even within commercial use, the majority of applications are geared around serving the rental or tourism markets, rather than towards non-residential business development. The other information that could be gathered is shown in the table below.

[22] Information on the PPU's objectives are taken from the Government of Grenada's website, www.gov.gd/ministries/works.html.

Table 26: Analytical Framework – Land

Measure	Units	Data	Year	Source
Stock of commercial sites	Total square metres			
Vacancy rates of commercial sites	% unoccupied			
Cost of renting commercial sites	US$ per square metre/month			
Stock of industrial sites	Total square metres			
Vacancy rates of industrial sites	% unoccupied			
Cost of renting industrial sites	US$ per square metre/month			
Stock of freezones sites	Total square metres			
Vacancy rates of freezone sites	% unoccupied			
Cost of renting freezone sites	US$ per square metre/month			
Length of beaches	Total kilometres			
Cost of purchasing beachfront land	US$/square metre			
Cost of leasing beachfront land	US$/square metre/year			
Accommodation stock	Total rooms	1,880	2009	Caribbean Tourism Organisation
Accommodation occupancy rates	%	71%	2009	Caribbean Tourism Organisation
Amount of arable land	% of total land area	35.29%	2005	CIA World Factbook

The DCS reports a few problems with the regulatory framework, noting that regulations do not provide them with effective mechanisms for enforcing compliance with approved building plans. When a structure deviates from plan, the DCS issues an enforcement notice and then a stop notice. Once these documents have been issued the owner is responsible for making the necessary changes. However, if they do not remedy the situation and simply carry on with construction, the PPUG has to take them to court. In practice, it rarely reaches that point and so levels of compliance with these notices are low. The DCS would like to see regulatory reform that addresses this situation. Additionally, it notes that structures for quality assurance within the construction industry, including in the area of labour, are required.

4.3 Labour

4.3.1.1 Labour Market Information

As in a number of other countries in the region, unemployment is a serious problem in Grenada, particularly for females and the youth. In 2008, the overall unemployment rate was 24.9%, eclipsed by female unemployment of 31.8% and youth unemployment of 36.3%. There are a host of well-documented social problems that result from unemployment on this scale, including poverty, crime and brain drain as a lack of suitable employment leads people to seek work abroad. Loss of talent is a particular concern to small island economies such as Grenada's that rely upon the service sector as the critical area of economic activity. And as services depend critically on the quality of the human resource for value addition, loss of trained personnel affects the country's ability to compete in the types of higher value added activities capable of driving growth and creating more and better jobs.

To respond effectively to these challenges and determine where initial areas of competitiveness might exist that can give rise to new areas of economic activity, it is important that accurate and nuanced labour market data exist. Unfortunately, as is the case in the other countries in the study, such data is not captured in traditional statistical measures. The Grenada Central Statistical Office (GCSO) does carry out a labour force survey, but the last one took place in 1998. They finished the fieldwork on a new survey in 2010 and the results are expected in early to mid-2011. In terms of surveys, the GCSO also carries out the census and 2 establishment surveys and this work quickly exhausts its limited capacity; it does not have any field staff. While the Office does want to expand its work, it is constrained by finances and limited personnel, both in terms of numbers and skills.

Despite these challenges, there could be some relatively inexpensive reforms that could lead to improved availability, depth and timeliness of labour market data. The GCSO pointed out that the National Insurance Scheme would be able to provide income levels by area of occupation, as well as the number of individuals in certain occupations. This would represent a level of disaggregation not seen in the GCSO data and could provide a useful means of estimating labour costs in certain industries, which is an important piece of information for prospective investors. Granted there are limits on that information, such as a ceiling amount on the income reported at EC$3,500/month, but the data would provide a good starting point. At the moment, the law does not provide a means for the GCSO to access this information, but if there is no legal bar to passing it along, then an operational channel for providing this data should be established. As the statistical office works with the data, it could also feed back requests for further information to the National Insurance Scheme, such as raising the ceiling on income reporting. This type of integrated flow of information would lead to better information on the labour market, which would be useful for public and private sector planning purposes.

All of this is not to say that the GCSO does not have any useful information. In fact it does capture some interesting data on sources of training and number of individuals with certain level of training. These data are discussed in the section on training below. In terms of the information sought by the analytical framework for this study, it was difficult to come by and much of the information in the table below is based on estimates from the sources indicated.

Table 27: Analytical Framework – Labour[23]

Area	Measure	Units	Data	Year	Source
General	% of skilled workers	% of total workforce	37%	2001	Census 2001
	% of unskilled workers	% of total workforce	63%	2001	Census 2001
	Size of workforce	Number of people	47,581	2008	GCSO
	Unemployment rate	% of total workforce	24.9%	2008	GCSO
	Minimum wage	US$/hour			
Tourism	Size of tourism workforce	Number of people	2,618 (restaurants and hotels only)	2010	GBT
	Cost of skilled workers	US$/day			
	% of skilled workers	% of total tourism workforce			
	Cost of unskilled workers	US$/day	$20.00/day	2010	GCIC
	% of unskilled workers	% of total tourism workforce			
ICT-enabled Services	Size of ICT-enabled services workforce	Number of people	332 (number of people employed in telecoms)	2010	NTRCG
	Cost of call centre operator	US$/month	$666.67/month	2010	GCIC
	Number of call centre operators in workforce	Number of people			
	Cost of programmer	US$/month	$1,000-$1,200/month	2010	GCIC
	Number of programmers in workforce	Number of people			
Agriculture	Size of agricultural workforce	Number of people	10,000	2010	GMOA
	Cost of skilled workers	US$/day	$22.22-$27.78/day	2010	GMOA
	% of skilled workers	% of total agricultural workforce	30%	2010	GMOA
	Cost of unskilled workers	US$/day	$11.11-$12.96/day	2010	GMOA
	% of unskilled workers	% of total agricultural workforce	70%	2010	GMOA

The data on skilled and unskilled labour in the General category is based on the percentage of those in the labour force who had received or not received training, respectively. Restaurants and hotels are an important source of employment for women, who accounted for 64% of those working in that area. With an estimated 10,000 people working in agriculture it remains a very important source of employment for the estimated 47,581 people in the labour force as of 2008, despite its decline in terms of proportion of GDP. It is also worth noting that the cost of unskilled labour in that industry is below the GCIC-estimated general cost of unskilled labour.

4.3.1.2 Training

Despite the limitations on data regarding the supply of labour, there is a good deal of information on the adequacy of training available in Grenada. The GCSO does have data on the number of people in the labour force with certain types of training.

[23] In this table, GCSO refers to the Grenada Central Statistical Office, GBT to the Grenada Board of Tourism, GCIC to the Grenada Chamber of Industry and Commerce and GMOA to the Grenada Ministry of Agriculture.

Table 28: People in the Labour Force with Vocational or Technical Training

Type of Training	Number of People	Percentage of Labour Force
Vocational	2,995	6.3%
Technical	5,103	10.7%
Both	1,804	3.8%
None	33,415	70.0%
Total Responses	43,317	90.7%
Not Stated	4,441	9.3%
Total Labour Force	47,758	100.0%

Source: GCSO – Survey of Living Conditions 2007/2008

What is most notable from this information is that only 20.7% of those in the labour force who responded to the survey have received some form of vocational or technical training, while 70% received none. While these figures are extremely low and point to a low level of training in the workforce, both generally and specifically in terms of technical and vocational training, it is important to consider the other types of training available before drawing such conclusions. The last available data, in the table below, are somewhat old, but they should assist in rounding out the training picture.

Table 29: Highest Level of Training for People in the Labour Force

Type of Training	Number of People	Percentage of Labour Force
None	26,410	63.07%
On the job	6,734	16.08%
Apprenticeship	574	1.37%
Private study	631	1.51%
Secondary school	82	0.20%
Vocational school	872	2.08%
Commercial/secretarial	362	0.86%
Business/computer	252	0.60%
Technical institute	870	2.08%
Other institution	2,331	5.57%
University	1,149	2.74%
Distance learning	75	0.18%
Virtual/internet	3	0.01%
Other	446	1.07%
Not stated	1,085	2.59%
Total	**41,876**	**100.0%**

Source: Census 2001

Taking out the 1,085 people that did not provide a response, 34.34% of those in the labour force received training of some kind. Of this group, 46.8% received on the job training, which was by far the largest single source of training, followed by other institutions at 16.2%. What is encouraging is that the proportion trained at a vocational school rose from 2.08% in the 2001 Census to 6.3% in the 2007/2008 survey. Technical institute training also rose from 2.08% to 10.7% in that period. So it would seem that uptake of these forms of training has been strong since the Census was conducted, particularly as these figures do not factor in the 3.8% who indicated they received both technical and vocational training.

However, part of the purpose of looking at the 2001 data was to determine whether levels of training were significantly different from the 70% indicating they did not have any kind of technical or vocational training in the Survey of Living Conditions. Although the Census had a lower proportion of people indicating they had no training, 63.07%, this figure is lower because a greater number of training methods were caught in 2001 than in 2007/2008. And while on the job training does provide a valuable set of skills, the fact that 46.8% of those that received training listed this as the highest level they had does suggest that levels of formal training are low. Outside of technical and vocational training, and at the post-secondary level, the primary form of formal training in most countries is university and college. Yet only 2.74% listed university as their highest form of training and 5.57% answered "other institution", which may refer to training through the T. A. Marryshow Community College (TAMCC). Even taking the other forms of training covered by the Census into account, it is clear that levels of formal training in the workforce are low.

This fact seems to have been acknowledged in Grenada and a number of initiatives are underway to improve the quality of education and training at many levels. The Ministry of Education's Strategic Plan for Educational Enhancement and Development seeks to address the orientation of education from the primary through the secondary level and sets out strategic objectives for the education sector through to 2015. The TAMCC, which produces around 500 graduates a year is the focal point for post-secondary education in Grenada and as a result, some of the initiatives have rightly attempted to capitalise on this position to deliver more effective training. The TAMCC was formed through a merger of the Grenada Teachers College, the Grenada Technical and Vocational Institute, the Institute for Further Education, the National Institute of Handicraft, the Mirabeau Agricultural Training School, the Domestic Arts Institute, the Continuing Education Programme and the School of Pharmacy, so it offers a wide range of training. The Ministry of Agriculture has been attempting to improve the skills in that industry by working with the TAMCC to develop training in areas such as pest control and drainage. The Ministry is trying to improve levels of professionalism and business skills through agribusiness management training programmes. As part of this push, it is also working towards greater organisation across the industry and is attempting to support the development of more associations and cooperatives. There is an agribusiness association and it is also looking at the issue of training for its members.

More conventionally, bachelor's degrees are available through the UWI open campus and at St. George's University, which also awards master's degrees. The Community College can award degrees up to the associates level. The Department of Human Resource Development (DHRD), which falls under the Ministry of Education, indicated that the Community College is trying to expand its facilities, but is constrained by a lack of funds. The DHRD became operational in the past two years and it is attempting to keep a perspective on life-long learning that will round out the Ministry of Education's focus on schooling up to the secondary level. The Department is still attempting to get systems in place to carry out research, planning, career development and counselling services, in addition to the scholarship programme, which is up and running. Importantly, the DHRD would like to get a sense of where things stand in labour market, match that against industry demands and then determine how to provide training and services to bridge the gaps. The fact that it would like to begin this process by carrying out a human resource audit speaks directly to the lack of information on the labour market and underlines the need for information to aid planning.

In the absence of such information, the Government has established a priority list of training/manpower needs. A review of the list again points to the planning difficulties that follow the lack of labour market information. The list contains 15 major areas, such as tourism, finance and health, along with a total of 56 sub-areas under them. Given the resource constraints pointed to by public and private sector stakeholders, it is unlikely that such a lengthy list of training areas for development can be effectively delivered against. What is required is a tailored approach that responds to a holistic view of existing labour market needs and focused areas earmarked for economic development.

From information of this kind will follow a focused approach to human resource development that stands a better chance of being effective. Therefore, it is important for all stakeholders connected to the labour force, including the Ministry of Education, the GCSO, the National Insurance Scheme, training institutions and the private sector (perhaps through the Chamber of Industry and Commerce) to come together and ensure that information flows more freely between them and is presented in a systematic way that can inform the country's development.

4.4 Capital

Stakeholders in a wide range of areas consistently identified access to finance as a constraint to development, both in terms of private sector business and public services. As in other Caribbean countries, this is due to high commercial lending rates, as shown in the table below, and limited availability of non-traditional lending instruments, such as venture capital and microfinance products. The Chamber of Industry and Commerce reported that some businesses face a challenge in meeting collateral requirements for loans and that this, along with a lack of venture capital financing constrains entrepreneurship. The fieldwork in this area was fruitful and yielded a number of varied perspectives on the availability of capital. These are discussed in turn below.

Table 30: Analytical Framework – Capital

Measure	Units	Data	Year	Source
Private credit/GDP	%	97.7%	2009	World Bank
Central bank lending rate	%	n/a		Eastern Caribbean Central Bank
Central bank savings rate	%	3%	2010	Eastern Caribbean Central Bank
National bank commercial lending rates	%	8-14%	2010	Grenada Development Bank
Development bank commercial lending rates	%	10-12%	2010	Grenada Development Bank

4.4.1 The Commercial Bank Perspective

The Grenada Banker's Association (GBA) outlined the general approach to lending taken by commercial banks. Lending portfolios are typically composed of retail, mortgage and demand loans. Although the composition of portfolios varies from bank to bank, demand and mortgage loans tend to account for a larger share of total lending than retail loans. Retail refers to consumer lending, is extended to cover the purchase of items such as cars and home furnishings and is securitised against the items being purchased. Lending rates vary from 9.5-15%, depending on the purpose of the loan, what is offered as security and of course the circumstances of the borrower. Mortgages cover residential and business properties and the rates of 7-9% depend upon loan to value ratios and the level of security.

Demand loans are for business purposes and the rates available depend upon the size of the bank. National banks tend to lend at 8-14% and regional banks anywhere from 8.5-12.5%. The rate offered depends mainly upon the quality of security put up and, to a lesser extent, on the viability of the business and the purpose of the loan. Unsurprisingly, small businesses tend to come in at the high end of the range due to challenges in meeting security requirements and difficulties in putting business plans together.

At the moment, liquidity within the commercial banking sector is good, due mainly to a slow down in lending pursuant to the economic downturn. The GBA indicated that there are not many attractive lending projects available in the current climate. Interestingly, over the period of the slowdown, one bank reported that the only growth in terms of lending applications was in small business lending. The problem with these applications is that owners tend to come in

without documentation due to poor record keeping or adequate business plans, which makes it difficult to approve applications. Despite the high rates they face, the GBA reported that most small businesses come to commercial banks for loans. It also pointed out that many small businesses are not aware of the financial and technical assistance available to them. All of this raises the issue of what support services and specific lending is available to small businesses, something which is partially in the remit of the Grenada Development Bank.

4.4.2 The Grenada Development Bank

The Grenada Development Bank (GDB) is a government-owned entity that is run by an independent board, pursuant to the guidelines set out in the act that created the entity. The GDB purpose, as stated in its 2009 Annual Report, is to assist in the country's economic development by providing financial and technical assistance in the areas of agriculture, fisheries, tourism, industry, housing, small business development and human resource development. Lending rates vary from 5-12%, depending on the broader purpose of the loan.

Assistance for human resource development takes the form of student loans. This is by far the largest component of the loan portfolio, accounting for 41% of lending in 2009, significantly outstripping the 18% each taken up by loans for industry and tourism purposes and the 11% for housing. The GDB indicated that it is attempting to move from education lending to more business-oriented lending, but this is a challenge as the portfolio is reflective of demand for loans. Rates typically vary from 5-7%, with the lower rate offered to vulnerable persons. Once they have finished their education and started work, the interest rises to 7%.

Mortgages, or housing as it is referred to in the Annual Report, are offered at around 7.75%. Unsurprisingly, this area had the lowest proportion of non-performing loans in 2009, at 10.9%. Business-oriented lending rates range from 10-12% dependent upon the degree of risk. Certain areas have an extremely poor record in terms of repayment, with 100% of loans for fishing and agro processing non-performing in 2009. Agriculture and the micro sector were also poor, with a non-performing incidence of 56.2% and 46.6%, respectively. From the GDB's perspective, it is fortunate that none of these areas account for a large share of the loan portfolio. Agriculture at 5.6% is the largest, followed by agro processing at 1.4%, fishing at 1.1% and then the micro sector at 0.8%. However, from a developmental perspective, the track record in fishing, agro processing and agriculture is worrying, given that agribusiness is one of Grenada' priority investment areas. The micro sector is also important to economic development as the vast majority of domestic businesses fall into this category. This inability to make loan payments, even at rates slightly discounted from commercial lending rates raises questions about the competitiveness of these industries and perhaps indicates a need for support measures to improve viability.

The size of the loan portfolio was US$11.45 million at the end of 2009. Following a sharp increase of 32% in size in 2007, it contracted by 4% in 2008 and 7% in 2009, largely due to a lack of new lines of credit to on lend. Demand for loans significantly outstrips supply and the GDB indicated that it could scale up its lending if resources were available. In the past, it has been able to access funds at rates from 2-6%, but it was unsuccessful in securing new lines of credit from the Caribbean Development Bank and the European Investment Bank in 2009. This undermined its ability to increase the size of the loan portfolio. Part of the challenge in accessing funds arises from the fact that some international financial institutions require

government guarantees on their loans and may impose macro economic conditions as part of such lending, which restricts fiscal autonomy.

Much of the current demand for lending is coming from the small business sector, which has not been a large area of business for the Bank. In the past, the GDB lent funds to the National Development Foundation for micro lending, and credit unions and Microfin are also active in this area. Even with these entities, it would seem there is room for additional lending; Microfin's total portfolio is around US$1.1 million.

The GDB turned a profit from 2004 through to 2009, with the exception of 2007. Bad debt recovery has been an important component of this trend, and it accounted for 21% of total revenue in 2009. Portfolio growth remains an important part of the strategy for sustainability and in addition to securing new sources of credit the Bank would like to take deposits and provide consumer loans, which is not allowed under the current legal framework. Whether or not this will take place is a longer-term policy consideration that will remain a government decision.

5 Findings: St. Vincent and the Grenadines

5.1 Infrastructure

The results of the fieldwork under each category of infrastructure are presented and analysed individually in the sections below.

5.1.1 Power

The state-owned company, St. Vincent Electricity Services Limited (VINLEC), is the sole provider of electricity in the country. It operates power plants on St. Vincent, Bequia, Canouan, Union Island and Mayreau. Its operations are concentrated on St. Vincent where it runs 2 diesel and 3 hydro power plants, and the company has a single diesel plant on each of the other 4 islands. Key information on the electricity infrastructure is shown in the table below.

Table 31: Analytical Framework – Power

Measure	Units	Data	Year	Source
Installed capacity	MW	47 MW	2010	VINLEC
Delivered capacity or firm capacity	MW	37 MW	2010	VINLEC
Peak demand	MW	22 MW	2010	VINLEC
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	US$379.48/MWh	2010	CARILEC Tariff Survey June 2010
Electric power consumption	MWh per capita	1.14 MWh per capita	2010	VINLEC
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)			
Average number of brownouts	Number per month	n/a	2010	VINLEC
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)			
Time to obtain electrical connection	Days	1 day If line extension required, one month maximum	2010	VINLEC

Although the stated installed capacity is 47 MW, this figure is based on the design specifications of the plants. Since some of them are about 20 years old, they no longer produce according to specifications. 5 MW of the installed capacity also comes from hydropower and production to that level is dependent upon water flow volumes, which vary with the seasons; at times, hydro can account for 30% of monthly generation. The result of these two factors is that firm capacity, or the amount of energy that can be available for production at any given time, is 37 MW, less

than the country's total installed capacity. Countries such as Grenada, which depend entirely upon diesel power, can have firm capacities equivalent to their installed capacities. In the case of St. Vincent and the Grenadines, this is not an issue as peak demand is just 22 MW, well within the firm capacity range.

VINLEC indicated that brownouts are not an issue as it does not have large consumers that can draw a significant amount of power to the extent that other consumers experience a drop in voltage. It did not provide data on the number of blackouts and their duration, but since supply capacity exceeds peak demand levels, there would not seem to be a need to rotate power supply. Therefore the blackouts that do occur would be due to faults in or damage to the electricity network.

In terms of cost, the country offers reasonably competitive prices. Of the 7 countries in the study, Belize provides the most inexpensive electricity, but because it has well developed sources of hydroelectricity, it stands somewhat apart from the eastern Caribbean islands. Among this group, St. Kitts and Nevis is the cheapest and charges US$279.48/MWh (although its rates are set to change), while Dominica at US$461.50/MWh is the most expensive. At US$379.48/MWh, St. Vincent and the Grenadines falls in the midst of this range, though slightly above the US$370.49/MWh average of the two extremes. The tariff has been unchanged since 1989 and changes have to be approved by Cabinet. A 1998 application for an increase was denied and VINLEC commissioned a study in 2008 which demonstrated the need for the rate to be put up, however it did not make an application at that time. Cabinet regulation perhaps leaves the company more vulnerable to political forces than it might be if an independent regulator was in place, although there is evidence that such structures in other Caribbean countries do not always operate independently of government influence.

At first blush, the cost of electricity would not seem to be a constraint to business but feedback from the public sector suggests that there may be some internal pricing issues. Anecdotal evidence suggests that there is a demand charge in place, which requires payment of a fee for what a consumer uses at peak levels, not just payment for energy actually used. This disadvantages commercial customers and effectively provides a means for the company to subsidise domestic customers at the expense of businesses. The extent to which political factors play into this situation is unknown but this is a potential concern from the business environment standpoint.

VINLEC indicated that the current installed capacity is sufficient to meet growth in demand over the medium term, but it does have a development plan to ensure investment in infrastructure keeps pace with growth over a 10-year horizon. Typically, the company attempts to take note of land zoning and where commercial development is taking place and then ensures it is positioned or will be positioned to supply power when required.

At the moment, investment in infrastructure is focused on updating of facilities, rather than expansion of the existing plant, given the sufficiency of supply. VINLEC is commissioning 2 new diesel plants and will decommission some of the older ones as these come on stream. There are also plans for major refurbishment of 2 of the hydro plants, including the installation of new turbines, which will increase their reliability. Longer term, the feasibility of running a submarine cable to Bequia is being examined, which could help reduce the need for freestanding power plants on the island.

At times, the country meets up to 30% of its monthly energy needs through hydropower, which provides a useful cushion against high fuel prices. Renewable sources of energy like hydropower are also important because they place less stress on the environment than fossil fuels. This is a significant consideration for St. Vincent and the Grenadines, and many other Caribbean countries, as the tourism industry depends upon the quality of the natural environment. Therefore, it is encouraging that plans to develop other renewable sources of energy are underway. VINLEC has carried out studies for a wind power for a few years and is looking for investment to develop a 3-5 MW wind farm. While development agencies have indicated some interest in financing such a project, VINLEC expressed a preference for a private investor to take on the project, either independently or in collaboration with the company, as the feeling is that this would result in greater knowledge transfer and local involvement. How such a private enterprise would operate in the face of VINLEC's monopoly, in particular in terms of selling production and connecting to the transmission grid, are issues that will need to be addressed in the future.

Accessing finance for developing the infrastructure has not been a problem for VINLEC. Most of their financing has come from development finance institutions, and much of the loan portfolio lies with the Caribbean Development Bank and the European Investment Bank. These loans typically carry interest rates from 5-6%, but the company reported that it would likely be able to access commercial loans at around 7.5% interest.

Outside of regulatory impact on tariff setting, VINLEC reports that it is able to carry out its operations and development free from interference and in a stable business environment. The main constraint it faces is a lack of required high-level technical skills in the workforce. It does undertake staff training and sends technicians to Jamaica and Trinidad & Tobago for technical training. At the trade level, it does hire people from the technical college and finds that they are trainable for positions such as electricians, linesmen and mechanics. The size of the country and the variety and depth of educational programmes available mean that this will continue to be a challenge, but it is encouraging that VINLEC finds the workforce to be trainable.

5.1.2 Water & Sanitation

As with electricity, piped water and sewerage services in St. Vincent and the Grenadines operate under a monopoly, with the Central Water and Sewerage Authority (CWSA) being the sole provider. CWSA is a statutory body under the Ministry of Health and the Environment, with a Board of Directors that reports to Cabinet. Indicators relating to the cost and quality of services are shown in the table below.

Table 32: Analytical Framework – Water & Sanitation

<table>
<tr><th>Indicator</th><th>Units</th><th colspan="3">Data</th><th>Year</th><th>Source</th></tr>
<tr><td rowspan="6">Cost of water supply</td><td rowspan="6">US$/1000 US gallons</td><td>Consumption Bands (US gallons/month)</td><td>Rate per Gallon (US$/US gallon)</td><td>Fixed Monthly Charges (US$)</td><td rowspan="6">2010</td><td rowspan="6">CWSA</td></tr>
<tr><td>0 – 3,002</td><td>$0.00204</td><td rowspan="3">Domestic
Basic: $4.44
Environmental: $2.96</td></tr>
<tr><td>3,003 – 6,005</td><td>$0.00241</td></tr>
<tr><td>6,006 – 12,009</td><td>$0.00407</td></tr>
<tr><td>12,010 – 18,014</td><td>$0.00556</td><td rowspan="2">Commercial
Basic: $5.56
Environmental: $7.41 - $25.93</td></tr>
<tr><td>>18,014</td><td>$0.00741</td></tr>
<tr><td>Average number of incidents of water shortages</td><td>Number/month</td><td colspan="3"></td><td></td><td></td></tr>
<tr><td>Average duration of water shortages</td><td>Hours</td><td colspan="3">3-4 hours</td><td>2010</td><td>CWSA</td></tr>
<tr><td>Time to obtain water connection</td><td>Days</td><td colspan="3">7-14 days</td><td>2010</td><td>CWSA</td></tr>
<tr><td rowspan="2">Cost of wastewater supply</td><td rowspan="2">US$</td><td colspan="3">Domestic
Kingstown: $5.56/month, Arnos Vale: $7.41/month</td><td rowspan="2">2010</td><td rowspan="2">CWSA</td></tr>
<tr><td colspan="3">Commercial
Small enterprise (<10 employees): $37.04/month
Medium enterprise (11-20 employees): $92.59/month
Large enterprise (>20 employees): $142.59/month</td></tr>
<tr><td>Quality of waste treatment system</td><td>Rating from 1 – 5[24]</td><td colspan="3">Kingstown: 2
Rest of country: 1[25]</td><td>2010</td><td>CWSA</td></tr>
</table>

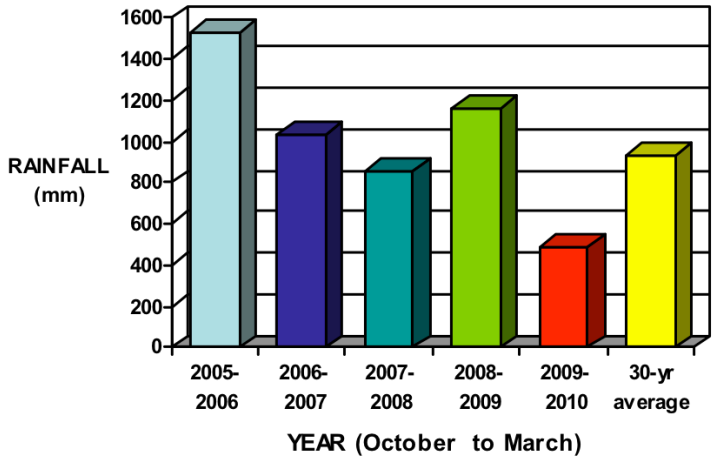
[24] The criteria for the ratings are as follows:

- 5: Public waste treatment facilities provide 1st, 2nd and 3rd stage biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable.
- 4: Facilities provide 1st, 2nd and 3rd stage biological and chemical wastewater treatment, but tap water is not potable.
- 3: Facilities provide 1st and 2nd stage treatment. Wastewater smells.
- 2: Facilities provide 1st stage treatment. Wastewater is harmful to the environment.
- 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.

[25] Arnos Vale is assumed to have a rating of 2 in the quality of its waste treatment system.

Water supply on the island of St. Vincent is generally not a problem, with CWSA citing a 97% household coverage rate for pipe-bound water. Water supplies are dependent on precipitation and while rainfall is usually adequate for the country's needs, there can be some issues during the dry season or prolonged droughts. From October 2009 through March 2010, there was a sustained dry spell during which rainfall was roughly half of the 30-year average for that period, as shown in Figure 2. This situation led to significantly lower stream flows on many of mainland St. Vincent's major rivers, in turn affecting production of treated water at some of the major water sources.[26]

Figure 2: St. Vincent and the Grenadines Average Rainfall, October to March



In response, CWSA made efforts to address supply imbalances. Some of these measures were aimed at water conservation, largely through raising public awareness of the issue, but some resulted in infrastructural improvements. In addition to inspection of public buildings to identify and repair leaks, interconnectivity of systems was improved to facilitate transfer of spare capacity to badly hit areas. As a result, all of the systems are now connected, which, along with efforts to increase storage capacity, should help alleviate problems during future droughts. The quality of the natural environment means that the quality of water is high.

On the Grenadines, water is supplied through tanks that collect rainwater. During times of low precipitation, water can be sent to the islands from St. Vincent via a barge using a recently acquired water tanker. So water supply is generally not an issue and the country's ability to store and shift excess capacity during dry spells has improved. CWSA assesses the need for additional investment in infrastructure on a continuous basis and has an ongoing programme of upgrades and maintenance. It reports that the infrastructure is more than adequate for current demand and since large-scale investment is not required, the works programme is focused on routine maintenance. When larger investments are required, they are typically financed through soft loans.

[26] This information and Figure 2 have been taken from Review of Strategies by the CWSA – A Response to the dry season 2009-2010, published on the CWSA website.
http://www.cwsasvg.com/newspublication/CWSA's%20Dry%20Season%202009-2010.pdf

Sewerage services are less advanced. CWSA operates two sewerage systems that serve the Kingstown central business district and the Arnos Vale housing scheme, but the rest of the country utilises septic tanks. CWSA does not provide removal services for septic waste, so the information on costs in the table above relates to domestic and commercial customers using the two central sewerage systems.

The Kingstown system involves 1st stage treatment of waste, or solid particle removal, before waste is pumped out to sea at a prescribed depth and distance. As a result, the quality of the Kingstown waste treatment system is a 2 on the 5-point scale used in the study. During the meeting with CWSA, information on the Arnos Vale system was not provided, so it has not been assigned a rating, but it would seem likely it operates on the same basis as Kingstown. Given the importance of the marine environment to the country's tourism industry, the long-term environmental impacts of disposing of waste at sea should be examined, if it has not been already.

Outside of these systems, CWSA's sewerage services are limited to the provision of a central disposal site for septic waste. There is a series of 3 ponds near the Diamond landfill that facilitates natural decomposition of waste from septic tanks, which is collected and dumped by private companies. Waste from the Grenadines is also collected from septic tanks and disposed of here. The lagoon system, which was constructed a few years ago, is well within capacity and CWSA does not see a need for further infrastructure investment in the facility in the near future. As of year end, CWSA was piloting the disposal system and had not begun to levy a dumping charge on the trucking companies, although it does plan to at some point. As with other rate changes, it will require Cabinet approval. Prior to the construction of the lagoon, CWSA was not certain of what trucking companies were doing with the waste, but the feeling was that it was being dumped in holes in the ground. Given that a dumping charge will cut into the bottom line of these companies, there is a possibility that some of them could consider going back to pre-lagoon disposal methods. CWSA did not regard this as a risk and felt that the public would act as a watchdog in this regard. Irrespective of how this is policed, it may be necessary to impose a fine for dumping outside of the lagoon pursuant to the regulations of the revised CWSA Act of 1991 to deter such activity. Considering that this seems to have been a major method of waste disposal as late as 2008, it would not appear that doing so is illegal at the moment.

As with the other method of waste disposal, there would seem to be some potential impacts on the environment of using this system. While CWSA was certain to have considered these impacts prior to construction of the facility, this is a situation that may require ongoing monitoring as the system is used over time. Depending on the long-term impacts of the two means of waste disposal used at the moment, there could be a need for investment in sewerage services to help protect the country's environment.

5.1.3 Telecommunications

The country's telecommunication industry has 3 main service providers, Karib Cable, Cable & Wireless operating as LIME and Digicel, all of which are regulated by the National Telecommunications Regulatory Commission of St. Vincent and the Grenadines (NTRCSVG). Karib Cable offers fixed line voice, broadband internet and digital television services. LIME offers fixed line voice, mobile voice and broadband internet services. Digicel only provides mobile voice services, but some of the service packages do include mobile internet access, something LIME also offers. The table below provides data on the state of the telecommunications industry, including reach of services, quality and costs.

Table 33: Analytical Framework – Telecommunications

Indicator	Units	Data		Year	Source
Broadband cost	US$/month (download speed: 1 Mb/second)	LIME	Karib Cable[27]	2010	LIME, Karib Cable websites
		$33.65	$30.59		
	US$/month (download speed: 2 Mb/second)	$63.46	$61.57	2010	LIME, Karib Cable websites
	US$/month (download speed: 3 Mb/second)	$106.06	$104.16	2010	LIME, Karib Cable websites
	US$/month (download speed: 4 Mb/second)	n/a	$193.22	2010	Karib Cable website
Size of external fibre optic connection	Terabits/second				
Internet subscribers	Number/1,000 people	104.0		2009	TIT[28]
Landline cost	US$/month	LIME: $8.69 Karib Cable: Landline rental included as part of calling package, not given separately		2010	LIME, Karib Cable websites
Landline cost of local call	US$/3 minutes	LIME: $0.06 - $0.09 Karib Cable: $0.04 - $0.07		2010	LIME, Karib Cable websites
Landline cost of call to mainland US landline	US$/3 minutes	LIME: $1.27 - $2.11 Karib Cable: $1.01			
Landline penetration	Mainlines/1,000 people	210.8		2009	TIT

[27] Karib Cable provides packages with download speeds of 1.1, 2.2, 3.3 and 4.4 Mb/second. LIME provides packages with download speeds of 1, 2 and 3 Mb/second. In order to level out this difference, the Karib Cable prices have been adjusted proportionately downward to match the LIME download speeds. The 4.4 Mb/second price has been adjusted to 4 Mb/second for the sake of consistency, even though LIME does not provide a price in this category.

[28] TIT refers to Trends in Telecommunications, a ten-year review of the Telecommunications Industry in St Vincent and the Grenadines (1999-2009).

Indicator	Units	Data		Year	Source
Mobile phone cost	US$/month	LIME: $57.41 1,500 minutes (on-net) 1,500 SMS (on-net) 1Gb (on-net data)	Digicel: $127.34 1,000 minutes (unlimited evenings and weekends, on-net)	2010	LIME, Digicel websites
Mobile phone penetration	Mobiles/1,000 people	1,109.0		2009	TIT

Development of the industry has followed the pattern seen in a number of other Caribbean countries, with increased competition following liberalisation, leading to lower cost, improved technology and dramatically improved penetration rates of a range of services. Despite these gains, the cost and quality of certain services, broadband internet, in particular, lags behind what is available in countries such as the US. While the industry is open to competition, and the NTRCSVG has indicated that it would like to see greater competition, new entrants to the market would face a number of challenges.

One of these stems from the fact that the market is already very well served in certain segments such as mobile telephony, as indicated by high penetration rates in excess of 100%. The use of VoIP services, which are not blocked locally as they are in some countries, has significantly eroded revenue from international fixed line services, which fell by over 50% from 2002 to 2008.[29] The prevalence of mobiles will place pressure on the domestic side of the fixed line calling market and the combination of these factors means that fixed line services are of diminishing importance. The fact that the number of fixed line customers declined from an 11-year high of 26,438 in 2002, the year before Digicel entered the market, to 23,019 in 2009 lends support to this assertion.

Internet penetration rates, at 10.4%, are much lower than either type of phone service. However, an NTRCSVG survey showed that 36.4% of households had internet access, so the market is better served than the initial figure would suggest. While there would seem to be room for other suppliers to serve this segment of the market, the fact that Karib Cable and LIME own the infrastructure through which internet services are delivered means that new competitors would either have to invest large sums to develop their own infrastructure or purchase bandwidth from one of the two established suppliers. Given that both of these entities are also providing internet services, the terms of any such agreement are unlikely to allow a new entrant to offer a more competitively priced service and cut into LIME's or Karib Cable's customer base. Pricing of a range of services is subject to the ECTEL Price Cap Plan, which must be adopted by local regulators and so the NTRCSVG does exert some degree of regulation over the price of services. Regulation to address the high price of wholesale bandwidth is under government review, so it remains unclear if these prices will come down to an extent that will encourage further market entry.

What this means is that further service improvements are unlikely to be driven by greater competition at the moment. The NTRCSVG identified the cost of service as a greater concern than infrastructural improvements. This is corroborated by a survey of 54 businesses that cited

[29] Trends in Telecommunications, a ten-year review of the Telecommunications Industry in St Vincent and the Grenadines (1999-2009), citing NTRCSVG data.

further reductions in the cost of services as the most pressing issue for the government to address in the telecommunications sphere.[30]

The ECTEL initiatives mean that the legal and regulatory framework governing this industry is under review and outdated instruments are in the process of being updated. The major constraint identified by the NTRCSVG is that the duopoly that exists for some services does not afford enough competition. The regulator acknowledges that there may be a need to expand the licensing regime to allow for a greater range of business models, but interest from new entrants has been tepid. While it can create structures to allow such investment to take place, it cannot force such investment to take place. Without it, improvements to service quality and cost, particularly of broadband, are likely to continue to be primarily driven by technological improvements.

Telecommunications also are increasingly important from a social development perspective as they increase access to information and help with the development of human capital, both in general terms and in terms of computer literacy. Importantly, the regulator collects fees from service providers that go towards a Universal Service Fund, which is designed to help with the provision of efficient and affordable telecommunications services to the public, particularly in underserved communities. A project to introduce/improve the broadband connections at community and learning centres was implemented in 2009 and was the first project to be implemented under the Fund in the ECTEL countries.[31] Efforts of this kind are important as they will help to increase access in areas where private providers may not have an incentive to go, or for individuals and groups for whom the services may be too expensive.

[30] Trends in Telecommunications, a ten-year review of the Telecommunications Industry in St Vincent and the Grenadines (1999-2009).

[31] Trends in Telecommunications, a ten-year review of the Telecommunications Industry in St Vincent and the Grenadines (1999-2009).

5.1.4 Transportation: Air

5.1.4.1 Overview

The air transportation infrastructure in St. Vincent and the Grenadines is in the midst of a significant change as a new international airport is under construction. A major reason for the construction of the Argyle International Airport, which is expected to commence operations in 2013, is the fact that there are environmental limitations on the E. T. Joshua Airport, which restrict the type of aircraft that can land there. The length of the runway limits the facility to serving medium aircraft in lower categories and it cannot be extended on the mainland end because there is no room. On the seaside end, land reclamation is not possible as there is a shelf there. The situation is further complicated by the fact that aircraft should be taking off into the wind, but the hills around the runway force planes to take off over the ocean. This puts the wind behind them and reduces lift, which means aircraft must limit their loads. Despite these limitations, E. T. Joshua is able to cope with existing passenger numbers and it is the physical constraints it faces that are behind the push for the new international airport, rather than a case of demand leading to the development. The expectation is that the new airport will lead to steady growth in air traffic, both in terms of number of flights and the size of vessels, rather than a sudden ballooning in business. How this expectation will play out remains to be seen but certainly the investment will dramatically improve the country's air transportation infrastructure. Details of the scope of the new airport are set out following an analysis of the existing facilities.

5.1.4.2 The Existing Infrastructure

The government owns 4 airports and the 5th, which is on Mustique, is in private hands. The data in the table below covers the size of all 5 of the airports, but the qualitative discussion in this section is limited to the public facilities as the field research did not involve a visit to Mustique.

Table 34: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	5	2010	Airports Department (AD)
Number of direct flights to US/Europe	Number of flights/week	0	2010	AD
Airports with paved runways	Number	5	2010	AD
Number of paved runways by size	Under 914 metres	2	2010	AD
	914 - 1,523 metres	2	2010	AD
	1,524 - 2,437 metres	1	2010	AD
	2,438 - 3,047 metres	0	2010	AD
	Over 3,047 metres	0	2010	AD
Passenger load capacity	Load factor	Not provided	2010	AD
Freight load capacity	Load factor			
Export handling charges	US$/kg for warehouse pickup to port clearance	Door to door service only provided on small packages. Price not given.	2010	BMC Agencies

Indicator	Units	Data	Year	Source
Time to export	Days from packing at warehouse to departure from port	1 day	2010	BMC Agencies
Export shipping costs	US$/kg from main port to Miami	US$0.73/kg	2010	BMC Agencies
Import handling charges	US$/kg for port clearance to delivery at warehouse	Door to door service only provided on small packages. Price not given.	2010	BMC Agencies
Time to import	Days from arrival at port to delivery at warehouse	1-2 days	2010	BMC Agencies
Import shipping costs	US$/kg from Miami to main port	$1.43- $2.43/kg	2010	BMC Agencies

In addition to E. T. Joshua on mainland St. Vincent, there are public airport on Canouan, Union Island and Bequia. The Airports Department (AD), a department under the Ministry of National Security, Air and Sea Port Development, manages these airports and is also responsible for civil aviation matters.

As outlined above, the physical circumstances of E. T. Joshua prevent it from handling anything beyond medium craft in lower categories. Some charter planes of these types carry up to 70 passengers, but Liat, the main carrier servicing the island, operates planes with a capacity of 50. Given that the airport terminal can accommodate 200 passengers per hour, only 2 Liat flights could arrive for unloading and loading per hour. Cargo handling facilities are limited to one room and there is no dedicated customs facility for freight. So even leaving aside the environmental factors that limit the airport's capacity and ability to expand the runway, the other built infrastructure would limit the arrival of larger vessels, were there demand for such flights. Once Argyle is operational, the E. T. Joshua site will be redeveloped into a mixed use residential and commercial area. In anticipation of this change, some retail businesses have already begun to set up nearby.

The country had 75,446 stayover visitors in 2010. Even assuming an average passenger capacity of 30% or 15 people per flight (based on Liat's carrying capacity of 50), this works out to fewer than 14 flights per day over the year on average. Given that aircraft are busier during the high season, it does not appear as though the infrastructure is overtaxed in terms of meeting current levels of demand. The AD is investing US$1.48 million to resurface the E.T. Joshua runway, but given the pending move to Argyle and the ability to cope with existing passenger levels, further investment would seem unlikely.

Of the other airports, Union Island is the busiest but it was Canouan Island that underwent a US$21.5 million expansion and refurbishment in 2008, which means that some flights can now go directly to the island. Resort developers are now taking on a project to double the size of the aircraft parking area to allow them to cater to tourists at the higher end of the market. The plan is for a public private partnership to take over management of the airport.

The AD indicated that the other airports are just capable of meeting demand, but investment in maintenance is required. The primary investment now being contemplated is in maintenance and refitting of the electrical systems. Financing for such projects is typically not an issue as the Department is not a statutory body and receives funds directly from the Ministry of Finance as

per the budget it prepares for approval. Accordingly, the revenues collected from landing fees, passenger service charges, nav charges, etc. are paid into the consolidated fund.

The main infrastructure constraints will be addressed with the opening of the new airport, but the AD did report that it suffers from capacity constraints in its civil aviation department. As regulations change, both on the operational side and the security side, there is a need to develop documentation to ensure compliance with the new requirements. The AD does not have the personnel to do this in-house, nor the funds to contract individuals to do this on their behalf. As a result, it has sought support from other organisations to maintain compliance, but this areas remains a challenge. At the moment it is addressing security regulations with OECS support and is due to commence a CARICOM-funded project on certification. Outside of security issues, which are being addressed, it reports that the Civil Aviation Act 2005 is adequate.

5.1.4.3 The New International Airport

The opening of the Argyle International Airport will represent a sea change in St. Vincent's air transportation infrastructure. The 2,700+ metre runway will be able to handle Boeing 747 aircraft, opening up the country to direct flights from its key tourism markets of the US and the UK. The airport will be significantly larger than E. T. Joshua, covering 275 acres to the old airport's 62 and the terminal building will be capable of handling 800 passengers per hour. This will allow certain 747 configurations to unload and reload at full capacity within an hour. There will be 3 aprons, one for commercial vessels, a jet apron for jets and smaller planes to serve the Grenadines and a cargo apron capable of accommodation two 727s, the cargo craft that Amerijet flies locally. There will also be a dedicated cargo building and a 400-acre plot for a hotel development has been set aside on the leeward side of the airport. Overall, the facility will be a significant upgrade in the current air transportation capacity and will be more than large enough to cope with current passenger and freight volumes.

A wholly-owned government company, the International Airport Development Company (IADC), was set up to manage construction of the airport and begin training people to manage operations once the facility is complete. The eventual plan is for a public-private partnership to manage the IADC-owned infrastructure and both the AD and the IADC will be allocating staff for management purposes.

The IADC reported that it had difficulty arranging financing for the construction during the initial periods of the project, but this is now less of an issue. The Taiwanese have provided grant funding and a soft loan, and Cuba, Venezuela and the CARICOM Development Fund have also provided support to supplement the national government's commitments, some of which it financed through land sales. There have been some problems with the physical building works, which was caused two delays to the completion date, mainly with construction of the terminal building. The IADC also has a master plan which allows for future expansion of the infrastructure as and when it becomes necessary. Completion is now anticipated in December of 2012 and following one quarter to begin operations, commercial flights are expected to commence in the second quarter of 2013. Although carriers cannot begin flying routes until the airport is operational, discussions with carriers regarding operating direct flights from outside the region have begun.

Both the AD and the IADC acknowledge that Argyle International Airport will not be profitable for some time and a feasibility study that was carried out indicated it will not be even after 5 years of operation. There has been resistance to its construction in some quarters, likely due to concerns about its financial viability. In addressing the viability of this as a business, the IADC pointed out that the airport will create a number of indirect economic benefits, such as greater tax revenues from businesses benefitting from higher visitor numbers. So whereas a private enterprise would be limited to the revenue created by the airport business itself, the government will be able to capture these indirect revenue streams, which makes the proposition more viable.

The feeling seems to be that improving direct air access by constructing the Argyle International Airport will lead to a gradual increase in air traffic that E. T. Joshua could not have offered since it was limited in the size of aircraft it could service. Certainly Argyle will allow St. Vincent to access the market for longer haul direct flights from countries outside the region. The extent to which it will be able to gain a share of this market is what will determine the success of the venture. Certainly though it creates an opportunity for a transformative affect on the country's tourism industry. Considering that will be the primary and initial benefit, the AD rightly pointed out that there will need to be investment in a greater amount and range of accommodation to cater to what will hopefully be larger and broader visitor numbers.

5.1.4.4 Air Freight

BMC Agencies acts as an agent for Amerijet in St. Vincent and handles much of the country's air freight. A large amount of this business involves the import and export of perishable items, and BMC indicated that it brings in about 70% of the perishable goods coming into St. Vincent. As shipping by sea takes a matter of weeks, time sensitive deliveries also use air freight services.

As the country is heavily dependent on imports, the types of goods brought into the country by air tend to be similarly varied. On the export side, the principal goods include agricultural produce such as fish, golden apples, plums, breadfruit and mangos. The majority of the Amerijet fleet is made up of Boeing 727s, and it faces challenges in utilising the E. T. Joshua airport just as commercial flights do. The capacity of the 727s is 60,000 pounds, but due to the length of the runway, aircraft are limited to carrying 30,000 pounds, which means that goods have to wait for another flight at times. The opening of the new airport will address many of these problems and as a result, the operational cost of air freight will drop. Whether this will be reflected in the price of services to the consumer is uncertain, particularly since the market has one dominant supplier. At the moment, carrying excess baggage is a large source of business as there are differing baggage allowances between international carriers and Liat. If direct flights come to St. Vincent, this could reduce that side of the business. Nevertheless, BMC Agencies was sanguine that the opening of Argyle International would not only result in reduced cost, but increased business.

5.1.5 Transportation: Sea

5.1.5.1 Context of the Analysis

During the field research, the St. Vincent and the Grenadines Port Authority (SVGPA) indicated that a port rationalisation study that would aim to determine the country's port facility requirements through to 2030 was then ongoing. The study, which will address both cargo and cruise needs, was at the interim report stage, but the findings were not available for the purposes of this study. If well conceived, the study could be a useful tool in planning the future of port infrastructure development in the country. In the context of this study, the consequence of the ongoing port rationalisation study is that plans for investment in infrastructure are essentially on hold pending the results of that project. The SVGPA reported that the existing infrastructure is capable of coping with current levels of ship and container traffic, partially because users of the facilities have reached independent agreements with each other regarding the timing of docking to avoid congestion. The Port Authority acknowledged that there is a need to expand the infrastructure in order to keep ahead of the demand that is expected to rise following recovery from the global economic recession. As the port rationalisation study will set out the long-term strategy in this area, it is logical for the SVGPA to await its conclusions and use them to develop an investment plan that will ensure more immediate investment needs are made within the context of the broader vision. Given this planning process is ongoing, the discussion in this section will focus on profiling the existing infrastructure and will not attempt to draw conclusions about where further investments could be made.

5.1.5.2 Existing Infrastructure

The SVGPA is statutory body charged with managing the country's port facilities. The port infrastructure consists of 4 ports on mainland St. Vincent; the Port of Kingstown, Campden Park Container Port, a cruise ship terminal and the Kingstown Ferry Terminal; and one port each on Bequia, Mustique, Union Island and Canouan. All of these locations have been designated as ports of entry into the country and thus can directly receive international shipments, but in practice the majority of goods enter through St. Vincent and are ferried out to the Grenadines as necessary. Therefore, the ports at Kingstown and the one at Campden Park are the country's major port centres. Accordingly the qualitative discussion that follows the table below concentrates on these two areas.

Table 35: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/TEU for warehouse pickup to port clearance	$100/TEU	2010	PA
Time to export	Days from packing at warehouse to departure from port			
Export shipping costs (TEU)	US$/TEU from main port to Miami			
Export delivery time	Days from departure from main port to arrival in Miami	5-7 days	2010	PA
Import handling charges	US$/TEU for port clearance to delivery at warehouse	$167/TEU	2010	PA
Time to import	Days from arrival at port to delivery at warehouse	1 day	2010	PA

Import shipping costs (TEU)	US$/TEU from Miami to main port	$1600 - 1900/TEU	2010	Chamber of Industry and Commerce estimates reported by PA
Import delivery time	Days from departure from Miami to arrival at main port	5-7 days	2010	PA

The Port of Kingstown was built in 1974 with an estimated 40-year lifespan. This port has 2 berths and a 274-metre pier with a depth of 9.75 metres alongside, and is used mainly to handle bananas, fresh produce, imported vehicles, lumber and cement.[32] With the 40-year lifespan of the facility approaching the 2014 deadline, and due to container handling space constraints, the SVGPA took the decision 2 years ago to move the majority of traffic to the Campden Park Container Port, which was built in 1995. Kingstown is now focused on inter-island trade with the Grenadines and other destinations.

As a result of the shift, Campden Park accounted for 90.6% of container traffic through the 2 ports in 2009.[33] The 100-metre quay, with a depth alongside of 12 metres, allows vessels of up to 12,000 deadweight tonnage to berth. Aside from having greater depth than the Port of Kingstown, Campden Park has more space for container handling and storage and is also located on an industrial estate close to several key customers. Despite the advantages, there is only one berth and although the quality of the infrastructure is sound, the SVGPA pointed to a need for expansion. Most vessels coming in to Campden Park stop in Barbados, and going out tend to visit St. Lucia before continuing on to Miami.

The existence of a separate cruise ship terminal with 2 berths ensures that there is no competition with cargo ships to dock. The cruise ship terminal, located a few minutes from central Kingstown, can accommodate vessels up to 100,000 gross registered tons and 260 metres in length. There is a terminal building with a parking lot and a separate quayside area for tour buses to facilitate passenger movement on the island. The nearby Kingstown Ferry Terminal has berths for four vessels with roll-on/roll-off ramps for service to the Grenadines. The ferries are capable of carrying 3-5 40 foot containers and can assist with movement of goods to the smaller islands.

The country's shipping industry is driven by imports, which account for the majority of the SVGPA's revenues. In tonnage terms, imports accounted for 82% of throughput at Campden Park and nearly 87% of throughput at the Port of Kingstown in 2009.[34] As a result, the volume of business is linked to overall economic performance. And while there is little danger of losing this domestic cargo trade to nearby ports, it is important for the facilities to offer a competitive service as this can assist in improving overall economic competitiveness.

In the terms of cost, the country does seem to be competitive. While the shipping cost for importing is nearly double that of Belize, which has much a much higher throughput, it is US$500-800/TEU cheaper than the cost in Grenada. The Chamber of Industry and Commerce reports that part of the reason for the low prices is that there are about 5 shipping lines

[32] Information on the facilities at the Port of Kingstown, Campden Container Port, the cruise ship terminal and the Kingstown Ferry Terminal is taken from the PA's website, www.svgpa.com.
[33] SVGPA Annual Statistical Digest, 2009.
[34] SVGPA Annual Statistical Digest, 2009.

competing for a low volume of container traffic in the country. The Port Authority reported that they make a loss on the export side of the business, but costs are not put up in order to assist export activity in the country. Tariffs are set in the regulations enacted pursuant to the Port Authority Act and changes require Cabinet approval.

Although costs may not seem expensive, the fact that many businesses do not import in sufficient volume to require a full container means that they have to pay less than container load prices based on volume, which can drive shipping costs up significantly. A potential solution to this problem is for greater cooperation between local entities importing the same types of goods so that they can order simultaneously to reduce costs. Anecdotal evidence suggests that this level of cooperation does not always exist among local businesses, which is a common refrain in the region, and so perhaps there is room for industry associations to foster a greater degree of trust to help address this constraint.

Maintaining ports in the Grenadines in addition to those on mainland St. Vincent pushes up the Port Authority's maintenance costs, and so it does seek to cut costs and improve efficiency. This is particularly important as revenues are derived mainly from imports and dips in trade volumes from decreased economic activities can prove a challenge against operating costs that are relatively fixed. The Authority is looking at a new system for payment of its fees, which would allow for payment upon unloading rather than by a full deposit in advance levied in at the port of origin. Positively, the SVGPA reported that customs clearance is fairly efficient due to the use of the ASYCUDA ++ system and the fact that imports are cleared in 1 day supports this assertion.

While the port rationalisation study will set out the country's long-term infrastructure requirements, the Port Authority did point out that there is a need to update its Act, which was last revised in 1990. Revisions that would harmonise the law with other legal instruments such as the Maritime Administration Act and legislation dealing with customs would be particularly useful. Whether or not the port rationalisation study will consider this angle is unclear, but even if it does not, it would be useful to ensure these legislative reforms dovetail with the agreed plan for infrastructure development.

5.1.6 Transportation: Road

The Roads, Buildings and General Services Authority (BRAGSA), is responsible for maintenance of the country's road network and government buildings. Established as a statutory body in 2008, BRAGSA does not carry out the majority of maintenance works itself, instead it lets works contracts and essentially functions as a management outfit. It falls under the authority of the Ministry of Transport, Works, Urban Development & Local Government, which monitors its activities and the external projects it manages for quality control. Perhaps due to the fact that it is a relatively young organisation, BRAGSA did not have a great deal of quantitative information on the country's road network. Therefore, the information in the analytical framework has been derived from other sources, but the qualitative analysis of the road infrastructure is based on the Authority's feedback.

Table 36: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	1,033 km	2010	Invest SVG website
Density of road network	Length of road network/total land area	2.66 km of road/km^2	2010	Invest SVG website, CIA World Factbook
Density of paved roads	Paved roads as a% of total road network	70.6%[35]	2003	CIA World Factbook
Condition of road network	% of road network in poor condition	Data unavailable	2010	BRAGSA

With a land area of just 389 km^2, it is unsurprising that St. Vincent and the Grenadines performs well in terms of road network density. BRAGSA reports that the reach of the road network is good, with feeder roads allowing access to most areas. However, many of the feeder roads are earthen and require upgrade and development works due to stress on the network and the fact that resources for maintenance are low, which has led to deterioration in their condition. As such, and although the figure for density of paved roads is fairly high, there is a lot of scope for expansion in paved roads, both on mainland St. Vincent and in the Grenadines.

In terms of BRAGSA's maintenance operations, the reason it does not carry out works itself is that it does not have the in house capability in terms of human resources and equipment. At times, even basic activities such as clearance of debris from roads are contracted out. The major exception in this case is building maintenance, and the Authority does employ 100 people to work on government buildings. As it is limited in the scope of its work on maintaining the road network, it is even more limited in terms of carrying out construction and upgrading work. Indeed, resource constraints mean that major road works are typically the province of donor-funded projects. For example, with EU support, 5 sections of the road on the windward side of the island were rehabilitated between 2005 and 2009.

Although BRAGSA does have some income-generating activities, it primarily relies on the budgetary allocation it receives to finance its operations. A 3-year strategic plan addressing BRAGSA's operations is being drafted and it will consider whether its functions should be

[35] The 2003 data from the CIA World Factbook were used to calculate density of paved roads. Although the Invest SVG website provided a more recent figure for length of the total road network, it did not provide a figure for length of paved roads, so could not be used for this calculation.

expanded. For now, the schedule for maintenance works is set out in an annual plan, which is subject to approval by the Board of Directors. In addition to finance and human resource constraints, the Authority indicated that there is great deal of variation in the quality of local contractors, and while it can limit itself to using good ones when it is permitted to contract directly, this can lead to bottlenecks in getting work done. BRAGSA suggested that there is a need for training across the industry, from technical skills through to business management for contractors.

As it was created by statute two years ago, BRAGSA operates within an accommodating legal framework that does not hamper its operations. However, linked to the quality of work issues is a need for standards in the industry and practical enforcement of them. This matter, along with the training issue, would seem to be beyond the scope of the BRAGSA strategic plan, but should be addressed by the relevant authorities.

5.2 Land

The Physical Planning Unit of St. Vincent and the Grenadines (PPUSVG) is responsible for implementing the Town and Country Planning Act in a manner that ensures orderly and progressive physical development in the country. This is achieved through development planning, i.e. the preparation of land use plans, and through development control, which involves the administration of planning permission for development. Like other countries in the region, there is a dearth of hard data on land stocks and land use in St. Vincent and the Grenadines, something that the PPUSVG is aware of. During the field research it indicated that although data were lacking, as can be seen in the table below, there are 2 initiatives underway that should address the deficiency.

Table 37: Analytical Framework – Land

Measure	Units	Data	Year	Source
Stock of commercial sites	Total square metres	Unavailable	2010	PPUSVG
Vacancy rates of commercial sites	% unoccupied	Unavailable	2010	PPUSVG
Cost of renting commercial sites	US$ per square metre/month			
Stock of industrial sites	Total square metres	Unavailable	2010	PPUSVG
Vacancy rates of industrial sites	% unoccupied	Unavailable	2010	PPUSVG
Cost of renting industrial sites	US$ per square metre/month			
Stock of freezones sites	Total square metres	Unavailable	2010	PPUSVG
Vacancy rates of freezone sites	% unoccupied	Unavailable	2010	PPUSVG
Cost of renting freezone sites	US$ per square metre/month			
Length of beaches	Total kilometres			
Cost of purchasing beachfront land	US$/square metre			
Cost of leasing beachfront land	US$/square metre/year			
Accommodation stock	Total rooms	2,475	2009	Caribbean Tourism Organisation
Accommodation occupancy rates	%			
Amount of arable land	% of total land area	35.9%	2005	CIA World Factbook

The Unit has developed a National Geographic Information System, which maps spatial data such as buildings, roads, etc. and other data such as census data in order to improve understanding of their relationships.[36] The System is expected to provide integrated spatial data that will assist in policy formulation in relation to land use and development activities. The System is nearly operational, but some work on mapping and data entry remains outstanding. The PPUSVG reported that land stock had not been fully quantified and hopefully this situation will be remedied upon completion of the data entry for the System.

The other major initiative is the National Physical Plan. A draft was first completed back in 2001 but not finalised and the PPUSVG would like to contract an expert to update the draft and complete it in 2011. The Unit has made use of elements of the first draft, but as it is dated and

[36] Government of St. Vincent and the Grenadines website: Ministry of Housing, Informal Human Settlements, Physical Planning and Lands & Surveys.

incomplete, implementation cannot be systematic. The expectation is that the Plan will set out a comprehensive approach to zoning to guide land use and management and, again, the hope is that the document will quantify the amount of land that has been zoned for particular uses to date.

At the moment, the amount of land falling into the categories of commercial, industrial and residential use has not been quantified. While hard numbers were not available, qualitative information on some types of land were obtained during research, which are as follows:

- There are 2 industrial parks, Campden and Diamond.
- Arable land is grouped into 4 classes, based on soil type and slope.
- Of the 389 km^2 of land in the country, approximately 1/3 is made up of forests and forest reserves. Elevation is a consideration in setting aside reserves and land over 1,000 feet above sea level is automatically reserved. There are a few reasons for the automatic rule; one is to ensure water security as most supplies depend upon surface water. Another is to preserve biodiversity and finally there is an element of colonial legacy here as estates had mountain land reserved for private use of wood and charcoal. The Forestry Department or the National Parks, Rivers and Beaches Authority manage these lands. Where water use comes into play, they may be co-managed by CWSA. Where hydro power is involved, VINLEC also has a role in management.

The National Parks, Rivers and Beaches Authority is responsible for land used management of protected areas, but not the day to day management. 30% of the country's land falls under this Authority. A UNDP-sponsored sustainable land management programme is underway and it will, by 2012, develop a land use policy and plan to facilitate more effective management of protected lands. The Authority does have a document entitled National Parks and Protected Areas System Plan 2009 – 2014 and the expectation is that this will feed into the UNDP work.

Although it does lack data, and is not alone in the region on that score, the PPUSVG does function well in terms of operations. In the World Bank Doing Business rankings for 2010, the country was 3rd in terms of dealing with construction permits. Efforts to reform its service delivery model are underway and a decentralisation programme saw 4 planning desks established in rural communities and on the Grenadines in 2010 to assist with planning permission. During the research, the PPUSVG was able to provide a list of construction applications for planning permission received in 2010. This broke down, by district, the number of applications, gross floor area, gross land area and the estimated cost of construction. Unfortunately it did not separate the data according to type of use so could not be used to provide proxy measures of land use allocation percentages. In the new systems that are being developed, this type of information should be captured automatically during the approval process and a running total of land stock by zoning type should be kept.

The Unit indicated that the Town and Country Planning Act is a good piece of legislation and is one of the better planning instruments in the region. The success in dealing with permit applications would seem to support this assertion. While the legislation is not a problem, and does provide the ability to enforce its provisions, mechanisms for enforcement are lacking. Unauthorised development or deviation from approved plans during construction is the major challenge the Unit faces. The PPUSVG reported that its 32 employees are sufficient for its operations and it carries out physical inspections prior to development, once foundations have

been laid and at other stages of construction. So monitoring of compliance is not the problem, but the available options for enforcement, such as halting construction or tearing down structures, are to be avoided if possible. Therefore, more sophisticated mechanisms for enforcement are required.

5.3 Labour

The availability of labour market information in St. Vincent and the Grenadines is quite good, particularly in comparison with the other OECS countries in the study. However, from the perspective of this study, i.e. availability of labour for investment purposes, the information has varying degrees of relevance. Furthermore, it could be argued that the perspective in this study is similar to the viewpoint that would be taken in economic development planning, which should touch upon issues such as size of labour force by occupation, wage rates by occupation, number of workers with particular types of skills/qualifications, etc. as a means of determining competitiveness. From this perspective, some of the available labour market information is of limited use.

Before discussing why this is the case, it must be pointed out that it is important for organisations such as the Department of Labour to track much of the information being referred to as part of the execution of their varied functions. The point here is that certain information is of use, just not from the investment perspective, and therefore, if that perspective is considered important, then changes to labour market information compilation are required.

For example, the Department of Labour issues an annual Statistical Report, which captures a large amount and range of information, including number of job seekers by categories, number of vacancies in certain categories, work permit applications by occupation, labour law proceedings and sample wages by category. As it has a responsibility to deal with labour disputes, data such as decisions of officers in labour complaints are important in discharging this function and setting of policy.

While such information may be of some interest to a private investor, there are many other labour market considerations that will be more important when considering where to invest. Availability of workers with relevant skills and how much it will cost to employ them are major factors in the investment decision, particularly in the case of efficiency-seeking investments such as manufacturing, or, more relevantly in the Caribbean context, call centres. And while the Statistical Report does contain data on sample wages, it is largely limited to low-earning and low-skill occupations. The categories in the Report are:[37]

- Wholesale/retail;
- Office/staff;
- Hotels;
- Construction;
- Bakeries; and
- Security workers.

Of the 57 occupations covered under these categories only 4 had a monthly salary range that reached EC$3,000 (US$1,111) or more. 3 of these fell under hotels and included accountant, manager and chef, and the top end of the range for chef was EC$3,000. The other occupation was engineers, under construction. The point here is that the information that is tracked is linked to occupations that do not have significant potential to improve livelihoods and is largely linked to the tourism industry (even engineers may be working on tourism projects). Given that

[37] St. Vincent and the Grenadines Department of Labour, Statistical Report, 2009-2010.

most countries in the region have identified a need to diversify their economies away from tourism and into higher value-added service industries, what is apparent is that data relevant to those pursuits is not the focus of labour market information.

The fact that service industries have been identified as the future for Caribbean economies, and rightfully so, means the need for relevant labour information becomes even more pressing, since success in services is critically dependent on human resource capabilities and costs. Accurate information is essential for effective economic development planning as it allows countries to determine where they are competitive and where they are not. This allows them to capitalise on strengths, i.e. pursue investment they have a hope of actually attracting, and institute policies and programmes to address weaknesses.

St. Vincent and the Grenadines is in the process of developing a Labour Market Information System (LMIS) with the ILO. In fact this system is the pilot project and should serve as a model for what is later rolled out in the OECS region. The system will be web-based and is expected to launch early in 2011. The hope would be that the LMIS directly address the issues raised above and provides a forward-looking tool that can help with a variety of functions, including policy setting, development planning and investment promotion. In order to deliver on that hope, it is critical that a variety of stakeholders are involved in the set up and ongoing operation of the LMIS. Encouragingly, the Statistical Office, National Insurance Services, the Ministry of Education (including vocational training) and the Ministry of Agriculture have been involved in the project. The LMIS has the potential to be a transformative tool and the results of the pilot project will be of use to a number of countries, not just St. Vincent and the Grenadines.

In terms of more relevant information that is available at the moment, the National Insurance Services (NIS) is a very useful resource. The NIS recognises that gap in labour market statistics and provides a partial means of bridging it. As part of social security contributions paid by employers for employees, the NIS gets information on the number of people working in certain industries and the total wages earned within these industries. Coverage is not absolute due to the fact that some contributions are on a voluntary basis (self-employed persons for example), the informal sector is not included and the fact that not all employers contribute (for example, coverage in construction is 42%). As a result the data collected are not reflective of the entire labour market, but they are certainly useful as an indication of the situation and trends. In lieu of presenting the data sought in the analytical framework, the following NIS figures showing employment by economic sector and average annual wage by economic sector are provided overleaf.

Figure 3: Percentage of Employment by Economic Sector (2009)

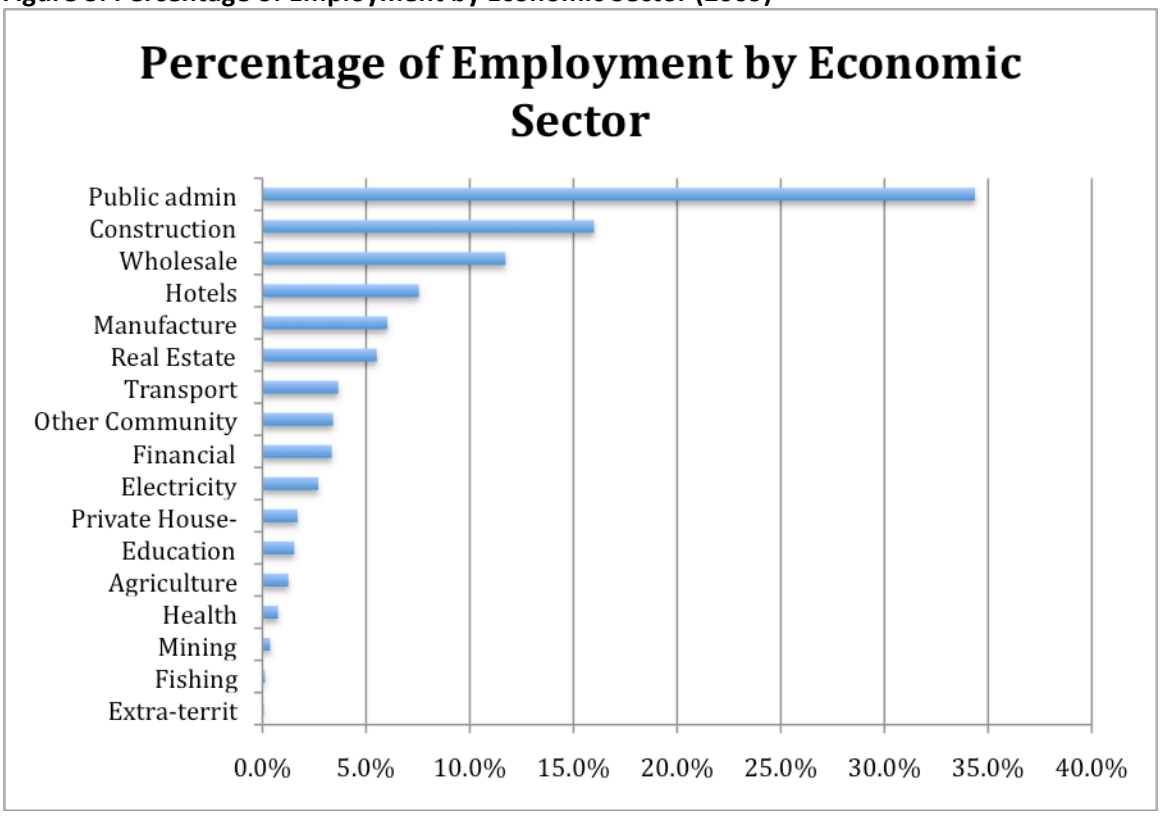
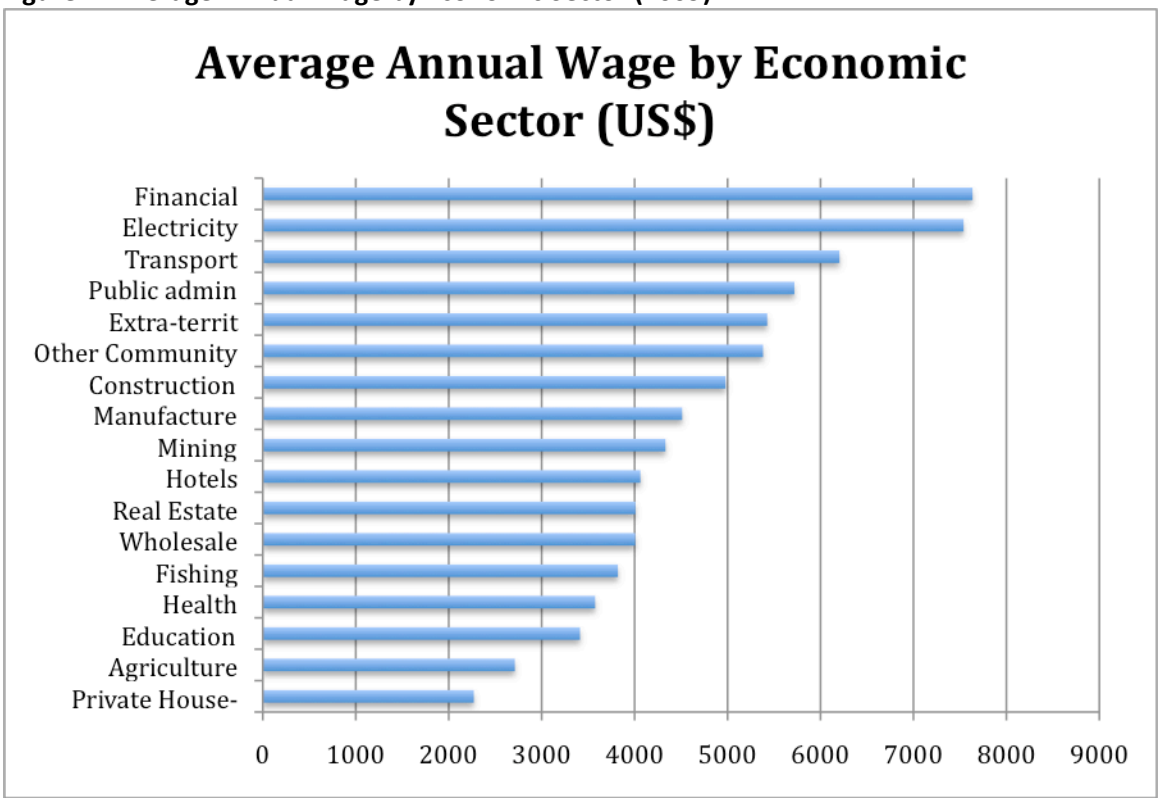


Figure 4: Average Annual Wage by Economic Sector (2009)



As expected the largest source of employment at 34.4% is Public Administration, reflecting the ongoing importance of the public sector as an employer. The next largest sources of employment were Construction (16.0%), Wholesale (11.7%) and Hotels (7.5%), demonstrating the importance of the tourism industry as a source of jobs, since it fuels construction activity. 1.3% employment in agriculture is surprising, given that the World Bank reported employment agriculture as 15.4% of total employment in 2001 and the perceived importance of the industry. However, this result can be explained by the fact that these figures do not cover the informal sector, which accounts for a great deal of agricultural employment.

In terms of wages, the top earning sectors in decreasing order were Financial, Electricity, Transport and then Public Administration, with the top two categories earning more than US$1,300 annually above the third placed category. Unfortunately, the highest 3 earning sectors did not amount to a great deal of employment, accounting for 9.7% of employment covered by the NIS figures. The earning potential in Public Administration, coupled with the amount of employment it accounts for, makes it even more important as a source of jobs.

5.4 Capital

The Vincentian financial sector is composed of commercial banks, non-bank financial institutions, building societies, credit unions and insurance companies. The 4 commercial banks, RBTT, Scotia Bank, First Caribbean and the National Commercial Bank are regulated by the Eastern Caribbean Central Bank, while the non-bank institutions come under a single regulatory unit at the Ministry of Finance. In addition to these entities, there is an international financial services sector, which is regulated by the International Financial Services Authority, a statutory body. There has been some consideration given to bringing this Authority under the Ministry of Finance's regulatory unit but whether or not this will take place was unclear at the time of research.

There used to be a separate development finance institution in the country, but it merged with the National Commercial Bank, which is now majority owned by a St. Lucian bank. This has adversely impacted the local availability of development and microfinance. Even though the Bank has maintained a small business portfolio, its commercial orientation means its lending rates will be on the order of 14%, as shown in the table below, a rate that effectively puts financing out of reach for some local businesses. Although the National Development Foundation and the Centre for Enterprise Development have some dealings in this area, they are not dedicated lending institutions and provide a mix of lending and technical assistance.

Table 38: Analytical Framework – Capital

Measure	Units	Data	Year	Source
Private credit/GDP	%	59.5%	2009	World Bank
Central bank lending rate	%	n/a		Eastern Caribbean Central Bank
Central bank savings rate	%	3%	2010	Eastern Caribbean Central Bank
National bank commercial lending rates	%	14%	2010	Eastern Caribbean Central Bank
Development bank commercial lending rates	%	n/a		

The planned Eastern Caribbean Enterprise Fund will look to improve access to finance and build capacity, much like the 2 institutions mentioned above, but on a regional scale. Given the situation, it is evident that there is room for providing finance to businesses and individuals that may not be able to bear the rates of a commercial loan. Whether or not this can be done in an economically viable manner is less clear.

There are also issues on the demand side of the situation. As in other countries studied, certain businesses and individuals lack the capacity to prepare adequate business plans and keep sufficient records. This hampers their ability to access finance as it raises perceived credit risk, which takes available lending rates up with it. The National Development Foundation and the Centre for Enterprise Development have provided some support for capacity building in this area, but feedback from the Eastern Caribbean Central Bank suggests more could be done

6 St. Kitts and Nevis

6.1 Infrastructure

6.1.1 Power

St. Kitts appears to have a serious issue with the reliability of its power generation. From an investment standpoint it is a much larger problem than either capacity or cost. Capacity issues are expected to be resolved mainly through the efforts that are currently underway towards geothermal energy exploration and costs of electricity are in the lower half of the spectrum of OECS countries.

Unlike a number of countries in the Caribbean the "power company" in St. Kitts is a department of the Government of St. Kitts and Nevis. The St. Kitts Electricity Department (SKED) operates under the direction, control and budget allocation of the Ministry of Public Works, Utilities, Transport and Postal Services. The Department has approximately 16,000 customers that were responsible for a peak demand of 25.7 megawatts in 2008. Although peak demand rose to 28 MW in 2010, with 36.3 MW of installed capacity and firm capacity of 31.8 MW, in theory the Electricity Department is well placed to satisfy it. This demand is met from three diesel-fuelled power plants that accommodate eight gensets. The figures in the table below were largely provided by the Electricity Department.

Table 39: Analytical Framework – Power

Measure	Units	Data	Year	Source
Installed capacity	MW	36.3 MW	2010	SKED
Delivered capacity or firm capacity	MW	31.8 MW	2010	SKED
Peak demand	MW	28 MW	2010	SKED
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	US$558.95 MWh	2010	CARILEC Tariff Survey June 2010
Electric power consumption	MWh per capita			
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)	24	2009	SKED
Average number of brownouts	Number per month	48	2010	SKED
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)	48	2010	SKED
Time to obtain electrical connection	Days	3 days	2010	SKED

Electricity costs to the consumer have fluctuated based on the extent of government's subsidy. In 2010, this subsidy peaked at EC$48 million for the year as the Government admitted that

existing tariffs did not cover the cost of providing the service, a fact which, according to the Prime Minister, "… has contributed to many of the problems that we have encountered with respect to the reliability of the electricity service, because the tariffs have not been enough to provide the resources necessary to fund the maintenance and upgrade of the system".[38] The Prime Minister pointed out that the local tariffs were the lowest in the OECS, which is borne out by the 2010 CARILEC tariff survey in certain consumption bands, for the eastern Caribbean countries covered by the study. For commercial customers using 2,000 kWh/month, St. Kitts is indeed the lowest. And while domestic consumers using 100 kWh/month in St. Lucia pay less than they would in St. Kitts, at higher consumption levels (400 kWh/month) St. Kitts regains its place as the cheapest source of electricity in the OECS countries included in the study.

The Prime Minister announced a new tariff structure to take effect in January 2011, a move that would see significant increases in the price of electricity. Under the new structure, the tariff will increase by US$0.27, US$0.30 and US$0.31, respectively, for the following three kWh ranges for domestic customers: 0-50 kWh/month, 50-125 kWh/month and 125+kWh/month. This represents a near doubling in unit price across the consumption bands. For commercial customers, the increases will be US$0.30, US$0.33, US$0.35 and US$0.37 across 4 kWh/month consumption bands.

Unlike most of the other countries included in this study, only in 2006 was a fuel surcharge introduced in the face of rising global costs of fossil fuel-generated energy and the infeasibility of subsidising rising fuel costs. The surcharge on residential electricity consumption was waived in December 2009, just prior to the general election of January 2009. Residential tariffs went from US$0.37 cents per kWh to US$0.51 cents per kWh after the introduction of the fuel surcharge (and increased government subsidy), and back down to US$0.32 per kWh after its removal. However in December 2010, in the face of a very trying fiscal environment the Government lifted the subsidy on residential rates and as a consequence those rates climbed back up.

The price increases will push St. Kitts from the lower end of the OECS cost spectrum into the higher and must also be considered in light of the current problems with reliability of supply. Business owners interviewed in St. Kitts all testified to the severe challenge posed by the unreliability of the supply of electricity. They indicated that they suffered at least one blackout per week, with the situation being worse in some areas, (e.g. Cayon), than others. The Electricity Department reports an average of two blackouts per month and four brownouts. Businesses, have had to install and rely on their own generators for their electricity and for effective operation of their businesses.[39]

The Government has been severely challenged to improve reliability of supply of electricity and to contain costs, as growth in the economy had been fairly high over the years preceding the global financial crisis, largely fuelled by growth in the hotel sector. However, the Department has been adversely affected by damage to equipment and burdened by the high replacement cost of equipment, which has necessitated the imposition of scheduled load-shedding on top of

[38] Prime Minister's 2011 Budget Address.

[39] There have been occasions when businesses have been requested by the authorities to operate their generators on particular days of the week.

an already difficult situation. These circumstances have not been helped by the accumulation of a large amount of consumer debt to the Department.

Interestingly, while supply problems obviously increase the cost of doing business in St. Kitts, one did not get the sense from those business persons interviewed this was a significant impediment to inward investment. Indeed, St. Kitts has had a great deal of success in recent years in attracting foreign direct investment into the country, especially in the hotels sub-sector. Although this activity predates the pending electricity price changes, it does suggest that this aspect of the infrastructure may not act as a significant impediment to investment.

Regardless of this success, some attempts have been made to deal with these challenges. For example, in 2006 the Government embarked on a Heavy Fuel Conversion Project that was completed in 2009. This project involved the conversion of all except two of its gensets to operate on heavy fuel oil, which is a cheaper fuel than the one previously used. The intended benefits to the Government and consumers in St. Kitts from this fuel conversion project were:

- Annual fuel cost savings of EC$16 million;
- Reduction in the production cost of electricity by EC$0.10 per kWh; and
- Reduction of fuel surcharge by approximately 50%.

Unfortunately it was not possible to determine the extent to which these intended benefits were realised, but it is clear that the Government is conscious of the need to improve the functioning of the Electricity Department.

Critically in this regard, the Government has spoken of diversifying its energy sources. Indeed a 5 MW wind energy project started in 2008. Although the results of this project have not yet been fully analysed, developing alternative sources of energy could help reduce the cost of producing electricity by reducing dependency on fuel imports, while improving the reliability of supply.

Geothermal energy may well be what the Government is banking on to bring about a significant reduction in the cost of energy and act as a spur to foreign as well as domestic investment. Recent geothermal drilling activities in Nevis are reported to have yielded positive results at several locations and it is estimated that the island's geothermal potential is somewhere between 900 MW and 1300 MW. The Government is studying the feasibility and implications of operating a geothermal energy powered interconnected electrical utility system for both St. Kitts and Nevis.

It appears it would be in everyone's interest for the Electricity Department to be accorded a status different from the one it currently enjoys. For years there has been discussion of corporatisation or privatisation but the Prime Minister has now given a date of end April 2011 for the process to be completed. Whether it will take the form of corporatisation or privatisation is not absolutely clear and the Prime Minister used both terms in his budget address. However he did use this impending policy decision as part justification for the large tariff increases: "it was critical that the tariff adjustment be implemented ahead of the privatization of the St. Kitts Electricity Department…It is important that we do this prior to the scheduled corporatization, in order to ensure the success of the corporatized entity when it comes on stream in about April of next year. We are determined that this new entity must at least break even."

While the price increases will help the Department, in whatever guise it takes on, with maintenance and upgrade investments, it could be some time before these investments result in an improvement in reliability of service. Therefore, consumers may have to contend with a significant increase in the cost of electricity without a change in the service they receive for some time. This is likely to lead to further complaints from the private sector and while a phasing of price increases may have reduced the potential backlash, perhaps there was a need to generate enough revenue to finance the necessary improvements quickly, rather than going though a drawn out process of works.

6.1.2 Water & Sanitation

As in the power sector, the Water Services Department (WSD) of St. Kitts and Nevis is a department of the Government and operates within the portfolio of the Ministry of Public Works, Housing, Energy and Utilities.

St. Kitts produces 7.21 million gallons of water per day, estimated to be about 46% of its potentially available ground water.[40] 30% comes from spring-fed streams and 70% from wells/aquifers. 100 wells have been drilled since 1970, 30 of which are currently in production.

There are 7 springs that provide an average combined flow of approximately 9,000 m^3 (2.38 million US gallons) per day. About half of that spring water is treated by sedimentation, rapid sand filtration and chlorination at the La Guerite Treatment Plant for supply into Basseterre. A network of 30 wells provides the rest of the freshwater supply, and they have a combined capacity of approximately 6 million US gallons per day.

The total capacity of storage reservoirs is about 32,000 m^3 (8.5 million US gallons). It is estimated that St. Kitts has currently exploited about half of the available groundwater resources on the island. All residents of St. Kitts have access to water 24 hours per day. Over 90% have water piped directly to their homes; others have access to nearby standpipes. In terms of water quality, St. Kitts has taken some proactive steps to increase the safety of the public water supply by expanding its chlorination programme.

Most of the water supply serves the domestic sector (over 50%) while tourism, agriculture and other commercial sectors each utilise between 10 and 15% of the water supply. The country produces sufficient water to meet current demand and as of December 2010, the WSD reported having "a bit of excess capacity". However the authorities are concerned that continued economic growth, in particular envisaged hotel-intensive developments, could lead to difficulties down the road, especially as insufficient availability of water for agriculture has also been identified as a looming challenge. Growth in tourism and agriculture could see the demand for water double in the next 10 to 15 years. Most of this additional demand would need to be met by development of groundwater reserves, but it is expected that some desalination may be used.

As a result, the Department has identified the imperative of exploring its undeveloped reserves of ground water, a rather capital intensive and expensive proposition. To move from the current daily production levels of 7.21 million US gallons to 12 million US gallons/day would cost approximately US$11.1 million, (a 2008 estimate). There is the alternative of going the route of desalination plants to meet the island's anticipated increased demand for water supply, although this is also a quite expensive option. Consideration is also being given to drilling deeper wells in order to better service the needs of the growing tourism industry.

Although this may not be evident from the large arrears overhang, [41] St. Kitts water rates may be among the lowest in the Caribbean and are broken down in the table below.

[40] "Let's Talk Water", Cromwell Williams, Manager/Water Engineer, Department of Water Services, St. Kitts.

Table 40: Analytical Framework – Water & Sanitation

Indicator	Units	Data		Year	Source
Cost of water supply	US$ US Gallons	Metered	Unmetered	2010	WSD
		Domestic (gallons/month): 0 – 6,005: US$0.22/100 gals 6,006 – 8,407: US$0.30/100 gals 8,408+: US$0.37/100 gals Commercial: US$0.46/100 gals	Domestic: US$0.28 on every US$1.85 of the annual assessed rental value of premises Commercial: US$0.46 on every US$1.85 of the annual assessed rental value of premises		
Average number of incidents of water shortages	Number/month	1.1		Jan-Sept 2010	WSD
Average duration of water shortages	Hours	5+ hours		Jan-Sept 2010	WSD
Time to obtain water connection	Days	4 days		2010	WSD
Cost of wastewater supply	US$	Unavailable		2010	WSD
Quality of waste treatment system	Rating from 1 – 5[42]	1		2010	WSD

Water rates for residential and commercial use depend on volume of usage and whether or not the supply is metered. The proportion of unmetered customers, commercial and residential, is in the range of 10-20%.

While the WSD's records indicate 10 incidents of water shortages (lasting 5 or more hours) between January and September 2010, the most common response from business persons interviewed was that they "almost never" experienced shortages, which reflects well on the Department.

[41] The Ministry of Finance reported some time during 2010 that the WSD had tens of millions of EC dollars of outstanding money to collect from both domestic and commercial consumers, a situation the Cabinet agreed was untenable.

[42] The criteria for the ratings are as follows:

- 5: Public waste treatment facilities provide 1st, 2nd and 3rd stage biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable.
- 4: Facilities provide 1st, 2nd and 3rd stage biological and chemical wastewater treatment, but tap water is not potable.
- 3: Facilities provide 1st and 2nd stage treatment. Wastewater smells.
- 2: Facilities provide 1st stage treatment. Wastewater is harmful to the environment.
- 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.

The WSD is in the course of formulating a Water Development Master Plan (2012-2025) that will include:

- Adding at least 1.2 million US gallons per day additional capacity from groundwater to meet anticipated increases in demand. This is expected to be accomplished through a Public Private Partnership where the groundwater development company would undertake the upfront exploration and drilling/completion/operation of production well(s), and the government would pay on a per gallons delivered basis;
- Increasing system capacity and distribution to meet anticipated increases in demand; and
- Pursuing updated legislation and institutional reform, possibly corporatisation.[43]

The WSD is on record as urging conservation on the part of Kittitians regarding the use of water, noting that water supplies are not limitless and inexhaustible.[44] The Department has urged recognition of the fragility and vulnerability of the resource and the need for careful management, pointing out that successful management of the resource must begin with the successful reforms to the institutional framework, policies and human capacity.

It has not proved possible to obtain official data on wastewater treatment facilities from the WSD. However, the Department did acknowledge that there are problems with the adequacy of wastewater disposal and treatment facilities.

Wastewater and sanitation are the responsibility of a separate department of government, the Environmental Health Department. There is no centralised sewerage system in St. Kitts & Nevis. As such, the vast majority of domestic, commercial and industrial users use traditional septic tank and soakaway systems. There are a few exceptions such as a secondary activated wastewater treatment plant at the Marriott hotel and a few package treatment plants here and there throughout the island. As such, the responsibility of wastewater treatment and disposal is borne by each homeowner or business owner. As such availability of hard data on wastewater treatment and its adequacy are unavailable.

The judgment on wastewater was confirmed by business persons interviewed, in particular the CEOs of two hotel/villa developments. Both of these companies had to make their own disposal arrangements. The largest hotel facility in St. Kitts has had to install a modern waste recycling plant that reportedly has the capability to accommodate other nearby hotel developments, subject to agreement between the parties as well as the governmental authorities.

[43] "It is believed that the existing structure where the WSD is a utility within the central government presents numerous challenges to its efficient operation." (Cromwell Williams, Manager, WSD, St. Kitts, May 2010).
[44] *Ibid*.

6.1.3 Telecommunications

The telecommunications landscape in St. Kitts is broadly similar to those in all the member states of ECTEL. ECTEL was established in the wake of the liberalisation of the telecoms industry in the islands that had been dominated by Cable & Wireless for practically their entire history. Over the ten years of its existence ECTEL has proven to be a successful regional regulator, providing both stability and technical expertise to the national telecommunications regulation authorities of the respective islands.

The effect of telecommunications liberalisation can be seen in the rapid expansion of the provision and use of mobile telephone services in all the ECTEL member states, including St. Kitts. Indeed the telecommunications industries of these islands have been a driving force in their respective economies and have made a significant contribution to GDP – in the case of St. Kitts, 10.1% in 2008 and 10.7% in 2009. The impact of the opening up of the industry across several telecoms indicators is shown below.

Table 41: Analytical Framework – Telecommunications

Indicator	Units	Data	Year	Source
Broadband cost	US$/month (download speed: 2 Mb/second)	$36.67	2010	LIME
	US$/month (download speed: 3 Mb/second)	$55.19	2010	LIME
	US$/month (download speed: 6 Mb/second)	$92.22	2010	LIME
	US$/month (download speed: 8 Mb/second	$114.44	2010	LIME
Size of external fibre optic connection	Terabits/second			
Internet subscribers	Number/1,000 people	293.9	2010	ECTEL
Landline cost	US$/month	$9.78	2010	ECTEL
Landline cost of local call	US$/3 minutes	$0.08	2010	ECTEL
Landline cost of call to mainland US landline	US$/3 minutes	$1.10	2010	ECTEL
Landline penetration	Number/1,000 people	405.7	2010	ECTEL
Mobile phone cost	US$/month (minimum of 2,400 minutes in plan)	$50.00 2,500 minutes (on-net) 2,500 SMS (on-net) 1Gb (on-net data)	2010	LIME
Mobile phone penetration	Number/1,000 people	1,622.6	2010	ECTEL

The growth in mobile use has been particularly marked; in 2010 mobile penetration in ECTEL countries was over 120%, with St. Kitts at 148%. In 2009, the share of mobile revenues to total revenue for service suppliers increased from 44% to 58%, more than compensating for the decline in revenue from fixed lines.

Indeed, activity in the fixed line market was flat in 2009 in terms of subscribers, with an 11% drop in call traffic. Despite the large growth in mobile subscribers fixed-to-mobile traffic fell by eight%. The cost of monthly rental remained at US$9.78 and the “ceiling peak rate” was US0.03

per minute. As in the other OECS countries the fixed line market is dominated by LIME. There is one other player in the fixed line market, trading as Caribbean Cable Communications but this company is described as a "small competitor".[45]

The mobile market in St. Kitts is dominated by LIME and Digicel, a situation that mirrors the one in most of the OECS countries. As indicated above, the growth in mobile subscribers was tremendous in the first decade of liberalisation of the market, however in 2009 the growth slowed to 3% from 15.2% the year before. Rates for mobile services have been on a downward trajectory throughout the ECTEL/OECS countries and are expected to remain on this path in the near future due to ECTEL's regulated reduction in wholesale termination rates.

Data on the traffic in VoIP calling was not available, although it is evident that it poses a major challenge to the dominance of fixed-line and mobile originated calls in international traffic.

The demand for fixed internet service in St. Kitts has continued to increase although ECTEL suggests that "… the market's full potential has not yet been realised". ECTEL believes that in St. Kitts (and its other member countries) internet penetration has lagged behind the growth of other telecommunications services due to the limited access to computers. There has been a significant reduction in prices but "the lack of effective competition impeded further declines in prices"[46].

Fixed broadband service in St. Kitts is provided by three companies – LIME, Caribbean Cable Communications and The Cable. Growth has been sharp and the number of subscribers increased from 12,700 in 2009 to 14,577 in 2010. LIME's baseline package remained at US$36.67 over this period. As for mobile broadband service, ECTEL considers that the market for these services is "highly underdeveloped" although it is expected to improve radically as the amount of competition, and the technology, increases. ECTEL believes that "mobile broadband technologies may offer the best prospects for widespread provision of broadband in a cost-effective manner and for reducing the digital divide between those who can and those who cannot access information and communications technologies."

Interviews with business persons suggested that telecommunications is not at all a constraint on the country's ability to attract domestic or foreign direct investment. All three of the companies interviewed gave a rating of 4 out of 5 to the quality of the country's internet services, noting that "service is usually operational; almost never down or disconnected". The same rating was generally given to the quality of telephone services, (landline and mobile), and "connections are usually clear, calls are almost never dropped, and lines are never down".

Going forward, St. Kitts, along with the other members of ECTEL, would be looking to continue on the trajectory that has witnessed such massive development over the past decade. Universal service, the further spread of affordable broadband, acceptance of the concept of one's telecommunication's space among the OECS countries, adoption of a suite of e-legislation, lower prices for services and the introduction of wireless broadband will all help to improve the countries' investment climates and increase their competitive edge.

[45] ECTEL, Annual Telecommunications Sector Review 2008-2009, p. 32.
[46] ECTEL, Annual Telecommunications Sector Review 2008-2009, p. 35.

6.1.4 Transportation: Air

There is one airport in St. Kitts, the Robert L. Bradshaw International Airport (RLBIA), and one in Nevis. RLBIA was renovated in 1998 and further upgraded in 2006 and is managed by the St. Christopher Air & Sea Ports Authority (SCAPSA), a statutory corporation established in 1993. The airport now boasts three taxiways and parking for eight wide-bodied jets. At 2,317 metres long and 45 metres wide, the runway can accommodate aircraft up to 747 size.[47]

As the table below indicates, information on passenger and freight load capacity were not centrally available. Carriers include American Eagle, American Airlines, Delta, British Airways, Sky Service and LIAT and there are scheduled services to the UK, Canada and the US as well as many destinations within the Caribbean. There is only one direct flight per day to the US, American Airlines to Miami, but there are two weekly flights to Georgia and North Carolina. In addition there are two flights per week to New York and one to London.

Table 42: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	2	2010	CIA World Factbook
Number of direct flights to US/Europe	Number of flights/week	12	2010	RLBIA
Airports with paved runways	Number	2	2010	CIA World Factbook
Number of paved runways by size	Under 914 metres	0	2010	CIA World Factbook
	914 – 1,523 metres	1	2010	
	1,524 – 2,437 metres	1	2010	
	2,438 – 3,047 metres	0	2010	
	Over 3,047 metres	0	2010	
Passenger load capacity	Load factor			
Freight load capacity	Load factor			
Export handling charges	US$/kg for warehouse pickup to port clearance	Variable. Negotiable with Brokers/ Truckers	2010	Tropical Shipping Ltd.
Time to export	Days from packing at warehouse to departure from port	1-3 days	2010	Tropical Shipping Ltd.
Export shipping costs	US$/kg from main port to Miami	$2.20-$1.43/kg Minimum: $65.00	2010	Amerijet
Export delivery time	Days from departure from main port to arrival in Miami	1 day	2010	
Import handling charges	US$/kg for port clearance to delivery at warehouse			
Time to import	Days from arrival at port to delivery at warehouse	1-5 days	2010	Tropical Shipping Ltd.

[47] http://www.scaspa.com/RLB_AirPort.asp

Indicator	Units	Data	Year	Source
Import shipping costs	US$/kg from Miami to main port			
Import delivery time	Days from departure from Miami to arrival	1 day	2010	

Air cargo services are provided by a number of freight forwarders including FedEx, DHL, and UPS. Cargo facilities include a bonded warehouse, a transit zone, a domestic-cargo-only zone, an animal quarantine station, a fresh meat inspection area and an express courier centre. There are facilities for handling dangerous goods and exceptionally large or heavy items of cargo.

There are plans to enhance the services and facilities at RLBIA even further in the near future, to include a refurbished and expanded terminal, and a private facility catering to high-end travellers.

6.1.5 Transportation: Sea

The Basseterre Cargo Port, or the Deep Water Port, is the main cargo handling facility for St. Kitts and can comfortably accommodate vessels over 900 feet long with a draught of 27 feet. Vessels up to 300 feet can berth at the Ro-ro pier, which has a minimum depth of 19 feet. Twenty-four hour pilotage service is available.[48] During the tourist season, the Deep Water Port provides additional berthing for cruise ships up to 960 feet in length with a maximum draught of 26 ft.

There is container storage next to each berth as well as reefer facilities and a spacious park to accommodate the Port's growing traffic in containers. Two transit sheds, one dedicated to personal goods and the other to commercial cargo, provide some 175,000 square feet of warehousing.

The main imports handled include building materials, cement, fuel oils, lumber, reefer cargo and vehicles. The main exports are alcoholic and non-alcoholic beverages. Liner services are provided by Tropical Shipping, Bernuth, Seaboard Marine and Geest.

Transhipment services were introduced in 2005 in partnership with Bernuth Lines of Miami. By using St. Kitts as a transhipment centre, vessels can discharge their southbound cargo in a central location for onward shipment to regional destinations such as Dominica, St. Vincent, Trinidad and Guyana. This partnership has enabled Bernuth to make shorter, more direct trips from Miami while also producing benefits for St. Kitts in terms of an increase in cargo handling business and more revenue from port fees. This is one of several strategic moves planned by the Board and Management of SCASPA in order to strengthen its financial position.

The table below indicates the time and cost involved in exporting and importing goods. Essentially exporting to the US takes between one and three days from packing at warehouse to departure from the port and it takes up to six days from departure from St. Kitts to arrival at Miami. Import delivery time from Miami to St. Kitts is also about six days.[49] Exporting a 20 foot container to the US would cost US$2000.00 and a 40 foot container US$2500.00. Importing a container costs rather more: US$3500.00 for a 20 foot container and US$5700.00 for a 40 foot. It can take up to 5 days from arrival at port in St. Kitts to delivery at warehouse. Port charges on import are about US$125.00/TEU.

Table 43: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/TEU for warehouse pickup to port clearance	Variable. Negotiable with Brokers/Truckers	2010	Tropical Shipping Ltd.
Time to export	Days from packing at warehouse to departure from port	1-3 days	2010	Tropical Shipping Ltd.

[48] St. Kitts also has a cruise-ship port, (Port Zante), with a pier that is 1,100 ft. long with a minimum depth alongside of 28 ft., and "is designed to withstand the most powerful hurricane experienced in the islands over the past century". Information taken from the St. Christopher Air & Sea Ports Authority

[49] Data obtained from Tropical Shipping, the largest shipping company in St. Kitts and most of the OECS countries.

Export shipping costs (TEU)	US$/TEU from main port to Miami	20' – US$2000.00 40' – US$2500.00	2010	Tropical Shipping Ltd.
Export delivery time	Days from departure from main port to arrival in Miami	6 days	2010	Tropical Shipping Ltd.
Import handling charges	US$/TEU for port clearance to delivery at warehouse	US$125.00/TEU	2010	Tropical Shipping Ltd.
Time to import	Days from arrival at port to delivery at warehouse	1-5 days	2010	Tropical Shipping Ltd.
Import shipping costs (TEU)	US$/TEU from Miami to main port	20' – US$3500.00 40' – US$5700.00	2010	Tropical Shipping Ltd.
Import delivery time	Days from departure from Miami to arrival at main port	6 days	2010	Tropical Shipping Ltd.

Cargo dues are also payable on goods, "landed or loaded", at the rate of US$12.96 per ton or 35 cubic feet whichever is greater. Tailgate charges are also payable at the rate of US$1.11 per ton or 35 cubic feet, except that small packages under are charged between US$0.37 and EC$1.11.

Clearly the relative burden implied in these charges can only really be evaluated in comparison with an appropriate selection of comparator countries however, the cost of importing containers is high, which does increase the cost of doing business locally. This is a particular concern as the economy is heavily dependent on imports.

6.1.6 Transportation: Road

It has proved very difficult to elicit information on St. Kitts' road infrastructure from the Public Works Department. Although a meeting was arranged it was shortened due to an operational issue that arose. A representative of the Department undertook to forward the information requested but the data has not been forthcoming despite reminders. The table below provides data on the extent of the road network, but without feedback from the Public Works Department, there is little qualitative information about the roads infrastructure available. What is known is that the single paved road that circumvents St. Kitts and links the villages is generally in good condition but secondary roads are not as well maintained.[50]

Table 44: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	383 km	2002	CIA World Factbook
Density of road network	Length of road network/total land area	1.47 km of road/km^2	2002	CIA World Factbook
Density of paved roads	Paved roads as a% of total road network	42.6%	2002	CIA World Factbook
Condition of road network	% of road network in poor condition	Unavailable		

[50] Jane's Sentinel Country Risk Assessments, www.janes.com/extracts/extract/cacsu/stkis060.html.

6.2 Land

Information on availability of land for investment purposes is not available from the St. Kitts Investment Promotion Agency (SKIPA) or any other central location source in St. Kitts. If an investor wanted such information SKIPA would refer him or her to real estate agents operating in St. Kitts. Nor was any price information available as this was a matter for negotiation between potential buyer and seller.

The Government of St. Kitts and Nevis operates three "fully developed" industrial sites in St. Kitts and one in Nevis where production facilities can be constructed to specifications and leased at nominal rates. These are:

- The Bourkes Industrial Estate, Sandy Point;
- The C.A. Southwell Industrial Park, Ponds Section; and
- The C.A. Southwell Industrial Park, Bird Rock Section.

At the time of the visit to St. Kitts all of the available factory shells were occupied. It appears that a potential investor desirous of factory space would need to check availability on the private market where demand and supply considerations would play a role in determining the outcome of the negotiations.[51] At the time of the visit SKIPA was not able to indicate if any space was available or vacant.

SKIPA could not provide information on the cost of factory space at the industrial sites – a number of these sites are in fact "permanently" occupied by various local businesses including car dealerships and other commercial operations. If and when space becomes available, the price becomes a matter for negotiation with the relevant Government ministry.[52]

[51] In the course of the field research, one company announced closure of its operations, thus making available one factory shell for another investor.

[52] It was not possible to elicit rental cost information from the executive of a business that occupied factory space in the industrial site.

6.3 Labour

Information on the labour market in St. Kitts was very difficult to come by, a situation that is common to many of the OECS countries.

As in most of the countries there was no available data on underemployment. Even the unemployment data could be based on little more than intelligent guesswork given the fact that the last census took place 10 years ago and there have not been continuous or regular sample population surveys, as take place in the larger Caribbean countries, since that time. There is no functioning labour market information system so general labour market information is not available.

Unemployment is estimated to be between 10 and 15% in St. Kitts and Nevis. There are fears that this situation could deteriorate as the Government seeks to reverse years of inadequate attention to the country's fiscal and national debt situations. A consequence of the new focus on prudent economic management is the likelihood of significant numbers of job losses as the Government takes steps to reduce public expenditure, including expenditure on statutory corporations.

St. Kitts' statutory minimum wage is US$2.96 per hour, which was the wage paid to entry-level, frontline employees in two of the three companies interviewed during the field visit. The third company said their entry-level wage was US$3.33 per hour. As data was not available, the analytical framework for labour has not been reproduced here. Instead, wage estimates provided by the three companies interviewed are shown below.

Table 45: Labour Data – St. Kitts[53]

	US$	US$	US$
Entry-level wages	$2.96/hour	$2.96/hour	$3.33/hour
Supervisory level	$4.44-6.30/hour	$2.96-9.26/hour	$888.89/month
Second-tier management	$2,222-2,963 /month	$2,222-2,963 /month	$1,111-1,481 /month
% of unionised workers	0		0
Average worker turnover	2.5%		40%
Average weekly working hours	40		45

Workers in the three companies were not unionised; turnover was low; but two of the executives reported a target income phenomenon that manifested itself in low reliability and commitment among workers, which may explain the 40% turnover reported by one of the companies.

As to the availability of the right kinds of workers, all three of the companies interviewed reported that there was a sufficient pool of workers available and they did not experience a great deal of difficulty in recruiting workers. Where the right skills were not readily available, the executives found that there was a large pool of workers who were trainable. On a scale of 1-5, with 5 equating to an employer's market, they rated the labour availability as 4.

[53] The data in this table need to be interpreted with caution. They are based on the responses from those few companies that were interviewed and may not typify the national situation.

In the context of the imperative of adapting from a sugar-based economy to a "new" economy fuelled by tourism and other services industries, the Government in its National Adaptation Strategy has laid out plans to increase opportunities for labour-market related training and capacity building.[54]

[54] Government of St. Kitts and Nevis, Adaptation Strategy in Response to the New EU Sugar Regime, 2006-2013.

6.4 Capital

Generally speaking, foreign investors do not rely on the local market for financing of their projects. Of the three businesses interviewed one of them, a hotel/villa development, had initially approached a local financial institution for funding. The developer thought that the potentially available funding was too high cost and resorted instead to putting together a consortium-funded package of financing for the project. However it appears to be more normal for foreign investors to arrange financing from outside of the investment destination.

It is difficult to determine the final rate that will be available to a potential borrower on a particular transaction. Average prime lending rates in St. Kitts are available from the Eastern Caribbean Central Bank. For 2010 these rates ranged from 8 to 14%. Throughout the Eastern Caribbean Currency Union area these rates form the base for purposes of negotiations between lender and borrower, with the eventual decision on the specific rate in particular cases being determined by level of risk, term of the loan, etc. A typical rate for a business would be about 2% above prime. For a small local business, this represents a high cost of financing. While large foreign investors can access capital outside the investment destination and thus better terms of borrowing, for domestic businesses, access to finance can pose a challenge.

7 Findings: Antigua & Barbuda

7.1 Infrastructure

7.1.1 Power

The distribution and sale of electricity is the exclusive right of the country's state owned public utility, the Antigua Public Utilities Authority (APUA). The Utility was established by legislation as a statutory corporation in 1973 with the purpose of providing an integrated management structure for water, electricity and telephone services.

The APUA's electricity transmission and distribution network consists of a transmission tower line and 22 distribution feeders. The transmission of electricity from the power plants to the six distribution substations and on to customers is done at eleven thousand volts.

The country currently generates power in excess of demand. Installed capacity is 57 MW, which does not include 11 MW available from a reconditioned plant that is being kept in cold reserve for emergency purposes. Peak demand is 50 MW and the results of the quantitative data gathering for the country's power infrastructure are provided below.

Table 46: Analytical Framework – Power

Measure	Units	Data	Year	Source
Installed capacity	MW	57 MW	2010	APUA
Delivered capacity or firm capacity	MW		2010	APUA
Peak demand	MW	50 MW	2010	APUA
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	US$811.59	2010	CARILEC Tariff Survey June 2010
Electric power consumption	MWh per capita	0.6 MWh per capita	2010	APUA
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)	33.96	2009	APUA
Average number of brownouts	Number per month	Unavailable	2010	APUA
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)	25.1	2010	APUA
Time to obtain electrical connection	Days	10 days (up to 3 weeks if poles are required)	2010	APUA

Most of the electricity is generated by a private producer-supplier who supplies the national grid. Through the support of the Chinese Government, an additional 25 MW of electricity is to

become available in the second quarter of 2011, which will bring about a reduction in the dependency on the power provided by the private producer.

The authorities expect that the additional 25 MW will take care of the country's needs to 2018, after which any additions to the national grid will come from renewable sources. There is an experimental wind power plant on the island but at the moment fossil fuel fired power stations supply the country's power. Reciprocating diesel engines account for 70% of the installed capacity on the island of Antigua with the remaining 30% originating from a dual purpose (water and electricity) steam plant.

The cost structure is tiered: for residential customers the first 300 units attract a rate of US$0.147 per unit and US$0.14 for consumption over 300 units. Commercial and industrial customers pay $0.16 per unit for the first 100 KWh, US$0.15 per unit for the second block of 250 KWh and US$0.14 per unit for the next (unlimited) block. In addition there is a "fuel variation charge" of US$0.23 that appears to be the equivalent of the "fuel surcharge" applied in other island jurisdictions.

Electricity costs in Antigua are just about the highest of the countries covered in this study. This is evident from the data provided by CARILEC and have been at that ranking for some time as reported in previous such comparisons carried out by international financial institutions.

While the utility boasts of 100% electricity penetration in the country, it also reports an average of 2.8 blackouts per month. This represents an improvement over the situation only months ago when the country experienced 3-4 outages per month. One hotel developer interviewed indicated that the outages were more frequent than what the APUA reported and were more on the order of one per week.

It is believed that Antigua and Barbuda has considerable potential for renewable energy, especially for the application of wind and solar technologies. However it has already achieved full country-wide electrification using conventional power sources, a fact that would have a bearing on the economics of developing alternative renewable energy applications, which are sometimes more suitable for remote or isolated locations.

As is the case with the Government of St Kitts and Nevis, the Government of Antigua and Barbuda reports continuous improvement in the reliability of the supply of electricity. For a long time there have been issues with the functioning of the APUA, including issues of government control but it appears these issues have been ironed out and the authority is on a path towards increased efficiency. Again as is the case in St Kitts, the electricity issue does not appear to be a binding constraint on the ability of Antigua and Barbuda to attract foreign investment despite the problems with costs and supply. Like St Kitts and Nevis, Antigua has done well in that area, especially in attracting foreign investment in the hotel sector.

7.1.2 Water & Sanitation

Water & sanitation services also fall under the province of the APUA, which operates a network of distribution pipes throughout the country to supply treated water to both domestic and commercial customers. The Water Division of the authority is dedicated to "providing, protecting and preserving the nation's water supplies". They claim to supply quality water that complies with all local, regional and international standards. The Public Utilities Act (1993) is the main legislation for water resources management and development. Legislation provides for fining and legal action against those found to be involved in polluting waterways.

Antigua enjoys a semi-arid, tropical climate with an average annual rainfall range of 1,070 - 1,140 mm, unevenly distributed with peaks during the months of October to December and extended periods of drought during March to June. Barbuda is drier with average annual rainfall ranging between 760 - 990 mm. Droughts occur every five to ten years. When several low-rainfall years occur consecutively, the country faces critical water shortages. There have been times in the past when Antigua has had to import water from other countries.

The total average rainfall for both islands is estimated at 453 million m^3/year and internal renewable water resources about 52 million m^3/year. There are no perennial water sources in the country. The country's agricultural and municipal (domestic and commercial) water demands are being met by a combination of desalination plants; surface dams, small ponds and well fields.

The APUA invested in a 2 million-gallons-per-day desalination plant as part of a combined water and electricity project at Crabbs. This plant was commissioned in 1987 and significantly improved the water and electricity situation on Antigua, at one stage producing upwards of 70% of national demands for both water and electricity. A few years later the APUA contracted with a private producer to supply desalinated water in bulk (approximately 0.5 million gallons per day) to the Authority. This water was produced from a reverse osmosis plant located at Crabbs.

Total dam capacity in Antigua was about 7 million m^3 in 1992. It is estimated that there are over 500 ponds, each with capacity less than 1,000 m^3. The small ponds are used primarily for agriculture and many of the reservoirs are used for both agricultural and municipal uses. During drier months irrigation is restricted to very limited use due to shortfalls in surface and groundwater yields, and most surface water storage is diverted to municipal supply. The entire population, both rural and urban, has access to potable water. Most of the municipal water is treated at three main treatment plants.

Annual withdrawals of ground and surface waters amount to 47.55% of available total water or 441,107,664 imperial gallons. Average domestic consumption of water amounts to 14.07 litres per capita and per diem.

Owing to the low annual rainfall and high evapotranspiration, irrigation is a necessity for the successful cultivation of crops. Irrigation potential has been estimated at 319 hectares. This estimate is based on developing surface water storage capacity in an economically rational manner. Proposed sites with favourable development potential have been selected on the basis of their topographic suitability, geological conditions and proximity to agricultural lands.

Surface supplies are the main source of irrigation water for agriculture, with occasional use of groundwater when municipal demands allow. Agriculture uses about 21% of the municipal water supplied, as priority is given to domestic and municipal uses. Many small dams have not been used efficiently and underutilisation and lack of maintenance have resulted in the deterioration of these facilities.

Freshwater is a scarce resource in Antigua and Barbuda and in the context of a growing tourist industry, demand for water is increasing. The APUA has been pursuing a long-term water development plan with emphasis on desalinisation of seawater to eliminate the risk of drought and compensate for inadequate surface storage and groundwater facilities. Details of the current status of the infrastructure are shown below.

Table 47: Analytical Framework – Water & Sanitation

Indicator	Units	Data	Year	Source
Cost of water supply	US$ US Gallons	Commercial: US$4.07/cubic metre	2010	APUA
Average number of incidents of water shortages	Number/month	0, except in drought situations	2010	APUA
Average duration of water shortages	Hours	6-12 hours, while rationing is imposed during droughts	2010	APUA
Time to obtain water connection	Days	10 days	2010	APUA
Cost of wastewater supply	US$	n/a	2010	APUA
Quality of waste treatment system	Rating from 1 – 5[55]	1	2010	APUA

The pricing of water for households is meant to recover the cost of maintenance of the water-borne system only. The cost of actually obtaining water from the water table is government-subsidised. Industrial rates for water use exceed those for household and agricultural use, providing greater incentives for conservation in industry. Cost recovery has been one of the policy issues under discussion in terms of the way forward for the pricing of water.

The public sector intends to provide universal coverage of sanitation,[56] but at the moment there is no centralised wastewater treatment available, and St. Johns and its environs are in desperate

[55] The criteria for the ratings are as follows:

- 5: Public waste treatment facilities provide 1st, 2nd and 3rd stage biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable.
- 4: Facilities provide 1st, 2nd and 3rd stage biological and chemical wastewater treatment, but tap water is not potable.
- 3: Facilities provide 1st and 2nd stage treatment. Wastewater smells.
- 2: Facilities provide 1st stage treatment. Wastewater is harmful to the environment.
- 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.

[56] Natural Resource Aspects of Sustainable Development in Antigua and Barbuda,

need of sewage treatment facilities. While some hotels recycle wastewater on a small scale, there is significant room for investment in sanitation services in the country.

All things considered, Antigua's water supply appears to have increased in reliability over the years. In fact, the APUA reports no outages in normal times, although during periods of drought hours of supply can be cut by 6-12 hours.[57]

www.un.org/esa/agenda21/natlinfo/countr/antigua/natur.htm#freshw.

[57] One hotel developer reported that water supply was "not reliable" this causing him to install a number of cisterns at his development.

7.1.3 Telecommunications

In the field of telecommunications Antigua and Barbuda stands out by virtue of the fact that is not a member of ECTEL and does not come under its regulatory and technical support umbrella. One of the reasons for Antigua and Barbuda staying outside of the liberalisation thrust that characterised the industry in the other islands was that the local telephone service provider was owned by the Government and run by the APUA, which provided overseas service through Cable & Wireless. The results of this approach have had advantages and disadvantages for the country's telecommunications sector.

Certainly it has not meant that advancement in the industry has been held back in any way as Antigua evinces all of the technology in terms of telecommunications as the ECTEL countries. Indeed, the country appears to have truly "embraced information and communications technology as a key contributor to the development of the country".[58]

The Government's aim to "build an information-enabled, globally-connected, and knowledge-based Society" is close to being realised and experts say that a sound ICT infrastructure has been created in the country. The existence of important e-businesses such as online offshore betting, as well as online offshore banking, both of which depend upon strong telecommunications infrastructure stands as proof of this assertion. Concomitant with the remarkable growth in telecommunications in the ECTEL countries, growth in Antigua and Barbuda's industry has been very high over the past decade.

The telecommunications landscape consists of the APUA Telephones Division, the nationally owned telephone company, three cell phone carriers and three internet service providers. The APUA provides the local telephone service and an overseas service through LIME. Antigua & Barbuda has high landline penetration rates, and the APUA says that it also has "one of the highest call completion rates in the Caribbean".[59] Data on the local telecoms industry are presented in the table below.

Table 48: Analytical Framework – Telecommunications

Indicator	Units	Data		Year	Source
Broadband cost		APUA	LIME	2010	APUA, LIME website
	US$/month (download speed: 1 Mb/second)	$72.22	$47.78		
	US$/month (download speed: 2 Mb/second)	$109.26	$62.59	2010	APUA, LIME website
	US$/month (download speed: 4 Mb/second)	Variable prices	Not provided	2010	APUA, LIME website
Size of external fibre optic connection	Gigabits/second	2.8 Gb/second		2010	LIME
Internet subscribers	Number/1,000 people	188.5		2010	APUA, LIME, ACT Online

[58] Antigua and Barbuda Information and Communications Technologies Draft Policy, 2010.
[59] APUA website.

Indicator	Units	Data	Year	Source
Landline cost	US$/month	Residential: $11.11/month Commercial: $22.22/month	2010	APUA
Landline cost of local call	US$/3 minutes	$0.06	2010	APUA
Landline cost of call to mainland US landline	US$/3 minutes	$2.78	2010	LIME website
Landline penetration	Mainlines/1,000 people	371	2010	APUA
Mobile phone cost	US$/month	$50 6,000 minutes (on-net)	2010	LIME website
Mobile phone penetration	Mobiles/1,000 people	1,555.3	2010	APUA, LIME, Digicel

The APUA indicated it had 6,000 internet subscribers in 2010 and when this figure is added to the subscribers using other service providers, the internet penetration rate per 1,000 people is 188.5, well above the 62 given as the average for the Latin America and Caribbean region in 2008. Indeed data from the International Telecommunications Union suggest that the number of internet users, as distinct from subscribers, was 65,000 in 2010 or nearly 75% of the population.

Of particular interest for purposes of this review is the wide array of bandwidth and other broadband services on offer in Antigua and Barbuda. As the table indicates, broadband speeds from 4 Mb/second are available from the APUA at a range of prices. The APUA provides a number of packages with a variety of options, including dedicated point-to-point circuitry and ADSL LAN-to-LAN connections. There would appear to be a sufficient range of services and speeds to suit a variety of business needs.

The APUA internet packages are significantly more expensive than the equivalent packages offered by LIME. Another company, ACT Online, offers 1 Mb/second broadband at U$55.56 per month; 2 Mb/second at US$111.74 and 4 Mb/second at US$211.85 per month. Although the activation fee of US$54.81 is lower than the US$92.59 charged by LIME, the monthly charges are higher. The reasons for these disparities are not completely clear, but it may have something to do with the fact that LIME likely controls access to the country's external fibre optic connection.

Mobile phone penetration has been commensurate with the growth in internet usage. In terms of total mobile penetration by the three providers, LIME, Digicel and the APUA, the total is 134,925, making for a penetration ratio of 155.7%.

As indicated above, Antigua and Barbuda is not a part of the ECTEL network and it does not have a national telecommunications regulatory authority as the ECTEL member states do. The regulatory function is carried out by the Telecommunications Office of the Ministry of Information, Broadcasting and Telecommunications, the same office that drives the Government's telecommunications thrust. Unsurprisingly, the regulatory function is not as efficient or comprehensive as in the other countries under review. A corollary of this is that data availability on the telecommunications industry in Antigua is more difficult to come by and is not available from any single source.

However, it is evident that considerable progress has been made in Antigua and Barbuda towards higher internet and mobile penetration but also towards incorporating persons at all levels and strata of the society in access to telecoms technology. Although cost remains an issue, the progress made has gone some way to delivering on the Government's vision of "every citizen of Antigua and Barbuda having access to ICT services and latest modern communications technology at affordable prices", and for telecommunications to catalyse economic growth and development in the national economy.

As was the case with St. Kitts, interviews with business persons suggested that telecommunications is not at all a constraint on the country's ability to attract domestic or foreign direct investment. Public and private sector persons all gave a rating of 4 out of 5 to the quality of the country's internet services, i.e. "service is usually operational; almost never down or disconnected". The same rating was generally given to the quality of telephone services, (landline and mobile), i.e. "connections are usually clear, calls are almost never dropped, and lines are never down". Length of time to install landline service was normally one to two days.

Going forward, Antigua appears to have a strong commitment to continue the upward trajectory of the telecommunications sector. Access levels are increasing but work needs to be done on ensuring affordable broadband, adoption of a suite of e-legislation and a stronger focus on human capacity development. All of these would serve to improve the country's investment climates and increase its competitive edge.

7.1.4 Transportation: Air

The major airport in Antigua is far and away the largest and busiest of the member countries of the OECS. The V. C. Bird International Airport serves four European cities and seven North American ones, in addition to 22 Caribbean cities[60]. During the first 10 months of 2010, the airport served a total of 712,260 passengers, an average of 71,266 per month. 302,042 embarked, 304,810 disembarked and 105,408 were in transit. The airport is managed by the Antigua and Barbuda Airports Authority (ABAA), a statutory corporation established by the Antigua and Barbuda Airport Authority Act.

The airport is about to undergo a major upgrade, the result of which will be, according to the authorities, a "new airport". As the state of the infrastructure is subject to significant change, the authorities did not provide a great deal of information on the current status of the facilities. The data available is shown in the table below.

Table 49: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	3	2010	CIA World Factbook
Number of direct flights to US/Europe	Number of flights/day	US: 2; (3 on Wednesday, Thursday & Saturday; 4 on Sunday) Europe: 1 Canada: 6/week	2010	ABAA
Airports with paved runways	Number	2	2010	CIA World Factbook
Number of paved runways by size	Under 914 metres	1	2010	CIA World Factbook
	914 – 1,523 metres	0	2010	
	1,524 – 2,437 metres	0	2010	
	2,438 – 3,047 metres	1	2010	
	Over 3,047 metres	0	2010	
Passenger load capacity	Load factor	Unavailable[61]	2010	ABAA
Freight load capacity	Load factor	Unavailable	2010	ABAA
Export handling charges	US$/kg for warehouse pickup to port clearance			
Time to export	Days from packing at warehouse to departure from port	5-7 days (to get documents)	2010	Tropical Shipping Ltd.
Export shipping costs	US$/kg from main port to Miami	$2.36-$1.81/kg Minimum: $65.00	2010	Amerijet

[60] The VCBIA is the home of the Caribbean airline LIAT, and also serves as an important hub for inter-island travel.

[61] It does not appear that the airport authorities in a number of the countries under review collect information on a routine or regular basis on passenger load capacity, (the ratio of revenue passenger miles to available seat miles of a particular flight); nor on freight load capacity.

Indicator	Units	Data	Year	Source
Export delivery time	Days from departure from main port to arrival in Miami	1 day	2010	Fedex/ Parcel Plus
Import handling charges	US$/kg for port clearance to delivery at warehouse			
Time to import	Days from arrival at port to delivery at warehouse			
Import shipping costs	US$/kg from Miami to main port	$2.36-$1.81/kg Minimum: $65.00	2010	Amerijet
Import delivery time	Days from departure from Miami to arrival	1 day	2010	Fedex/ Parcel Plus

Cargo uplift has been the highest for the Eastern Caribbean and has been increasing over the years. Inward cargo uplift was 2,661,218 kg in 2006 and increased to 2,738,620 in 2008. Outward uplift increased dramatically to 4,004,909 kg in 2008 but the authorities could not confirm whether there were unusual factors at play in this increase.

As in most of the OECS countries, Amerijet is the major dedicated air cargo operator in Antigua. In addition to Amerijet, air cargo services are provided by a number of freight forwarders including Fedex/Parcel Plus, which provides same-day export and import service from and to Miami.

7.1.5 Transportation: Sea

The main port in Antigua is the Deep Water Harbour (Port of St. John), which was constructed in 1968 and opened to commercial traffic in 1969. Antigua has one of the best natural harbours in the region, and has capitalised on this by investing over US$8.15 million to expand and modernise its facilities.[62] The renovation was about nine years ago and resulted in new berthing facilities that can now accommodate four of the world's largest and most modern cruise liners at the same time. The money was used to dredge St. John's harbour to a depth of 35 feet, widen the channel into the harbour and increase the size of the turning circle so that ships can manoeuvre more easily. The Deep Water Harbour handles all the cargo that is imported into Antigua and is now 300 feet wide, 8,000 feet in length and has a turning circle 1,300 feet in diameter.

The shipping data in the table below were provided by Tropical Shipping, a major shipping company operating in the islands that also provided the data on St Kitts. The data suggest that costs of importing and exporting are higher in Antigua and the processes involved are generally more inefficient. Tropical made the point that costs were generally comparable across the Caribbean countries but that port and customs processes tended to be less efficient in counties like Antigua and Dominica.

Table 50: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/TEU for warehouse pickup to port clearance			
Time to export	Days from packing at warehouse to departure from port			
Export shipping costs (TEU)	US$/TEU from main port to Miami	$3,000/TEU	2010	Tropical Shipping Ltd.
Export delivery time	Days from departure from main port to arrival in Miami	9 days	2010	Tropical Shipping Ltd.
Import handling charges	US$/TEU for port clearance to delivery at warehouse	US$190.00-$370/TEU	2010	Tropical Shipping Ltd.
Time to import	Days from arrival at port to delivery at warehouse	1-30 days	2010	Tropical Shipping Ltd.
Import shipping costs (TEU)	US$/TEU from Miami to main port	20' – US$3500.00 40' – US$5700.00	2010	Tropical Shipping Ltd.
Import delivery time	Days from departure from Miami to arrival at main port	6 days	2010	Tropical Shipping Ltd.

[62] www.port.gov.ag/.

7.1.6 Transportation: Road

Antigua has had a rather good road network since colonial times, in part because of its generally flat terrain. Latest available figures indicate a road network of 906.7 km in length consisting of 713.5 km of major roads and 193.3 km of secondary roads. The total length of the paved road network is 205.2 km and 188.0 km of this is made up of paved major roads.[63]

Table 51: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	906.7 km	2008	State Property Office, Ministry of Works and Transportation
Density of road network	Length of road network/total land area	2.05 km of road/km^2	2008	State Property Office, Ministry of Works and Transportation, CIA World Factbook
Density of paved roads	Paved roads as a% of total road network	22.63%	2008	State Property Office, Ministry of Works and Transportation
Condition of road network	% of road network in poor condition	55%	2008	State Property Office, Ministry of Works and Transportation

Although reports indicate that the roads infrastructure has traditionally been quite good, the data in the table above suggest that the situation has changed. Less than ¼ of roads are paved and over half of the network is in poor condition. Certain types of investors, notably larger foreign investors in hotel developments will have the capability to develop their own access roads for their properties. However, a poor road network can have a limiting effect on the wider tourism industry and well as an overall dampening effect on the quality of the business environment. Based on the statistics available, it would appear that investment to improve the quality of the country's roads is required.

[63]The data in the text and the table are taken from a report submitted by The State Property Office at the Ministry of Works and Transportation in December, 2008.

7.2 Land

The situation regarding land availability for investment purposes is the same as it is in St Kitts. This information is not available from the Antigua & Barbuda Investment Authority (ABIA) or any other central source in Antigua. The staff of ABIA advised that land availability and cost are matters for negotiations involving attorneys and real estate agents. If a potential investor wanted such information ABIA would refer him or her to real estate agents operating in Antigua.

While there is no national land zoning plan in Antigua, certain areas have been allocated for industrial use. We were informed by the Town and Country and Country Planning Department that industrial lands were available at US$4.44-5.56 per square foot. Approximately 40 acres of such land had been built up into 35-40 industrial units, making for a total of 141,631 square feet of factory space. At the time of the fieldwork, these shells were occupied by 15 tenants. Land on outskirts of the capital city was available at $US14.81 per square foot and whatever land was still available in the city itself would cost about US$148.15 per square foot.

In terms of land for hotel/tourism development only privately held lands were available. One hotelier reported that he had purchased the land on which his development stood. This land cost approximately US$14 per square foot and approached US$7.00 per square foot as one moved further away from the beach. Price would generally depend on how desirable the area is and how predominantly touristic or non-touristic it is. The Property Valuation Office gave figures of US$11.11-$22.22 per square foot for such land and US$24.07 per square foot for land in gated communities.

From the ministry of Agriculture we learned that there was a total of 24,500 acres of land designated for agricultural purposes, with 5000 acres of this available for crop cultivation. Much of this land was owned by the Government and could be leased at US$3.70 – US$11.11 per acre.

7.3 Labour

Information on the labour market in Antigua was extremely limited. As in most of the countries under review there was no available data on underemployment. Even unemployment data is problematic; although it is officially given by the Labour Department as 8.4%, this is the figure that came out of the last census carried out in 2001 and so is quite dated.

In the absence of continuous labour force surveys, estimates put the unemployment rate at about 10%, although there was concern that this figure could soon be higher given the consequences of the collapse of the Stanford empire and the fact that the country is seeking to adjust to a very challenging fiscal and economic situation through reduced public expenditure.

Antigua and Barbuda's statutory minimum wage is US$2.78 per hour. The Labour Code, which is under revision, sets out the country's labour laws and is regarded as one of the most labour friendly pieces of the legislation in the region.

In the absence of centralised labour market information, during interviews with private sector stakeholders, they were asked to provide an indication of wages paid at entry, supervisory and higher management levels, the results of which are shown in the table below. These represent wages paid in hotel/resorts.

Table 52: Wage Data – Antigua[64]

Employment Level	Daily Wage (US$)
Entry-level wages	$37.04
Supervisory level	$55.56
Second-tier management	$111.11

Within the hotel industry, feedback indicated that labour was generally available for both the construction and the operational phases of hotel development. In terms of trainability, there was some reported success in moulding the work force into a team with commitment and *esprit de corps*. However labour turnover was reported to be high and the labour availability pool was also affected by the target income phenomenon observed in other countries. The Labour Department indicated that an estimated two-thirds of the population have had secondary school education and beyond.

As to the availability of the right kinds of workers, all three of the companies interviewed reported that there was a sufficient pool of workers available and they did not experience a great deal of difficulty in recruiting workers, particularly due to the trainability when the right skills were not readily available. On a scale of 1-5, with 5 equating to an employer's market, they rated the labour availability as 4.

[64] The data in this table need to be interpreted with caution. They are based on the responses from those few companies that were interviewed and may not typify the national situation.

7.4 Capital

As in St. Kitts there is little reliance by foreign investors in Antigua on local financing, which is of greater importance to regional or domestic investors. A potentially important source of funding is the Antigua & Barbuda Development Bank (ABDB) that was established in 1971 as a statutory development finance institution and commenced operations in 1974. It is mandated to provide medium and long-term development financing to the productive sectors, but as with other such institutions in the countries studied, over time it has diversified into mortgages, student loans and micro finance.

The function of the ABDB is" to mobilize and provide finance for and promote and facilitate the expansion and strengthening of the economic development of the twin-island state".[65] In its over 35 years of operations, ABDB has made cumulative disbursements of around US$46.3 million through loans to various industries. This equates to an average of about US$1.37 million per year, which does not suggest a huge impact on the country's development. It appears that most of the Bank's funding has gone into low and middle income housing and student loans. However, the ABDB can play an important role in channelling funding from international financial institutions into the economy through vehicles such as loans, grants and lines of credit. It has worked with the Caribbean Development Bank, the European Economic Community through the European Development Fund and the European Investment Bank, Norway's Guarantee Institute for Export Credit as well as other private sector investors and companies. Given the planned fiscal austerity measures, it seems likely that the ABDB will have less of its own funds for lending, so building on these relationships could provide a means of tapping into sources of additional financing.

Despite its mandate, there was concern in Antigua, including from the ABIA, that the cost of funds from the ABDB at 10-11% was too high and did not offer a significant savings over local commercial bank rates.

As for the other member countries, average prime commercial bank lending rates in Antigua are available from the Eastern Caribbean Central Bank and ranged from 9-10% in 2010. These rates form the basis of negotiations between lender and borrower, with the eventual decision on the specific rate in particular cases being determined by level of risk, term of the loan, etc. A typical rate for business would be about 2% above prime, not far above the rates available through the ABDB.

[65] Information in this paragraph has been taken from the Antigua & Barbuda Development Bank's website, www.abdbank.com.

8 Findings: St. Lucia

8.1 Infrastructure

8.1.1 Power

St. Lucia Electricity Services Limited (LUCELEC) is among the larger and more efficient power utilities of the countries covered in this study. It seems very well run, with qualified and competent staff and management and a competent and multi-skilled Board of Directors. LUCELEC is the sole commercial generator, transmitter, distributor and seller of electrical energy in the country. The company serves about 60,000 residential, commercial and industrial customers. Indicators pertaining the supply of electricity in the country are shown below.

Table 53: Analytical Framework – Power

Measure	Units	Data	Year	Source
Installed capacity	MW	77.2 MW	2009	LUCELEC
Delivered capacity or firm capacity	MW	76 MW	2010	LUCELEC
Peak demand	MW	59.2 MW	2010	LUCELEC
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	$656.63	2010	CARILEC Tariff Survey 2010
Electric power consumption	MWh per capita	1.91 MWh per capita[66]	2010	LUCELEC
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)	10.37	2010	LUCELEC
Average number of brownouts	Number per month	Unavailable	2010	LUCELEC
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)	7.99 hours	2010	LUCELEC
Time to obtain electrical connection	Days	1 day	2010	LUCELEC

The main power station contains nine diesel generating units that are well maintained to ensure continued performance and minimal down time. As the table shows, the average number of hours of blackouts experienced by a customer during 2010 was 7.99 hours, which work outs to an average duration of just 46 minutes each of the 10.37 times blackouts were experienced. In a Private Sector Baseline Study of St. Lucia dated August 2009, 13% of 102 firms surveyed reported that electricity was a major constraint on doing business in St. Lucia; and the average number of power outages per month was reported as 1.75. Corresponding figures for Latin

[66] Derived using 330,729.161 MWh, the consumption estimate for Dec 2010 and a population estimate of 173,500 at the end of 2009.

America and the Caribbean are 14% and 3.0 respectively. The number of outages in 2010 dropped to 0.86 per month, so performance in this regard has pulled even further ahead of the regional average.

The company has an installed capacity of 77.2 MW and its modern, computerised Cu-de-Sac Power Station, which, with its nine generators, can comfortably meet peak demand of 59.2 MW. Transmission voltage was 66kV in 2008, across 73.32 miles of transmission lines. Distribution voltage is 11kV across 2,566 miles of distribution lines. Customers are supplied at 240V single phase, and 415V three Phase.

LUCELEC claims that its prices are among the lowest in the Caribbean and are only higher than Trinidad & Tobago and Barbados, which have the advantages of subsidised fuel, population density and more hospitable terrain for transmission. CARILEC's figures do not support this claim as Belize is consistently cheaper than St. Lucia across a range of domestic, commercial and industrial consumption bands. The difference is made even more pronounced by the fact that St. Lucia levies a fuel surcharge of US0.04/kWh whereas Belize does not have a fuel surcharge of any kind. However, in terms of advantages, Belize does have access to hydropower. And while St. Kitts & Nevis did offer lower rates in most consumption categories than St. Lucia, these are set to increase significantly, which will make LUCELEC's prices the lowest among the OECS countries covered by the study. It must be pointed out that care must be exercised in comparing electricity rates across the region as factors such as government subsidies can have a bearing on the rates charged.

Despite offering comparatively low prices, the company is in a strong position financially. Unaudited results for the period up to mid-2010 indicate net profits after taxation of US$10.22 million, up from US8.89 million over the previous 12 months. Overall, results were said to be slightly better than expectations but the company was anticipating a continuation of this trend through to the end of the year.

Unit sales growth registered an increase of 8.0% over the same period last year with continued growth in the domestic sector (8.5%), the commercial sector (7.6%) and the hotel sector (11.3%). These increases primarily reflect customer base growth and increased consumption. Annual load growth is expected at an average of 2.3% per annum over the next five years.

As is the case in the other islands St. Lucia is looking in the direction of renewable energy and is keen to "introduce renewable energy sources into its power mix, reduce the dependence on fossil fuels, and minimise the impact of fuel price hikes on electricity rates". It is targeting wind and solar and is keen for geothermal exploration activity to gain momentum.

The industry is largely unregulated, although the Government has had plans to establish an independent regulatory body, presumably along the lines of Dominica's Independent Regulatory Commission. Plans are for this body to be self-financed through license and other service fees.

8.1.2 Water and Sanitation

Perhaps the most significant feature of water and sanitation services in St. Lucia is the fact that the government-owned utility has been a loss making institution. The Water and Sewerage Company (WASCO) has been characterised over the years by declining revenue, increases in operating expenses and increases in loan interest and financing costs. The October 2010 Management Report showed a year-to-date net loss of US$3.22 million, higher than the forecasted loss of US$2.74 million. Data on the costs and availability of water and sanitation in St. Lucia are below:

Table 54: Analytical Framework – Water & Sanitation

Indicator	Units	Data				Year	Source
Cost of water supply	US$/ 1000 US gallons	Domestic	Commercial/ Industrial	Govt.		2010	WASCO
		1-3,000 gals: US$2.72/1,000 gals >3,000 gals: US$5.56/1,000 gals	US$7.41/ 1,000 gals	US$5.19/ 1,000 gals			
Average number of incidents of water shortages	Number/ month	Northern region: 4/month Southern region: 3/month				2010	WASCO
Average duration of water shortages	Hours	Northern region: 8 hours Southern region: 48 hours				2010	WASCO
Time to obtain water connection	Days	21 days Application / Inspection: 7 days Execution of connection: 14 days				2010	WASCO
Cost of wastewater supply	US$	Domestic	Commercial/ Industrial	Hotel	Govt.	2010	WASCO
		1-3,000 gals: US$2.02/ 1,000 gals >3,000 gals: US$3.70/ 1,000 gals	US$4.81/ 1,000 gals	US$5.41/ 1,000 gals	US$3.15/ 1,000 gals		
Quality of waste treatment system	Rating from 1 – 5[67]	Castries: 2 Rodney Bay: 2				2006	Water Management Plan for Drought Conditions

[67] The criteria for the ratings are as follows:

- 5: Public waste treatment facilities provide 1st, 2nd and 3rd stage biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable.
- 4: Facilities provide 1st, 2nd and 3rd stage biological and chemical wastewater treatment, but tap water is not potable.
- 3: Facilities provide 1st and 2nd stage treatment. Wastewater smells.
- 2: Facilities provide 1st stage treatment. Wastewater is harmful to the environment.
- 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.

With 4 incidents of water shortages per month, the northern region is slightly worse off than the southern, which experienced 3 incidents per month in 2010. However, the duration of shortages are 6 times as long in the south as they are in the north. As the capital city of Castries and the large majority of hotels, resorts and restaurants are in the north, it has accounted for much of economic growth in recent years and so it is preferable that this part of the country has shorter outages.

The difficulties with water supply were was exacerbated by passage of Hurricane Tomas in October 2010, which had an adverse effect on WASCO's operations and infrastructure and made it challenging for the company to deliver on its responsibilities to the population. There have been concerns in recent years about tourism development acting as a severe strain on the public utilities and water supply in particular. Addressing water supply issues will be difficult for WASCO as it is in a weak financial position, which diminishes its capacity to invest in infrastructure development. The current water tariffs have been in effect since February 2000 and if is not deemed appropriate that they be raised, then WASCO may require more direct assistance in coping with investment requirements.

WASCO also has responsibility for wastewater collection and treatment and there are has 2 sewerage systems in the country. [68] The first is a primary sewage collection and disposal system in Castries, which serves about 15% of the greater Castries population and covers the business area. The second is a sewerage system that includes collection, treatment and disposal and is located in Rodney Bay and serves primarily residential areas and hotels. As of 2006, the Rodney Bay treatment system was underutilized, running at 40% capacity. At that time the plant was serving a population of 3,000-4,000. Treated effluent from the system was discharged via an earth drain to a ravine that leads to the ocean on the east coast. There is also 1 sludge and septic treatment plant at Union.

The majority of residents and establishments in Saint Lucia utilise individual on-site systems (pit latrines, septic tanks and soakaways) for sewage treatment and disposal. Grey water is generally discharged to open drains and has the potential to spread disease since it contains fecal coliforms.

The very limited data that are available may be indicative of the challenges facing the wastewater component of WASCO's operations. What is known is that service quality has deteriorated; the number of blockages reported on public mains for the year to October 2010 increased from 46 to 52 over the corresponding period a year ago and the percentage of samples not meeting quality standards for fecal coliforms was 100% over each of the past two years. Again, there would seem to be significant room for investment in sewerage services and serious questions about WASCO's capability to take it on, particularly in the wake of the 2010 hurricane.

[68] The information in this paragraph and the one following is taken from the Water Management Plan for Drought Conditions, Government of St. Lucia, October 2006.

8.1.3 Telecommunications

St. Lucia is one of the five member states of ECTEL and provides the headquarters for the regional body. Thus the landscape can be expected to be broadly similar to that of St Kitts and the other members in terms of the extent of telecommunications liberalisation and technological advancements to date. As part of regional agreement a local National Telecommunications Regulatory Commission is charged with regulating the local industry.

St. Lucia experienced the same rapid expansion in the provision and use of mobile telephone services witnessed in the other countries and the contribution of the telecoms to economic growth was no less significant. Notably, when economic growth declined by 3.8% in 2009 in the wake of the global economic crisis, the contribution of the telecommunications sector to GDP is estimated to have increased from 11.3% in 2008 to 11.9% in 2009. This would be consistent with research findings that suggesting that "the nature of telecoms allows for the impact of the recession on the sector to be more limited than in other sectors as the need to communicate and the use of data remain instrumental regardless of the economic environment".[69]

As at March 2009, LIME was still the sole provider of fixed voice telephony, although Karib Cable was due to end that monopoly within a short period of time. Karib Cable has also begun to offer cable TV and broadband. Two companies offered public mobile services – LIME and Digicel. Details of the cost and penetration rates of telecoms services are given in the table below.

Table 55: Analytical Framework – Telecommunications

Indicator	Units	Data		Year	Source
Broadband cost	US$/month (download speed: 1 Mb/second)	LIME	Karib Cable[70]	2010	LIME, Karib Cable websites
		$29.26	$26.60		
	US$/month (download speed: 2 Mb/second)	$55.19	$50.17	2010	
	US$/month (download speed: 3 Mb/second)	$92.22	$83.83	2010	
	US$/month (download speed: 8 Mb/second	n/a	$168.01	2010	
Size of external fibre optic connection	Gigabits/second	20 Gb/second		2010	Antilles Crossing
Internet subscribers	Number/1,000 people	118.2		2010	ECTEL
Landline cost	US$/month	$9.78		2010	ECTEL
Landline cost of local call	US$/3 minutes	$0.08		2010	ECTEL

[69] From Mobile Marketer, referred to in ECTEL, Annual Telecommunications Sector Review 2008-2009, p. 38.

[70] Karib Cable provides packages with download speeds of 1.1, 2.2, 3.3 and 4.4 Mb/second. LIME provides packages with download speeds of 1, 2 and 3 Mb/second. In order to level out this difference, the Karib Cable prices have been adjusted proportionately downward to match the LIME download speeds. The 4.4 Mb/second price has been adjusted to 4 Mb/second for the sake of consistency, even though LIME does not provide a price in this category.

Indicator	Units	Data	Year	Source
Landline cost of call to mainland US landline	US$/3 minutes	$1.39	2010	ECTEL
Landline penetration	Number/1,000 people	215.9	2010	ECTEL
Mobile phone cost	US$/month (minimum of 2,400 minutes in plan)	$50.00 2,500 minutes (on-net) 2,500 SMS (on-net) 1Gb (on-net data)	2009	LIME
Mobile phone penetration	Number/1,000 people	1,142.4	2010	ECTEL

ECTEL reports that internet penetration in St. Lucia is held back in part by limited access to computers, although there have been a number of private and public initiatives to increase internet usage, including community access centres and internet cafes. Broadband internet rates are broadly on par with those available in other OECS countries, but are significantly more expensive than prevailing rates in the US and the UK. The market leader, LIME, has introduced an 8 MB ADSL package for residential consumers; although at the time of writing it was not clear that this service was available to residential consumers all over the island.

GPRS and EDGE technologies have been available in St. Lucia but ECTEL reports that while the market for these technologies is very underdeveloped it is expected to change radically with the introduction of more competitors, improved technologies and more affordable data compatible handsets.[71] As with the other ECTEL members, technological limitations make it difficult to determine the number of mobile internet users in St. Lucia and true mobile broadband through 3G networks is not yet available to users.[72]

The quality of both internet and telephone services were rated highly by members of the business community interviewed. They gave a rating of 4 out of 5 to these services, i.e. in the case of the former, "service is usually operational; almost never down or disconnected; and in the case of the latter, "connections are usually clear, calls are almost never dropped, and lines are almost never down". As in the other islands there was the suggestion that telecommunications is not at all a constraint on the country's ability to attract domestic or foreign direct investment.

One fairly new company, Antilles Crossing, provides "state-of-the-art submarine fibre optic network from…Barbados through St. Lucia and on to St. Croix in the U.S. Virgin Islands…to international gateways in Miami and New York City".[73] The 938 km affords 20 gigabits per second connectivity through indefeasible rights of use and lease arrangements to carriers and businesses.

[71] ECTEL, Annual Telecommunications Review, 2008-2009, p.44.
[72] Ibid, p.44.
[73] www.antillescrossing.com.

8.1.4 Transportation: Air

Hewanorra International Airport is the larger of St. Lucia's two airports. Located in the south of the island, 56 km from the capital city, Castries, it has one paved runway in use and another one that is not used. The runway is 2,743.2 metres long, 45.7 metres wide and has five aircraft stands. The airline schedule can vary from peak to low tourism season, but there are a minimum of 6 flights per day leaving Hewanorra for the US or Europe. The airport is served by American Airlines, Delta Airlines, Air Canada, US Airways, Virgin Atlantic and British Airways. In addition to these, airlines such as West Jet and Sunwing also provide service to and from Hewanorra.

The second, smaller airport is located in the north of the island, just off the capital city itself. George F. L. Charles Airport has a runway length of 1889.8 metres and a width of 45.7 metres and it has four aircraft stands. This airport captures mainly intra-Caribbean traffic and is served by LIAT Airlines as well as American Eagle out of Puerto Rico, which provides a connecting service to the US mainland.

Table 56: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	2	2010	SLASPA
Number of direct flights to US/Europe	Number of flights/day	6	2010	SLASPA
Airports with paved runways	Number	2	2010	SLASPA
Number of paved runways by size	Under 914 metres	0	2010	SLASPA
	914 – 1,523 metres	0	2010	
	1,524 – 2,437 metres	1	2010	
	2,438 – 3,047 metres	1	2010	
	Over 3,047 metres	0	2010	
Passenger load capacity	Load factor			
Freight load capacity	Load factor			
Export handling charges	US$/kg for warehouse pickup to port clearance			
Time to export	Days from packing at warehouse to departure from port			
Export shipping costs	US$/kg from main port to Miami			
Export delivery time	Days from departure from main port to arrival in Miami			
Import handling charges	US$/kg for port clearance to delivery at warehouse			
Time to import	Days from arrival at port to delivery at warehouse			
Import shipping costs	US$/kg from Miami to main port			
Import delivery time	Days from departure from Miami to arrival			

Saint Lucia's air and sea ports are managed by the St. Lucia Air and Sea Ports Authority (SLASPA), which is responsible for running the island's two principal seaports, Castries and Vieux Fort, the 2 airports and the smaller points of entry: Soufriere, Marigot and Rodney Bay Marina. SLASPA was established by an Act of Parliament in 1983 and was created out of the merger of the St. Lucia Ports Authority with the Airports Division of the Ministry of Communications and Works.

The organisation is managed by a well-qualified team headed by a General Manager who reports to a Council appointed by the Government. Its mandate is defined as the provision of coordinated and integrated systems of airports and seaports.

That SLASPA is among the best-organised port management authority of the countries studied, as evidenced in the body of statistics that it puts out on port operations. Latest available data on airport activity include:[74]

- Total aircraft movements at Hewanorra have been increasing over the years – there was a 26% increase between 2009 and 2010, from 10,075 to 12,741.
- Passenger traffic increased steadily over the years – from 310,607 in 2003 to 552,097 in 2010, an increase of 77.7%.
- The amount of cargo handled at Hewanorra peaked in 2003 at 2,636,285 kg and in ensuing years has struggled to reach that level again – in fact between 2003 and 2010 there was a decline of 34.4%.

The corresponding figures for the other airport, GFL Charles, show activity moving in the opposite direction:

- Aircraft movements numbered 32,778 in 2003 and 24,142 in 2010, a decrease of 26.3%.
- Passenger traffic fell by an even greater margin over the period, declining by 44.0%.
- Cargo movements just about held steady over the years at around 1,294,284 kg.

Taken together, the two airports between them handled 826,145 passengers in 2009 and this grew to 920,660 in 2010, an increase of 11.4%; total cargo handled was 2,805,693 kg in 2009, rising to 3,022,726 kg in 2010 an increase of 7.7%. This is despite the dip in tourist arrivals in 2009 to 278,491, a decrease of 5.8%.

Along with Antigua & Barbuda, St. Lucia has a generally better developed air transportation infrastructure than the other OECS countries in the study, particularly in terms of direct connections to key international tourism markets. Although tourism activity has declined in recent years, it still had a higher number of tourist arrivals than any of the countries in the study.[75] The trend of passenger growth at Hewanorra is expected to continue through 2015, when passenger traffic is predicted to exceed 600,000. [76] Along with the upward passenger trend, changes in the industry such as safety and security requirements, passenger profiles, behaviour patterns, demands and satisfaction levels have led to an ambitious redevelopment

[74] SLASPA, Statistical Digest, 2009/2010.
[75] Caribbean Tourism Organisation Country Statistics.
[76] This information and the information that follows on the Hewanorra International Airport redevelopment is taken from the SLASPA website, http://www.slaspa.com/10jun/Voice%20hia%20project%20-%20advertorial(21x16)v.pdf.

programme being planned for Hewanorra International. The main objective of the work is to cater to future demand and highlights of the planned facility include:

1. Increased counter areas and Common User Terminal Equipment for faster check-in;
2. Increased emigration and immigration agent positions.
3. Six-lane passenger security checkpoints.
4. Gate hold room with increased seating capacity.
5. High-end executive clubs and VIP Lounges.
6. Food court with wider variety of eating options.
7. Improved customs Inspection area.
8. Improved baggage claim retrieval area.
9. Redesigned heating, ventilation and air-conditioning and refrigeration systems for an energy efficient facility.
10. Modern control tower featuring a full display of equipment for both approach and aerodrome control allowing for more efficient management of air space and parking positions.
11. An increase in aircraft apron parking positions from 5 to 8 in Phase 1 with 1 apron position capable of accommodating the Airbus A380, all of them connected to the terminal via jet bridges.
12. Hubbing facilities for both passengers and cargo that is consistent with the findings of SLASPA's market research.

8.1.5 Transportation: Sea

St. Lucia's main port is at Castries, and there is a smaller one at Vieux Fort in the south of the island. Port Castries has 6 berths for general cargo vessels ranging in length from 200 to 720 feet, as well as 3 cruise ship berths. Port Vieux Fort has a pier that can accommodate vessels on either side as well as a container berth.[77] Data on the time and cost of shipping by sea in St. Lucia are presented in the table below.

Table 57: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/TEU for warehouse pickup to port clearance	Lift-on charge is US$260.00	2010	Tropical Shipping Ltd.
Time to export	Days from packing at warehouse to departure from port	11 days	2010	Tropical Shipping Ltd.
Export shipping costs (TEU)	US$/TEU from main port to Miami	Freight rates differ depending on cargo	2010	Tropical Shipping Ltd.
Export delivery time	Days from departure from main port to arrival in Miami	7 days	2010	Tropical Shipping Ltd.
Import handling charges	US$/TEU for port clearance to delivery at warehouse	$480/TEU	2010	Tropical Shipping Ltd.
Time to import	Days from arrival at port to delivery at warehouse	5 days	2010	Tropical Shipping Ltd.
Import shipping costs (TEU)	US$/TEU from Miami to main port	Confidential	2010	Tropical Shipping Ltd.
Import delivery time	Days from departure from Miami to arrival at main port	5 days	2010	Tropical Shipping Ltd.

Container throughput in 2010 at Port Castries was 30,648 TEU, up from 24,956 in 2004, an increase over the six-year period of 22.8%. This equated to a total tonnage in 2010 of 363,934 short tons, representing 4.5% growth in weight terms over the preceding year.

At Port Vieux Fort total general cargo movements were 145,744 tons in 2010 compared with 132,833 tons in 2009, growth of just under 10%. Container throughput rose from 21,756 TEU in 2009 to 23,831 TEU in 2010. This growth in cargo movement runs contrary to the trend for contraction seen in other countries studied and suggests some degree of resilience in St. Lucia's shipping industry to the results of the economic downturn.

Exporting to the US takes 11 days from packing at warehouse to departure from the port and it takes up to 7 days from departure from St. Lucia to arrival at Miami. Import delivery time from Miami to St. Lucia is about 5 days. Exporting a 20 foot container to the US would cost US$260.00 in addition to freight which would vary depending on the nature of the cargo. Surprisingly, the cost of importing a container into St. Lucia was not made available as this information was deemed to be confidential.

[77] http://www.slaspa.com/s_facilities.php.

8.1.6 Transportation: Road

Hurricane Tomas struck St. Lucia on 31st October 2010 with devastating effect. In the words of the Prime Minister:

> There was significant damage to the agriculture sector, road infrastructure, and the utilities sector. Damage to the country's physical infrastructure meant that road networks were severely compromised, rendering many of the major roads impassable for days, disconnecting the North from the East, South and West of the island. Most road links which serve as sole access to rural communities were damaged and some were even washed away.[78]

There is a very strong case to be made for a serious upgrade of the country's road network. In particular the country needs roads with adequate supporting drainage capable of withstanding a certain volume and degree of water pressure typical of hurricane conditions. "A well-built road network would enhance the speed of recovery from disasters, help with the mobilization of emergency personnel and resources as well as the distribution of essential supplies in times of disaster among other social and economic benefits".[79] Data on the current state of the roads infrastructure are provided below

Table 58: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	1,000 km (estimated)	2010	Ministry of Works
Density of road network	Length of road network/total land area	1.62 km/km^2	2010	Ministry of Works
Density of paved roads	Paved roads as a% of total road network	57.9%	2010	Ministry of Works
Condition of road network	% of road network in poor condition			

Information available from the Ministry of Works indicates that the total road network is just over 1,000 km of which the primary, secondary and tertiary networks account for 686 km, broken down as follows:

1. 137 km of primary roads, all paved, mainly consisting of the Castries/Gros Islet Highway, East and West Coast Highways;
2. 119 km of secondary roads, all paved; and
3. 430 km of tertiary roads, 75% of which are paved.

[78] November 2010 post-hurricane address by Hon. Stephenson King, Prime Minister of St. Lucia. It did not prove possible to meet with the relevant government personnel for a discussion of the country's road profile. The department has been under severe pressure in the wake of the passage of Hurricane Tomas that struck the island in October 2010. Promised information has not been forthcoming.

[79] "From Vulnerability, to Resilience - Part 2: The Development of Saint Lucia's Road Network", in the Voice Newspaper, 8th January 2011.

Saint Lucia's road maintenance capacity has greatly improved over the last two decades. The country has benefited from various road maintenance and rehabilitation loans from the Caribbean Development Bank, the Organisation of Petroleum Exporting Countries, the Kuwait Fund for Arab Economic Development, The Agence Française de Développement and the World Bank. These loans have not only focused on infrastructure development, but also on institutional strengthening of the Ministry with responsibility for road construction and maintenance. Although the standard of construction and condition of roads varies widely throughout the country, these interventions have helped in reducing significantly the country's road maintenance backlog. Nevertheless the authorities believe that too little has been spent on road maintenance in recent years. Reports indicate that available funds for recurrent expenditure have been targeted first to the primary roads and then to the secondary road network and these have at least received some maintenance. However, the tertiary road network has received minimal maintenance with the result that a considerable backlog of rehabilitation needs has built up.

The Government has accorded a high priority to the completion and efficient operation of its primary road network which links the north, central and southern regions of the country. This is in recognition of the fact that such a network is critical in facilitating the movement of goods and services into and out of the country and thus in supporting development in agriculture and tourism. However, the development of a network of good quality alternative roads to key towns and economic centres in the country is one of the major challenges facing the country going forward. This was a challenge prior to Hurricane Tomas and has been made more difficult in the wake of the damage it inflicted on the road network. The financial implications are enormous for a country of St. Lucia's resources, but the room, and need, for investment exists.

8.2 Land

More so than some of the other countries in this study, St. Lucia appears to have made progress with the development of land use plans. These plans cover the areas of Vieux Fort and Dennery in the south of the island and are reflective of the National Development Corporation's mission to assist the development of the country through commercial, agricultural, industrial, residential and tourism investments. The land use plan for Vieux Fort outlines and highlights the Corporation's land development strategy for the period 2009 – 2014. These plans will place the location of further industry and tourism development on a sounder footing characterised by economic considerations and other specific criteria.

The National Development Corporation (NDC) has long had the responsibility to manage the country's industrial sites, mainly in the Vieux Fort area, and in fact much of its institutional subsistence derives from rental income from factory shells. The NDC owns 41 factory shells in seven industrial estates, which house a variety of business interests of both a commercial and social nature, and has been working on improving the ambience of these estates. The data in the table below relating to availability of industrial sites are based on the sites under the NDC's control.

Table 59: Analytical Framework – Land

Measure	Units	Data	Year	Source
Stock of commercial sites	Total square metres			
Vacancy rates of commercial sites	% unoccupied			
Cost of renting commercial sites	US$ per square metre/month			
Stock of industrial sites	Total square metres	35,087.41 m^2	2010	NDC
Vacancy rates of industrial sites	% unoccupied	31.7%	2010	NDC
Cost of renting industrial sites	US$ per square metre/month	US$ 0.44 per m^2/month	2010	NDC
Stock of freezones sites	Total square metres	9,140 m^2	2010	NDC
Vacancy rates of freezone sites	% unoccupied	45%	2010	NDC
Cost of renting freezone sites	US$ per square metre/month	US$ 0.44 per m^2/month	2010	NDC
Length of beaches	Total kilometres			
Cost of purchasing beachfront land	US$/square metre	US$18.52-$37.04 per m^2	2010	Private sector stakeholder
Cost of leasing beachfront land	US$/square metre/year			
Accommodation stock	Total rooms	5,396	2009	Caribbean Tourism Organisation
Accommodation occupancy rates	%	61.6%	2009	Caribbean Tourism Organisation
Amount of arable land	% of total land area	29.03%	2005	CIA World Factbook

In terms of the ready availability of industrial land, including freezone sites, St. Lucia appears better positioned than the other Eastern Caribbean countries to accommodate new

investments, both domestic and foreign. The NDC has considerable experience in managing and outfitting these sites and has been quite successful at doing this.

In terms of the cost of land for purposes of the hotel/tourism industry, information was provided by one hotelier indicating that land in the very desirable north of the island would cost anywhere from US$18.52-$37.04 per m^2.

8.3 Labour

As in other areas, information on the labour market in St. Lucia was rather more easily available than in other islands. St. Lucia carried out an earnings and hours of work survey that was published in 2006, which contains information on average earnings and hours of work for salaried employees by major occupational groups that were applicable during the year.

Data for the manufacturing and hotels and restaurants sectors have been examined. The information is very detailed – the report identifies 25 categories of workers ranging from chief executive officer and general manager to messenger and mining and construction worker. This information has been distilled into the following table, which identifies five categories of workers and provides information on the salaries that were applicable to these categories in 2006.

Table 60: Average Normal Gross Monthly Earnings for Men[80]

Title	Monthly Earnings
General manager/ CEO/business professional	US$1,296 – US$2,742
Department manager/computer professional/science professional	US$922 – US$1,111
Administrative professional/secretary/clerk/driver	US$556 – US$689
Machine mechanic/fitter/machine operator	US$491 – US$852
Mining and construction labourers	US$296

It is to be noted that the data refer to salaries of men, not women, but the data should be interpreted with caution. While there may have been the presumption that women's salaries may have been somewhat lower, the survey threw up some surprising results. In a number of cases, such as positions like shop sales persons and demonstrators, the quoted salary for women is significantly higher. It appears that some of the salaries in the survey relate to particular enterprises and thus are perhaps not representative of a typical or average monthly salary for the categories identified.

To round out the results of the survey, some key labour market indicators and the data proved by private sector stakeholders during the fieldwork are presented in the following table.

Table 61: Labour Market Data – St. Lucia (US$)[81]

Indicator	Data	Data
Entry-level wages	$1.67 - $4.26/hour	$1.85/hour
Supervisory level wages	$481 - $926/month	$1,111/month
Second-tier management wages	$926 - $3,704/month	$1,852/month
Manager wages	$2,963 - $4,444/month	Not available
% of unionised workers	0	23%
Average worker turnover	15 - 20%	
Average weekly working hours	40 - 50 hours	

Two business executives reported that their work force was disciplined, showed strong commitment and that they invested in on-the-job training and the fostering of good work and

[80] St. Lucia Earnings and Hours of Work Report, 2006.

[81] As elsewhere, the data in this table may not typify the national situation as they have been provided by the few companies with whom it was possible to speak.

labour relations. They estimated the rate of unemployment as being in the region of 20%, which might suggest labour availability, except that they also reported difficulty in attracting reasonably skilled workers. In some cases, particularly in the hotel/restaurant industry, skilled workers would tend to gravitate easily towards higher paying establishments. In terms then of the availability of skilled workers, on a scale of 1 to 5, the companies gave a rating of 3, i.e. “the company has to search hard, but eventually finds the right personnel”.

8.4 Capital

The Bank of Saint Lucia is the country's leading banking institution. Its services include a corporate and development banking function serving everything from small business to large development projects. The bank's development banking services are geared towards facilitating and promoting development in the productive sectors of the economy, including agriculture, agro-processing, industrial and tourism development. The development banking function is now a part of the Corporate and Development Banking Unit. Thus development bank rates of interest are not separately available. However, the Bank claims to be able to provide more flexible loan terms for development loans, and interest rates and repayment periods are usually more accommodating than commercial loans.

Once again the Eastern Caribbean Central Bank has been the source for a range of applicable rates, and the prime rate for St. Lucia ranges from 9.5-10%. Bankers can be reluctant to quote applicable rates in a vacuum, i.e. absent a specific lending proposal for consideration as a basis for a specific negotiated rate. The practice is for the banks to offer rates that are a few percentage points above prime, hence the recurring complaint that the commercial banks are not development friendly in terms of their lending costs.

Depending on the size and attractiveness of the project the banks have the capacity, sometimes through consortia, to package financing deals for large projects at rates that the developers may find attractive.

The countries under review have tended to establish development banks precisely to compensate for the high cost of regular commercial banking credit. In many cases, these development banks have tended to offer credit that is substantially lower than that offered by the commercial banks. However, they have tended to be rather limited in the quantity of resources they have been able to offer and this limits their capacity to assist the number of businesses and individuals that face difficulties in accessing finance from the commercial banks, or cannot borrow at their rates.

9 Findings: Dominica

9.1 Infrastructure

9.1.1 Power

Dominica Electricity Services Limited (DOMLEC) has been the sole producer of electricity in Dominica for more than 50 years. The company is involved in the generation, transmission, distribution and sale of electricity. Since 2004, DOMLEC has been jointly owned by WRB Enterprises (71% stake) and Dominica Social Security (20% holding), with the remaining shares owned by private shareholders. WRB is a Florida-based company that also owns and operates the public electric utilities of Grenada and The Turks & Caicos Islands.

As would be expected, given the physical make-up of the island, Dominica generates more hydroelectric power than the other Eastern Caribbean countries under review. DOMLEC operates three hydroelectric power stations and two diesel power stations and serves 98% of the island's population.

In 2006, hydropower accounted for 32.5% of energy production and diesel generators for the remainder. The generation split between these two sources remained fairly constant through to 2010, when the total installed capacity of 24.2 MW was made up of hydro and diesel power broadly in the ratio of 1 to 2. As hydropower generating capacity dips during the dry season, firm capacity dips to 18.7 MW. However, it is still capable of meeting peak demand levels of 15.6 MW. Further details of the state of the infrastructure are given below.

Table 62: Analytical Framework – Power

Measure	Units	Data	Year	Source
Installed capacity	MW	24.2 MW	2010	DOMLEC
Delivered capacity or firm capacity	MW	18.7 MW	2010	DOMLEC
Peak demand	MW	15.6 MW	2010	DOMLEC
Electricity cost	US$/MWh Based on commercial consumer using 2,000 kWh per month	US$923.00/MWh	2010	CARILEC Tariff Survey June 2010
Electric power consumption	MWh per capita	1.09 MWh[82]	2010	DOMLEC, World Bank
Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)			
Average number of brownouts	Number per month			
Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)	30.9 hours	2010	DOMLEC

[82] Using a population estimate of 73,596, World Bank, 2009.

Time to obtain electrical connection	Days	Within 5 days	2010	DOMLEC

DOMLEC is faced with challenges that derive from the country's difficult terrain and its small population size. Both of these have tended to increase per capita operating costs with the result that electricity costs in Dominica are relatively high in the Eastern Caribbean region. Based on the CARILEC Tariff Survey, Dominica has the highest costs of electricity for industrial and commercial consumers, and, across certain consumption bands, for domestic consumers as well.

As regards the reliability of service reports suggest that the average customer has had a reduction in the average annual duration of electricity outages from 76.1 hours in 2008 to 51.6 in 2009 to 30.9 in 2010. This is certainly suggestive of significant improvement in reliability of service.

Unlike the other countries that are taking tentative steps towards utilising renewable energy, Dominica's huge potential in the area of geothermal energy is already clearly established and the European Union has already invested significantly in preliminary technical studies and surface drilling. The results so far are quite promising and the project expects to attract private investors in the exploration and subsequent stages of this large endeavour. If all goes well Dominica could begin to supply domestic demand within five years, with the possibility of exporting geothermal energy to the neighbouring French islands. The prospect of the availability of large amounts of "cheap" energy will significantly increase the country's prospects of attracting investment in this industry, domestic, regional and foreign, and should help to reduce the local cost of electricity supply.

Dominica's electricity regulator, the Independent Regulatory Commission is still fairly new and supposedly still learning the trade. Experts have recommended that attention should be given to more fully developing the reporting and operational requirements that the Commission places on DOMLEC, and, more generally, to reduce uncertainty between the Commission and DOMLEC.

9.1.2 Water & Sanitation

The Dominica Water and Sewerage Company (DOWASCO) is the sole organisation responsible for the management of the water resources in the country. DOWASCO is a statutory corporation, established by an Act of Parliament and it has an exclusive license, granted by the Minister of Communication and Works, to utilise the water resources of the country. It is charged with the development of the resource and with any required research, data collection, maintenance and development of new sources. This license was granted in 1989 for 25 years.

Table 63: Analytical Framework – Water & Sanitation

Indicator	Units	Data		Year	Source
Cost of water supply	US$ US gallons	Metered	Unmetered	2010	DOWASCO
		Domestic: $2.71/1,000 gallons Commercial & industrial: $3.63/1,000 gallons	Domestic: Flat charge of $3.70/month Commercial & industrial: Flat charge of $7.41/month		
Average number of incidents of water shortages	Number/ month	0.92/month		2010	DOWASCO
Average duration of water shortages	Hours	6 hours		2010	DOWASCO
Time to obtain water connection	Days	10 days		2010	DOWASCO
Cost of wastewater supply	US$	Domestic: Flat rate of $3.93/month Commercial & industrial: 40% of total water charges, minimum of $16.67, maximum of $925.93		2010	DOWASCO
Quality of waste treatment system	Rating from 1 – 5[83]	Roseau: 2 Rest of country: 1		2010	DOWASCO

Rivers are the main source of water supply for potable use, irrigation, and hydropower. The country has a total of 365 rivers and streams. In addition to high rainfall (762 centimetres or 300 inches per year), Dominica has significant forest cover. These physical conditions assure an abundant freshwater supply for domestic consumption, export markets, hydropower, irrigation, and other uses.

Water is supplied through a catchment system where stream water is captured by a small concrete weir. Forty-three catchment areas provide potable water, with at least five of the catchments supplied by springs. These are the water systems owned and managed by DOWASCO. The water is chlorinated. Turbidity is not controlled and becomes problematic after

[83] The criteria for the ratings are as follows:
- 5: Public waste treatment facilities provide 1st, 2nd and 3rd stage biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable.
- 4: Facilities provide 1st, 2nd and 3rd stage biological and chemical wastewater treatment, but tap water is not potable.
- 3: Facilities provide 1st and 2nd stage treatment. Wastewater smells.
- 2: Facilities provide 1st stage treatment. Wastewater is harmful to the environment.
- 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.

heavy rains, which stir up river sediment and cause the water supply to become slightly muddy. Some of the catchments have rapid sand filtration systems.

DOWASCO extracts over 10 million imperial gallons per day from 43 river intakes to satisfy the potable water demands. These water supply systems are more than adequate to meet the water demands of the country, except during the dry season. DOWASCO provides service for over 90% of the total population with 16,000 customer connections. Roughly 98% of the urban population and 58% of the rural is connected to the water supply system. DOWASCO is not responsible for providing water for agricultural purposes.

Water shortages may be experienced during the dry season occurring January to May with flow volumes dropping about 30%. The water shortage problem is compounded by increased water consumption during the dry season. The main uses of water in Dominica are domestic supply, hydropower and export. As a result, the entities requiring the most water include DOWASCO for domestic use and exporting water and DOMLEC for hydropower generation.

The total annual production from all currently used water sources is estimated at 16.6 million m^3. Only 40% of the consumers are metered and no accurate figure for actual usage exists. It is estimated that an additional 4.1 million m^3 are needed to serve the whole population adequately. There are no demand figures for commercial or industrial uses. In addition to supply for domestic, commercial and industrial purposes, the Dominica Port Authority provides millions of gallons per year to cruise ships. The viability of the resource as a commodity is beginning to be realised through the existence of local bottled water companies.

The only sewer network is in the capital city, Roseau. The Roseau Water and Sanitation project completed in 2004 has rehabilitated the urban sewer and water system and provided better disposal and treatment methods. The rest of the island has soakaways, pit latrines and septic tanks. According to a 2000 Pan American Health Organisation report,[84] an estimated 86% of the urban population and 75% of the rural population had access to sanitation services. DOWASCO reports that their public waste treatment facilities provide first stage biological and chemical treatment.

[84] Regional Report on the Global Assessment in the Region of the Americas, Pan American Health Organisation, 2000.

9.1.3 Telecommunications

Dominica is another of the member states of ECTEL, having gone through the same liberalisation process as those of the other members since 2000. If anything Dominica was a liberalisation pioneer in that it was the first of the islands to grant a license to a telecommunications provider other than the traditional supplier, even in advance of the regional decision making on the matter. The trends and patterns witnessed in the other countries have also marked Dominica's telecommunications landscape. As per ECTEL requirements, a National Telecommunications Regulatory Commission has been established as the local regulatory body.

ECTEL reports that in 2009 all major telecommunications indicators were "pointing upwards". "Value-added for the … sector, which accounted for 9.4% of GDP, was estimated to have increased by 3%. Total operator reported revenue rose 2.5% to an estimated EC$100 million. The services contribution to total revenue remained relatively unchanged with mobile services contributing the majority, 54%, followed by fixed line service with 32% and fixed internet service at 11%."[85] Details of the cost and reach of telecoms are set out below.

Table 64: Analytical Framework – Telecommunications

Indicator	Units	Data	Year	Source
Broadband cost	US$/month (download speed: 2 Mb/second)	$32.96	2010	LIME
	US$/month (download speed: 4 Mb/second)	$62.59	2010	LIME
	US$/month (download speed: 8 Mb/second)	$95.93	2010	LIME
Size of external fibre optic connection	Terabits/second			
Internet subscribers	Number/1,000 people	105.7	2010	ECTEL
Landline cost	US$/month	$8.89	2010	LIME
Landline cost of local call	US$/3 minutes	$0.08/3 minutes	2010	LIME
Landline cost of call to mainland US landline	US$/3 minutes	$1.11	2010	LIME
Landline penetration	Mainlines/1,000 people	232.1	2010	LIME
Mobile phone cost	US$/month	$50 2,500 minutes (on-net) 2,500 SMS (on-net) 1Gb (on-net data)	2010	LIME
Mobile phone penetration	Mobiles/1,000 people	1,461.1	2010	ECTEL

Mobile penetration increased from 137% in 2009 to 148.7% in 2010. Internet penetration was just over 10% in 2010, lower than most of the other Eastern Caribbean countries studied. Fixed line subscribers have been declining in Dominica by an average of 3.5% since 2004 and ECTEL opines that "the growth in broadband use has slowed the overall decline in fixed line subscribers".

[85] See ECTEL, Annual Telecommunications Sector Review 2008-2009, p.15.

Fixed internet service is offered by LIME which offers ADSL broadband access and dial-up access, and by Marpin 2K4 which offers high-speed internet access via cable modem. Marpin offers three speeds: 3.5 Mb/second for US$31.30 per month, 4.5 Mb/second for US$55.37 and 5.5 Mb/second for US$92.41 per month. Marpin also charges a one-time installation fee of US$27.78, half of LIME's installation fee.

LIME has continued to be the sole provider of fixed voice telephony in Dominica. However, Marpin will be introducing its fixed voice service by March 2010, which will allow the company to offer a very competitively priced 3-in-one service – cable TV, internet and fixed line telephony. LIME and Digicel have been the two companies offering mobile telecommunications services. Mobile internet access is provided through ordinary mobile subscription using GPRS and EDGE technologies as "true mobile broadband through 3G networks is not yet available to users".

As In St Lucia the quality of both the telephone and internet services were rated highly by members of the business community. They gave a rating of 4 out of 5 to these services, i.e. in the case of the former, "service is usually operational; almost never down or disconnected; and in the case of the latter, "connections are usually clear, calls are almost never dropped, and lines are almost never down". As in the other islands, there was the suggestion that telecommunications is not at all a constraint on the country's ability to attract domestic or foreign direct investment.

9.1.4 Transportation: Air

It is a common refrain in that the absence of an international airport is the country's chief disadvantage when it comes to attracting foreign direct investment. This deficiency is compounded by, and perhaps a result of, the country's relative lack of one major natural tourism asset, white sand beaches. This issue has divided the country for many years, and has been a contentious political issue.

In principle all political organisations are agreed on the desirability of an international airport on the basis of its expected positive economic and investment spin-offs. However the perspective of the government in office at this time is that given the country's fiscal situation the resources required for the construction of an international airport, now projected to be approximately US$370 million, are simply not available. There are also those who question the longer-term economic and financial justification for the project.

What the government committed to, and has just completed, was a major overhaul and modernisation of the larger of the country's two airports, Melville Hall Airport. While still not up to international jet airport standards, the airport has just undergone a US$37 million plus programme of expansion and improvement works. The runway has been extended from 1,463 to 1,768 metres, the strip has been widened to meet the standards of the International Civil Aviation Organisation and perimeter fencing has been put in. The air terminal building has been extended to include a new tower, customs and immigration and arrival areas and there are new conveyor belts, flight information displays, check-in counters and other enhancements. The table below provides information on Dominica's air transportation infrastructure.

Table 65: Analytical Framework – Air Transportation

Indicator	Units	Data	Year	Source
Number of airports	Number	2	2010	CIA World Factbook
Number of direct flights to US/Europe	Number of flights/day	0	2010	DASPA
Airports with paved runways	Number	2	2010	DASPA
Number of paved runways by size	Under 914 metres	0	2010	DASPA
	914 – 1,523 metres	1	2010	
	1,524 – 2,437 metres	1	2010	
	2,438 – 3,047 metres	0	2010	
	Over 3,047 metres	0	2010	
Passenger load capacity	Load factor			
Freight load capacity	Load factor			
Export handling charges	US$/kg for warehouse pickup to port clearance	US$11.32	2010	Amerijet
Time to export	Days from packing at warehouse to departure from port	5 days	2010	Amerijet
Export shipping costs	US$/kg from main port to Miami	Minimum $65.00 26-299 kg: $1.98/kg >299 kg: $1.59/kg	2010	Amerijet

Indicator	Units	Data	Year	Source
Export delivery time	Days from departure from main port to arrival in Miami	1 day	2010	Amerijet
Import handling charges	US$/kg for port clearance to delivery at warehouse	Minimum: $12.88 $0.07/kg	2010	Amerijet
Time to import	Days from arrival at port to delivery at warehouse	1 day	2010	Amerijet
Import shipping costs	US$/kg from Miami to main port	Minimum: $98.00 $2.67/kg	2010	Amerijet
Import delivery time	Days from departure from Miami to arrival	1 day	2010	Amerijet

Perhaps the most significant result of the enhancements was that the airport has been certified for instrument flight rules landing facilities, including night landing. Before the changes, Melville Hall could only receive 48-seater airplanes of the type used by the main inter-island carrier, LIAT, at a maximum. More so, only daylight flights were possible as the airport was not lit and otherwise not suitable to night landing. This situation often required passengers to Dominica to overnight at one of the regional hubs, Antigua, Barbados, Puerto Rico, etc. at times. While the inconvenience and cost to passengers was obvious enough, this situation was hardly conducive to attracting investment into the country.

The extent to which completion of the Air Access Improvement Project will change the perception of Dominica's investment climate and whether it will lead to the introduction of additional airlift remains to be seen. For the time being air transportation into and out of Dominica remains limited – American Eagle to and from Puerto; regular LIAT flights; Winair to and from St Maarten; and other occasional irregular flights.[86] As in the other countries Amerijet provides an airfreight service, which has been found to be reliable and effective.

[86] There is a much smaller strip, the Canefield Airport, just outside the capital city, Roseau, that receives occasional small (maximum 18-seater) aircraft.

9.1.5 Transportation: Sea

Dominica's main seaport is located at Woodbridge Bay, which is the main artery for almost all imports into the country. The country's air and seaports are managed by the Dominica Air and Sea Ports Authority (DASPA), which was created by a merger of the air and seaport authorities that previously existed as separate entities.

Woodbridge Bay is on the southwest coast of the island about one mile north of Roseau and the berth is used by both cargo and cruise vessels. The main wharf has a length of 243.8 metres, a width between 12.2 and 18.4 metres and a minimum depth alongside of 9.8 metres. Unfortunately the port does not appear to be as well organised for the collection, collation and publication of statistics as the St. Lucia ports, however, information on container traffic is available. In 2010, a total of 4,615 containers were imported into the main port at Woodbridge Bay, 2,247 of which were 40 foot containers and 2,368 20 foot. This represented a slight increase over 2009 import levels of 4,490 containers in total, 2,122 40 foot and 2,368 20 foot. Despite the modest increase, Dominica handles a considerably lower volume of traffic than many of the other islands in the study.

The port has been on a modernising drive in spite of being severely constrained for funding for its expansion and upgrading. In particular it has introduced a Cargo Flow Management System, one that would be fully compatible with the new ASYCUDA World system that was being introduced at the Customs.

Table 66: Analytical Framework – Sea Transportation

Measure	Units	Data	Year	Source
Export handling charges	US$/kg for warehouse pickup to port clearance	Local produce: $1.49/kg Non-local: $2.96/kg	2010	Tropical Shipping Ltd
Time to export	Days from packing at warehouse to departure from port	5-7 days	2010	Tropical Shipping Ltd
Export shipping costs (TEU)	US$/TEU from main port to Miami	US$2,550 – US$3,000	2010	Tropical Shipping Ltd
Export delivery time	Days from departure from main port to arrival in Miami	5 days	2010	Tropical Shipping Ltd
Import handling charges	US$/TEU for port clearance to delivery at warehouse	US$150 – US$4,000[87]	2010	Tropical Shipping Ltd
Time to import	Days from arrival at port to delivery at warehouse	1 – 30 days	2010	Tropical Shipping Ltd
Import shipping costs (TEU)	US$/TEU from Miami to main port	US$3,000	2010	Tropical Shipping Ltd
Import delivery time	Days from departure from Miami to arrival at main port	7 days	2010	Tropical Shipping Ltd

The table above outlines the time and cost issues involved in shipping from Dominica. Essentially, exporting to the US takes 5-7 days from packing at warehouse to departure from the port and then 5 days from departure to arrival at Miami. Import delivery time from Miami to

[87] Includes trucking fees.

Dominica is also about 7 days. Exporting a 20 foot container to the US would cost US$2,550 to US$3,000. Importing a 20 foot container costs US$3,000 and it could take between 1 and 30 days from arrival at Roseau to delivery at warehouse.

There are other charges payable at the port, to wit, tailgate charges, jetty rates, FAS (free alongside) and others. Of these the FAS rates are significant: US$415.93 per 20 foot container and US$933.33 per 40 foot. This covers stevedore and long shore labour, cargo dues and cargo handling.

Dominica has had a reputation for being one of the most expensive ports in the Caribbean in terms of the cost of importing and exporting and the figures in the table above would tend to bear this out. Slow delivery and clearance times add to high cost of this aspect of the investment climate.

9.1.6 Transportation: Road

Dominica's road network has been long recognised as being in need of renewal and rehabilitation. The country's Growth and Social Protection Strategy refers to a 1995 road survey that found that 45% of the road network was in poor or fair condition. In this 2008 publication Dominica's road network was described as consisting of 812 km in total, broken down into main roads (336 km), feeder roads (350 km) and secondary or village roads (126 km). The stock of roads consisted of 572 km of asphalt-surfaced roads and 33 km of dry-weather surfacing.

Road condition surveys began towards the end of 2007 in support of the development of a comprehensive 10-year Road Sector Programme, which was published in January 2009. These surveys found that the state of the road network in Dominica was unsatisfactory. The condition rating is based on road roughness alone, and has been measured according to the International Roughness Index.

Table 67: Analytical Framework – Road Transportation

Indicator	Units	Data	Year	Source
Size of road network	Length of road network, km	905 km	2008	
Density of road network	Length of road network/total land area	1.21 km/km^2	2008	CIA World Factbook
Density of paved roads	Paved roads as a% of total road network			
Condition of road network	% of road network in poor condition	Main roads: 75% (fair to very poor) Other roads: 90%	2008	

This more recent work showed that the size of the road network had increased to 905 km, of which 320 km were categorised as main roads and the remaining 585 km as secondary, feeder or urban. Of the main roads 25% were found to be in good condition and 75% in fair to very poor condition. Of the secondary, feeder or urban roads only 2% were found to be in good condition, with the remainder fair to very poor.

The poor road conditions in Dominica, in part a result of the country's rough and hilly topography, have been an important contributor to the country's poor infrastructural image, which constitutes an important element in the country's perceived lack of appeal for foreign investment. The absence of an international airport is perceived by some to be another major obstacle.

Fortunately, there has been considerable emphasis on road development in recent years with much new and ongoing construction in evidence. Among these are the major works proceeding on the major West Coast highway and on the road from the airport to the capital city, Roseau. These two, when competed, will constitute major improvements to the two of the country's important transport arteries. As for the rest of the road sector programme, its goals are:

- By 2015 to:
    - Increase to 60% the number of main roads in good condition; and
    - Increase to 30% the number of secondary roads in good condition.

- By 2020 to:
    - Increase to 100% the number of main roads in good condition; and
    - Increase to 100% the number of secondary roads in good condition.

Availability of funding will have a lot to do with the extent of fulfilment of these goals, but there is some basis for optimism, given the performance of the authorities in this regard in recent years.

9.2 Land

Zoning and land use planning does not really exist in Dominica as these terms are normally defined. As such, centralised data on land stocks, zoning allocations, etc. are limited. Information that was available was more of an ad hoc than a comprehensive nature and is presented here to give some qualitative and quantitative information on land available for investment purposes.

Many years ago Dominica invested in the construction of a number of factory shells. As in other Caribbean countries, these were financed through one of the specially designed lending programmes of the Caribbean Development Bank. These 18 shells were once government owned, but they are now vested in the Agricultural and Industrial Development (AID) Bank, which managed the properties prior to owning them and continues to do so now. All but one of these shells are located in an industrial estate close to the capital city, Roseau, with the other located in Grand Bay in the south of the island. The last one has never really been occupied as the location has been found not to be an adequate match for the needs and interests of potential investors, domestic and foreign. At the time of research this was the only unoccupied shell.

Together, the 18 shells comprise a total of about 13,378 m^2 and range in size from 92.9 to 1,951 m^2. Further details on stock of lands are given in the table below.

Table 68: Analytical Framework – Land

Measure	Units	Data	Year	Source
Stock of commercial sites	Total square metres			
Vacancy rates of commercial sites	% unoccupied			
Cost of renting commercial sites	US$ per square metre/month			
Stock of industrial sites	Total square metres	13,378 m^2	2010	AID Bank
Vacancy rates of industrial sites	% unoccupied	5.5%	2010	AID Bank
Cost of renting industrial sites	US$ per square metre/month	Manufacturing: $47.84 per m^2/month IT: $63.79 – $79.74 per m^2/month	2010	AID Bank
Stock of freezones sites	Total square metres	0	2010	AID Bank
Vacancy rates of freezone sites	% unoccupied	n/a	2010	AID Bank
Cost of renting freezone sites	US$ per square metre/month	n/a	2010	AID Bank
Length of beaches	Total kilometres			
Cost of purchasing beachfront land	US$/square metre	[88]$59.80 – $119.60/$m^2$	2010	Private sector stakeholder
Cost of leasing beachfront land	US$/square metre/year			
Accommodation stock	Total rooms	920	2009	Caribbean Tourism Organisation

[88] One hotelier gave a rate of EC$15.00 per sq. ft.; another suggested a price of EC$25-EC$30 per sq. ft. for beachfront land.

Measure	Units	Data	Year	Source
Accommodation occupancy rates	%			
Amount of arable land	% of total land area	28%	2005	CIA World Factbook

The AID Bank reports that there is a lot of interest from potential investors in these spaces, and suggests it may be worthwhile for the Government to invest in additional factory space. Plans for a business park in the north of the island appear to have been put on hold. The Government also owns lands that have been earmarked for industrial purposes in various parts of the island, to wit, Castle Bruce, Melville Hall and Portsmouth. Given the low vacancy rates and tangible investor interest, it would seem that there is demand for additional industrial and commercial properties. While the Government could invest in this area itself, there certainly seems to be room for the private sector to do so as well. The possibility of leasing public lands for this purpose could also be explored as this may facilitate investment by private sector actors that may not have the resources to buy land outright. An additional benefit of this approach is that land, a scarce commodity of Dominica, will not pass out of public stewardship completely.

As with some of the other countries there is very limited information available on the cost of land for hotel or tourism development. The reports are always that this is a matter for negotiation between buyer and seller. Also, Dominica may be the least developed in terms of tourism of all the countries covered in this study, so there is little record of such transactions. There is also very limited beachfront land available in Dominica and the country's tourism development potential would appear to rest in nature and adventure tourism, boutique properties and other niches of this kind. It has become the trend for government, in an effort to spur development in the country, to contribute land as equity in tourism development projects.

9.3 Labour

Availability of labour market information in Dominica is extremely limited. Access to such information should improve following the launch of the regionally coordinated labour market information system by the OECS Secretariat, which is working with the support of the International Labour Organisation.

However, some figures are available through other channels. Dominica carried out detailed surveys for the compilation of the Country Poverty Assessment, which was published in 2010. The Assessment reported a reduction in the level of indigence from 10% in 2002 to 3% in 2010, a reduction in headcount poverty from 39% to 28% over the same period as well as a reduction in unemployment to 11% in 2010 from more than 20% in 2002. With the population census scheduled to commence in 2011, there will shortly be an opportunity for corroboration of the unemployment and other data.

Unlike St Lucia, Dominica does have minimum wage legislation in place for workers at the lower end of the pay scale, as shown in the table below.

Table 69: Indicative Minimum Wage Data

Type of Employment	Salary (US$)
Agriculture & other unskilled	$1.48 per hour
Factory & tourism (daily paid)	$1.67 per hour
Cashiers / receptionists	$2.04 per hour
Sales persons	$2.04 per hour

However actual wages, certainly in establishments above a certain size, tend to be higher than the legislated minimum wages. The following table contains reported wage levels across a range of employment levels as reported by 2 of Dominica's large businesses. Notably, front-line employees in one of these businesses are paid US$2.96/hour, well above the minimum wage of US$2.04 for sales persons. It is important to note that as these figures have been provided by larger businesses, they are likely to be at the higher end of the ranges for the various positions. As such, they may not be entirely representative of earning levels in the country.

Table 70: Indicative Labour Cost Data

Position	Data	Data
Front-line employees	$2.96 per hour	$370 per month
Supervisory level	$926 per month	$1,296 per month
Second-tier management	$1,852 per month	$1,481 per month
Managers	$2,963 per month	$2,222 per month

In terms of labour availability two business executives reported that there was no oversupply of qualified candidates, generally speaking, but that a company search would eventually lead to identification of the right candidates.

9.4 Capital

Levels of business and economic activity are rather lower in Dominica than in the other countries that feature in this review, a fact that is reflected in the size of the economy compared to the others. In fact, levels of investment, both domestic and foreign are significantly lower in than in some OECS nations. The absence of the mainstay of the regional tourism industry, white sand beaches, and the small size of the local market have not been conducive to attracting investment. The significant foreign investment that has taken place in recent times has not relied on the domestic financial community to any great extent.

The Eastern Caribbean Central Bank provides a range of applicable lending rates. The range of the prime interest rate for Dominica during 2010 was between 8.5 and 10%. Rates applicable to any particular loan would be prime plus a number that would depend on the circumstances of the particular project or investor. The allegation regarding the supposed non-development friendly feature of commercial bank operations in the region is also made of Dominica.

As its name implies the Agricultural and Industrial Development Bank is a development bank. Like the other development banks in the region the AID Bank aims to facilitate and promote development in the productive sectors of the economy, including agriculture, agro-processing, industrial and tourism development. Owing to the special characteristics of its funding sources the AID Bank has had the ability to lend at lower rates than the commercial banks.

Currently the AID Bank's lending rates range from 6% to 8.5% for productive sector loans. Its lending ceiling for any one customer is 20% of the bank's capital. While the Bank's structure and financing limit its ability to finance large projects, it has made fairly significant investments in projects in the hotel and other sectors, to local and foreign investors.

Annex I – Analytical Framework

Area	Sub-area	Measure	Units	Data	Year	Source
Infrastructure	**Power**	Installed capacity	MW			
		Delivered capacity or firm capacity	MW			
		Peak demand	MW			
		Electricity cost	US$/kWh			
		Electric power consumption	MWh/capita			
		Average number of blackouts	Average number of supply interruptions per customer per year (SAIFI)			
		Average number of brownouts	Number/month			
		Average duration of blackouts	Average number of hours of supply interruptions per customer per year (SAIDI)			
		Time to obtain electrical connection	Days			
	Water	Cost of water supply	US$/cubic metre			
		Average number of incidents of water shortages	Number/month			
		Average duration of water shortages	Hours			
		Time to obtain water connection	Days			
	Sanitation	Cost of wastewater supply	US$/cubic metre			
		Quality of waste treatment system	Rating from 1 – 5: 5: Public waste treatment facilities provide first stage (solid particle removal), second stage (aeration, organic matter killed), and third stage (removal of heavy metals and			

Area	Sub-area	Measure	Units	Data	Year	Source
			chemicals) biological and chemical treatment to the highest international standards. Tap water is chlorinated and potable. 4: Public waste treatment facilities provide first, second, and third stage biological and chemical wastewater treatment, but tap water is not potable. 3: Public waste treatment facilities provide first and second stage treatment only. Wastewater smells. 2: Public waste treatment facilities provide first stage treatment only. Wastewater is harmful to the environment. 1: Public wastewater treatment is not available. Raw sewage freely enters the environment, or the company has its own treatment facility.			
	Telecommunications	Broadband cost	US$/month (download speed: 1 MB/second)			
			US$/month (download speed: 2 MB/second)			
			US$/month (download speed: 4 MB/second)			
		Size of external fibre optic connection	Terabits/second			
		Internet users	Number/1,000 people			
		Landline cost	US$/month			
		Landline cost of local call	US$/3 minutes			
		Landline cost of call to mainland US landline	US$/3 minutes			
		Landline penetration	Mainlines/1,000 people			
		Mobile phone cost	US$/month (minimum of 2,400 minutes in plan)			

Area	Sub-area	Measure	Units	Data	Year	Source
		Mobile phone penetration	Mobiles/1,000 people			
	Transportation - Air	Number of airports	Number			
		Number of direct flights to US/Europe	Number of flights/day			
		Airports with paved runways	Number			
		Number of paved runways by size	Under 914 metres			
			914 - 1,523 metres			
			1,524 - 2,437 metres			
			2,438 - 3,047 metres			
			Over 3,047 metres			
		Passenger load capacity	Load factor			
		Freight load capacity	Load factor			
		Export handling charges	US$/kg for warehouse pickup to port clearance			
		Time to export	Days from packing at warehouse to departure from port			
		Export shipping costs	US$/kg from main port to Miami			
		Import handling charges	US$/kg for port clearance to delivery at warehouse			
		Time to import	Days from arrival at port to delivery at warehouse			
		Import shipping costs	US$/kg from Miami to main port			
	Transportation - Road	Size of road network	Length of road network, km			
		Density of road network	Length of road network/total land area			
		Density of paved roads	Paved roads as a % of total road network			
		Condition of road network	% of road network in poor condition			
	Transportation - Sea	Export handling charges	US$/kg for warehouse pickup to port clearance			
		Time to export	Days from packing at warehouse to departure from port			
		Export shipping costs (TEU)	US$/TEU from main port to Miami			
		Export delivery time	Days from departure from main port to arrival in Miami			

Area	Sub-area	Measure	Units	Data	Year	Source
		Import handling charges	US$/TEU for port clearance to delivery at warehouse			
		Time to import	Days from arrival at port to delivery at warehouse			
		Import shipping costs (TEU)	US$/TEU from Miami to main port			
		Import delivery time	Days from departure from Miami to arrival at main port			
Land		Stock of commercial sites	Total square metres			
		Vacancy rates of commercial sites	% unoccupied			
		Cost of renting commercial sites	US$ per square metre/month			
		Stock of industrial sites	Total square metres			
		Vacancy rates of industrial sites	% unoccupied			
		Cost of renting industrial sites	US$ per square metre/month			
		Stock of freezones sites	Total square metres			
		Vacancy rates of freezone sites	% unoccupied			
		Cost of renting freezone sites	US$ per square metre/month			
		Length of beaches	Total kilometres			
		Cost of purchasing beachfront land	US$/square metre			
		Cost of leasing beachfront land	US$/square metre/year			
		Accommodation stock	Total rooms			
		Accommodation occupancy rates	%			
		Amount of arable land	% of total land area			
		Amount of arable land under cultivation	% of arable land under cultivation			
Labour	**General**	% of skilled workers	% of total workforce			
		% of unskilled workers	% of total workforce			
		Size of workforce	Number of people			
		Unemployment rate	% of total workforce			

Area	Sub-area	Measure	Units	Data	Year	Source
		Underemployment rate	% of total workforce			
		Minimum wage	US$/hour			
	Tourism	Size of tourism workforce	Number of people			
		Cost of skilled workers	US$/hour			
		% of skilled workers	% of total tourism workforce			
		Cost of unskilled workers	US$/hour			
		% of unskilled workers	% of total tourism workforce			
	ICT-enabled Services	Size of ICT-enabled services workforce	Number of people			
		Cost of call centre operator	US$/hour			
		Number of call centre operators in workforce	Number of people			
		Cost of programmer	US$/hour			
		Number of programmers in workforce	Number of people			
	Agriculture	Size of agricultural workforce	Number of people			
		Cost of skilled workers	US$/hour			
		% of skilled workers	% of total agricultural workforce			
		Cost of unskilled workers	US$/hour			
		% of unskilled workers	% of total agricultural workforce			
Capital		Private credit/GDP	%			
		Central bank lending rate	%			
		Central bank savings rate	%			
		National bank commercial lending rates	%			
		Regional bank commercial lending rates	%			
		Development bank commercial lending rates	%			