

PERFORMANCE EVALUATION DESIGN
REPORT (FINAL)

Evaluation Design and Implementation of
Cabo Verde Port Project

MARCH 31, 2016

PRESENTED TO:

Hamissou Samari
Millennium Challenge Corporation
875 15th Street, NW
Washington, DC 20005
(202) 521-3600

PRESENTED BY:

NORC at the
University of Chicago
Clifford Zinnes
Senior Fellow
4350 East-West Highway
Suite 800
Bethesda, MD 20814
(301) 634-9527



at the UNIVERSITY of CHICAGO

Acronyms

ANLC	National Anti-Corruption Authority
CEM	Country Economic Memorandum
DG	Director General
DOTS	Direction of Trade Statistics
ENAPOR	Empresa Nacional dos Portos (National Company of Port Administration)
ECOWAS	Economic Community of West African States
FDI	Foreign Direct Investment
ICT	Information, Communications and Technology
IFC	International Finance Corporation
IMF	International Monetary Fund
LSCI	Liner Shipping Connectivity Index
LOS	Level of Service
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
M&E	Monitoring and Evaluation
MTPT	Ministry of Transport and Public Works
OE	Operational Efficiency
PIDG	Private Infrastructure Development Group
PoAI	Port of Amsterdam
PPP	Public-private partnership
PTR	Pass-Through Rate
SSA	Sub Saharan Africa
SOE	State-Owned Enterprise
TEU	Twenty-foot-equivalent unit
UNCTAD	United Nations Conference on Trade and Development
USD	U.S. Dollars
WITS	World Integrated Trade Solution

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Executive Summary

This executive summary highlights major changes made to the evaluation design since the first draft of this report was submitted to the MCC in October 2015.

This second draft of the Performance Evaluation Design Report (PEDR) was written after the NORC mission completed its fact-finding mission to Praia, Cabo Verde (CV). It contains both qualitative and quantitative information which was not available to the team when it drafted the original PEDR. Accordingly, it contains a more realistic assessment of the nature of the issues, challenges and difficulties associated with completing the Monitoring and Evaluation work on the Port of Praia.

During its mission the NORC team tested and confirmed hypotheses, which it had posited in its earlier report, most importantly ones concerning the effects of the MCC investment on the island nation's economy. The NORC mission confirmed that the expanded cargo hauling capacity in the Port of Praia, which the investment created, significantly exceeds current and near-term, expected demand for port services. In any event, the mission discovered that demand for port services is boosted by circumstances, which are unique to CV. Most of the ocean freight consignments that arrive in Praia are very small in scale---so called "barrel freight" because a volumetric limit applies to individual consignments. This limit is the result of duty preferences that CV Customs gives to transfers of household and personal goods coming from the diaspora. In any case, it is the handling of "barrel freight" which accounts for most of the port's volume and which represents the fastest growing segment of its volume. Unlike the way in which most ports operate, barrel freight in Praia is stuffed and distributed from the ports own on terminal facilities.

The mission also confirmed that the organization of the port as a "service port", one in which all services are provided with public sector employees and all cargo is handled with public sector provided facilities and lift equipment, has adversely affected the business ecosystem surrounding the port and limited the development of specialized service providers. The "knock down" effect is that opportunities for forming new value added port services that extend and complement the port's core cargo handling services are limited. For example, freight forwarders have not emerged in Praia to handle "barrel freight" through their own off terminal facilities.

Based on information that it collected during the mission the NORC team was also able to posit some additional hypotheses. For example, it discovered new information regarding the sequencing and coordination of port capacity planning, investment preparation and implementation, on the one hand, and the port sector's reorganization, reregulation and proposed restructuring under a private concession, on the other hand. The disconnect among these impact critical events has significantly affected and, indeed, limited benefits derived from the MCC project. Additionally, we understand that the concession process for the four ports in Cape Verde is under way with expected completion in the second quarter of 2016. It remains to be seen how this will impact the ports in the long term.

The subordination of pricing for Port of Praia services under the single unified tariff of the Empresa Nacional dos Portos (ENAPOR) has had similar benefit absorbing effects. ENAPOR is responsible for all nine ports in Cabo Verde. It acts as both the port authority *and* operator at the Port of Praia. ENAPOR cross subsidizes CV's nine ports and equalizes pricing among them. This single tariff that has remained unchanged for an extended time diminishes the pass through of benefits to CV's real sector from the investment in the Port of Praia.

In terms of adjustments to the methodology for the Shipping and Market Analysis the team will collect indicators on regional port costs, levels of service and operational efficiency and compare them with the Port of Praia; to complement the analysis we propose to use the Liner Shipping Connectivity Index (LSCI) as a proxy for port regional competitiveness. We also propose analyzing the domestic market and specifically the market share between port of Praia and Port Grande in order to assess quantitatively the impacts on competitiveness. The team will prepare a qualitative assessment of the extent to which the MCC investments are enablers for Cabo Verde to compete at the regional level, however the reality is that this potential has not been realized and therefore it cannot be measured. It is necessary to consider that from the beginning of the compact to the present time the Cabo Verdean port system has served domestic cargoes almost exclusively, The long term objective of becoming a regional transshipment hub depends on the realization of productivity gains and service improvements complemented with the implementation of a comprehensive strategy to attract regional cargo exploiting the inefficiencies of the regional port system.

The Trade Analysis methodology has been adjusted to analyze the trends of the different market segments served based on the cargo definitions that the port uses to track port activity.

The Tariff/Cost Analysis will be centered on conducting an empirical pass-through analysis, where we measure the impact of changes in the cost of port services on the tariffs for port services while controlling for other factors that could explain variation such as inflation and exchange rate fluctuation. Using the detailed financial statements we will assess if ENAPOR has accrued cost savings due to the MCC's investment and then we will analyze whether these cost savings have been passed on to consumers of port services through lower tariffs.

These new and confirmed findings will affect the focus and the research strategy of the NORC team as it moves forward. Resources will be applied and further data collected to confirm and expand the findings of the assessment presented in this document. In addition, the NORC team will undertake a more thorough assessment, for example, of how the assets created under the MCC investment can best be used to advance the government's new maritime sector development strategy which is one of three pillars which the Government of CV has embraced as its economic development strategy.

1. Introduction

1.1 Country context

In December 2007, Cabo Verde (CV) graduated from the United Nations list of Least Developed Countries. Good governance, sound macroeconomic management, trade openness and increased integration into the global economy, as well as the adoption of effective social development policies merited the island nation's promotion to middle income status. Between 1990 and 2000, growth in Cabo Verde's real gross domestic product (GDP) averaged 12.1%. Between 2000 and 2009 that rate had slowed to 7.3%, still well above the average for sub-Saharan Africa. Between 2009 and 2013 the island economy's GDP growth had slowed further to 2.0%.¹

The government has succeeded in supporting growth through an ambitious public investment program. However, the program has entailed high import content, and this condition limited its growth dividend and today threatens its sustainability because of the fiscal drain which it imposes on the national budget. Most of CV's public investment program was financed externally but under concessional terms until recently when the country graduated to middle income status. The resulting high level of borrowing created persistent double-digit fiscal deficits and a cumulative public debt that currently exceeds 114% of GDP.² With that said, the program did succeed in alleviating poverty. From 2003 to 2008, the national poverty rate dropped from 37% to 27% of the population, while the extreme poverty rate dropped from 21% to 12%.³

Cabo Verde's tourism sector is the country's primary driver of growth and the main contributor to a widely distributed economic uplift. Importantly, growth in tourism investment has had the ancillary effect of generating broadly distributed economic gains. The nation's Gini coefficient fell from 0.55 in 2003 to 0.48 in 2008 while over the same period the income of the bottom 40% (as a share of total income) increased by 9.9%.⁴ Moreover, the share of total household expenditures of the bottom 40% increased from 7% to 19%.⁵ Political stability continues to prevail in Cabo Verde and under the current government good governance has remained a source of competitive advantage for the entire economy, just as it has since the country won independence from Portugal in 1975. Among African countries, Cabo Verde is unique in the strength of its democratic institutions, its protection of human rights and civic freedoms and its

¹<http://data.worldbank.org/sites/default/files/wdi-2015-ch4.pdf>

² <http://countryeconomy.com/national-debt/cabo-verde>

³ <http://data.worldbank.org/country/cape-verde>

⁴ In the appraisal documents supporting its most recent poverty alleviation credit, the World Bank found that: "Cabo Verde has made impressive progress on social development indicators, including poverty reduction. It is also a country with strong institutions. Between 2002 and 2008, the poverty rate (at US\$1.25/day) dropped by 7.3 percentage points (p.p.) to 13.7 percent. The share of income of the bottom 40 percent increased from 12.4 percent to 15.3 percent over the same period, according to the 2014 Human Development Report, and it is one of the few countries on track to achieve all Millennium Development Goals by 2015. These achievements have been supported by strong institutions: Cabo Verde continues to have the highest Country Policy and Institutional Assessment (CPIA) score (3.9) among IDA countries. Strong democratic institutions are arguably Cabo Verde's most precious asset, having both facilitated accountability—important for pro-poor policies—and attracted considerable Foreign Direct Investment (FDI). "http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/05/28/090224b082ecea72/1_0/Rendered/PDF/Cabo0Ve rde000N0pport0Credit0Project.pdf

⁵ *ibid*

relatively low level of corruption. **Additionally, its location at the crossroads of the Americas, Africa and Europe is a distinct comparative advantage**

With that said, potential sources of competitive advantage for the economy are limited. Only 10% of the island economy's territory, for example, is arable land.⁶ Moreover, the country possesses only limited mineral resources. Despite its arid climate and mountainous terrain, Cabo Verde has managed to develop rapidly, in a large part thanks to its flourishing tourism industry, **remittances from a sizable diaspora in the US and Europe** and the foreign direct investment, which has driven growth in this sector.

Although it has grown faster over the past 20 years than almost all other African economies, the Cabo Verde economy continues to lack diversification and thus resilience to external shocks. It is particularly vulnerable to shocks related to spikes in petroleum and food prices. Traditionally, the island economy's tourism sector has primarily targeted Portuguese speaking visitors (although in **recent years tourism has diversified into Italy, UK and others**). This narrow market focus together with remittances from expats that have emigrated remain the island economy's primary sources of income.

The economy suffered a significant setback as a result of the global economic crisis of 2008 and the subsequent protracted European debt crisis. In 2014, its GDP resumed growth (1.3%).⁷ In 2015-16, GDP growth is expected to strengthen further to 2.3%.⁸ Weak economic activity in Europe, however, continues to dampen tourism, which still accounts for 53.9% of exports, as well as investment and remittance inflows, most of which have traditionally come from Europe, thus limiting growth further.

The government recently developed a national development plan, which is designed to promote economic diversification. Three of the sectors being targeted for development include regional ocean transport transshipment, service centers and information and communication technology.⁹ Maritime transportation is already of great importance in Cabo Verde, given the fact that the country is an archipelago. All the islands have ports that allow maritime access: nine in total, of which three (Praia, Porto Grande, and Porto da Palmeira) receive international traffic.

⁶ ibid

⁷ <http://data.worldbank.org/country/cape-verde>

⁸ ibid

⁹ Based on interviews conducted with the Ministry of Finance, PPP Unit, November 2015

1.2 Report Objectives

MCC contracted NORC and its subcontractors, Nathan Associates Inc. and Agland Investment Services Inc. to design and implement an evaluation of the Cabo Verde, Port of Praia Project. The Base Period for this contract entails the delivery of a performance evaluation of the Port Project and suggested designs for a potential in-depth impact evaluation, which would be implemented in Option Years 1-3.

The objectives underlying the Port of Praia performance evaluation include the following:

- To assess the success or failure of the MCC investment in achieving the goals and objectives, which it was originally designed to achieve;
- To determine what impacts and consequences the MCC investment in the Port of Praia had on port operating efficiency, competitiveness and trade enhancement; and
- To discover ways in which benefits resulting from the MCC could have been increased without additional cost through better methods of project preparation, prior institutional reform or better oversight and control during implementation.

2. Overview of the Compact and Intervention

2.1 Project Overview and Implementation Plan

In 2005, the Millennium Challenge Corporation signed a five-year, \$110 million Compact with the Government of Cabo Verde with the goal of economic growth and poverty reduction through three projects. One of these projects, the Infrastructure Project, comprised the Port of Praia Activity and the Roads and Bridges Activity and aimed at improving the country's poor road, bridge and maritime transportation infrastructure and thus increasing integration of internal markets and reducing transportation costs.

The \$82.7 million Infrastructure Project was intended to integrate internal markets and reduce transportation costs by improving five roads on the island of Santiago, four bridges on the island of Santo Antão and by modernizing and expanding the maritime Port of Praia on the island of Santiago. In terms of budget allocation the port of Praia activity represented an investment of \$54.5 million, whereas the Roads and Bridges activity represented a \$28.2 million investment.¹⁰

At the project's inception it was hypothesized that improved transportation infrastructure would lead to better inter-island and international transport and thereby provide better linkages for the delivery of social services, more broadly distributed employment opportunities, and improved access to local markets. An estimated 58,728 people and 1,127 formal businesses were expected to directly benefit from the road, bridge and port improvements.¹¹

2.1.1 Program Participants

MCC identified both direct and indirect beneficiaries of the Cabo Verde Infrastructure Project and corresponding activities in the compact M&E Plan. The primary beneficiaries of the Port of Praia expansion (Port Activity) are Cabo Verdean importers and exporters, including individuals and businesses. These benefits are believed to take the form of improved quality of transportation services that are the result of upgrades to the Port of Praia. Businesses and employees involved in the tourism sector on Santiago are also expected to benefit from the Port upgrade. These benefits were projected to take the form of alleviating possible future constraints on growth. In addition, the whole population of the island of Santiago, approximately 234,940 people, which accounts for 57% of the total population of Cabo Verde, is expected to benefit from lower import prices.

For the Roads and Bridges Activity in Santiago and Santo Antão, the beneficiaries are anticipated to be Cabo Verdean families, farmers, businesses, non-governmental organizations (NGOs) and social-service providers located in communities along the improved project roads or connected by the project bridges. Beneficiaries were estimated to include 58,728 people or 18% of

¹⁰ Interview conducted with MCA, in Praia, November, 2015

¹¹ MCC Cabo Verde M&E Plan

the total population of the islands of Santiago and Santo Antão who will be directly impacted by construction activities.¹²

2.1.2 Geographic Coverage

Cabo Verde is an archipelago nation, composed of ten islands, nine of which are inhabited. Barlavento (windward) islands include Santo Antão, São Vicente, Santa Luzia (not inhabited), São Nicolau, Sal, and Boa Vista. Sotavento (leeward) islands include Maio, Santiago, Fogo, and Brava. All 9 inhabited islands contain ports. The focus of this report is on the island of Santiago, where the Port of Praia is located. Santiago is Cabo Verde's largest island in terms of both size and population.

2.2 Program Logic

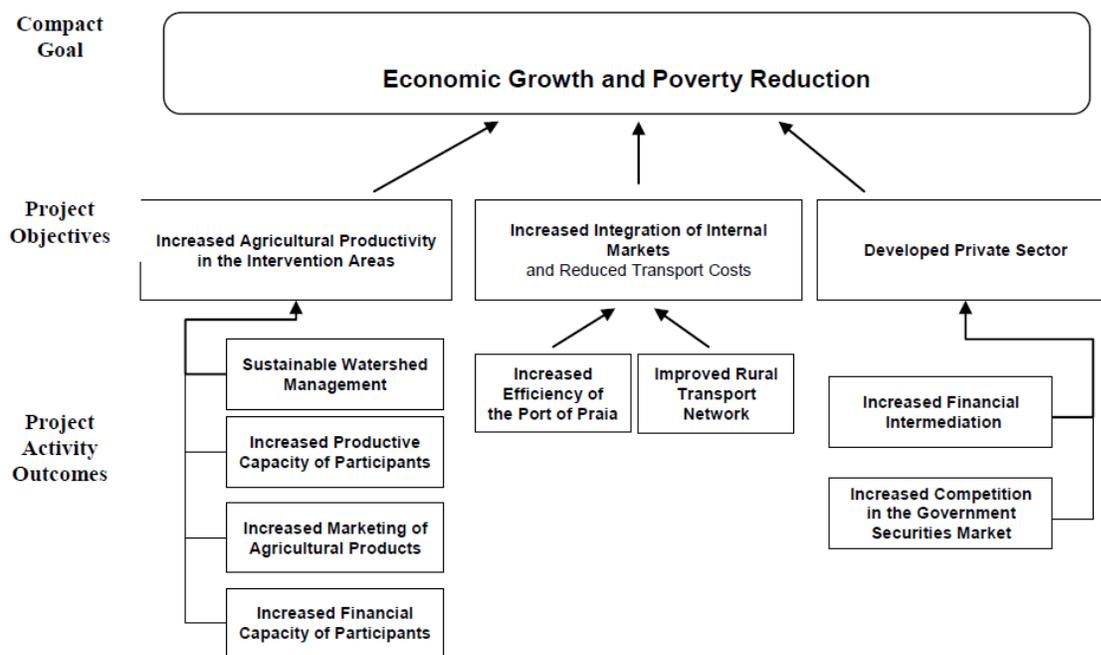
The Cabo Verde Compact with MCA aimed to increase economic growth and reduce poverty through three projects: the Watershed Management and Agriculture Support Project, the Private Sector Development Project, and the Infrastructure Project. The Program Logic described in Figure 1 highlights MCC's expected outcomes for the Infrastructure Project, including the increased efficiency of the Port of Praia, improved rural transport network, increased integration of internal markets, and reduced transport costs.

The Roads and Bridges Activity ex-ante Estimated Economic Rate of Return (ERR) was calculated at 14%, while the Port Activity was estimated to realize a return of 29%. The Roads and Bridges Activity ERR is estimated through projected reduction in vehicle operating costs from improving existing roads and laying new ones, as well as the reduction in foregone earnings resulting from the new bridges connecting economic markets previously obstructed during rainy periods. The Port Activity estimate captures the MCC investments' contribution to relieving constraints on handling capacity, productivity, and ultimately port traffic. BCEOM's September 2007 study estimated benefits of these investments both in terms of cost reductions for port operations as well as GDP growth¹³.

¹² MCC Cabo Verde M&E Plan

¹³ Per the M&E Plan, this ERR includes a 20% cost increase contingency. The returns are based on the completion of both Phases I and II.

Figure 1: MCC Cabo Verde Compact I Program Logic¹⁴



The MCC-reported outcomes for the Infrastructure Project include an increase in the incomes of beneficiaries by USD \$6 million over the five-year life of the projects, the successful rehabilitation of three roads (40 kilometers) on the island of Santiago, and construction of four bridges on the island of Santo Antão.

MCC has proposed the list of evaluation questions summarized in Table 1, which will be examined by the project team.

Table 1: Overview of Research Questions

Research Questions
1. Competitiveness
a. How has the competitiveness of the Port evolved since 2006/2005?
b. Among the ports in the region, how has the competitiveness of the Port changed following completion of the works?
2. Trade Volume
a. What is the relative change in the level of domestic and international traffic, volume of container and bulk maritime trade, value of trade (USD) and growth trends in relevant sectors before and after the improvements to the port?
b. To what extent can changes in trade volume be attributable to MCC's intervention?

¹⁴ MCC Cabo Verde M&E Plan

Research Questions	
3.	Operational Efficiency
a.	To what extent do the completed works mitigate/resolve observed constraints to port capacity and improve the efficiency of port operations as identified in due diligence and feasibility studies?
b.	How has the project affected the Port's operational efficiency? What is the percentage change in the overall productivity of the port following completion of the works?
c.	What percentage change in the port's principal measures of operational efficiency can be observed following completion of the works?
d.	Has the level of congestion in the Port changed? If there has been change, what has caused the change?
4.	Costs
a.	What percentage change in the port's annual total direct costs (shipping, cargo handling and land transportation, etc.) can be observed following completion of the works?
b.	What is the relative change in the cost of doing business to importers, exporters, agents, transportation companies, and other businesses sensitive to port improvements?
5.	Integration of Internal Markets
a.	To what extent has the port project contributed to achieving an overall compact objective of increasing the integration of internal markets through inter-island trade?
b.	What percentage change in trade among the islands of Cabo Verde can be observed following completion of the works?
6.	Employment
a.	What net change can be observed in employment among the permanent and non-permanent employees in the port sector following completion of the works?
7.	Unanticipated Impacts
a.	What were unanticipated positive and negative impacts of port investments? What were unanticipated institutional, economic, et al. positive and negative impacts of port investments?
8.	Monitoring/Process Questions
a.	Are investments being sustained? If investments are not being used or sustained, why not? What can be done about it?
b.	What changes, if any, in the tariff structure can be observed?
9.	Lessons Learned/Recommendations
a.	What are key lessons learned, both in terms of the project performance (were the right investments made?) as well as the implementation of the evaluation study?
b.	What recommendations with respect to engineering, economic logic, and institutional reform can be made for future MCC port investments and evaluations?

For the Praia Port performance evaluation the project team proposes to follow the same program assessment logic and to apply the same performance metrics that the MCC applied in its own assessment of program results. Indicators that were used in that assessment will be applied again in this independent assessment. NORC analyzed changes in the MCA's monitoring and evaluation (M&E) indicators, which were collected on a quarterly basis throughout the investment period. The MCA port project indicators are listed in the table below.

In general these parameters fall into two categories: operational efficiency (OE) and level of service (LOS). Operational efficiency pertains to the productive use of assets, while LOS pertains to the quality of service provided to users of those assets, mainly cargo and ship owners and their representatives. The operational efficiency indicators include ship productivity, crane productivity, and berth throughput productivity. The LOS indicators include ship delay, truck delay, and truck turn time. In order to attract new cargo and hence generate higher throughputs, we are primarily interested in the time required to serve the vessel at the berth and LOS that the shippers experience.

Table 2: MCA Compact Port Project Indicators¹⁵

Activity	Indicator Level	Indicator
Port Activity	Output Indicator	USD value of contracts for Port feasibility, design, supervision and program management signed (Cumulative)
Port Activity	Output Indicator	USD value of contracts for Port feasibility, design, supervision and program management disbursed (Cumulative)
Port Activity	Output Indicator	Percent of contracts for Port feasibility, design, supervision and program management signed works disbursed against signed (cumulative)
Port Activity	Output Indicator	USD value of Port works contracts signed (Level)
Port Activity	Output Indicator	USD value of Port works contracts disbursed (Cumulative)
Port Activity	Output Indicator	Port of Praia: Percent of contracted works disbursed (cumulative)
Port Activity	Process Milestone	Contract for Phase I works signed (Date)
Port Activity	Process Milestone	BCEOM submits final design for Phase II works (Date)
Port Activity	Process Milestone	Site installation complete (Date)

On the basis of changes in these indicators, we can assess how ranges of performance have changed over the course of the Compact period, as well as how they compare to other countries in the region. We will also assess how the M&E indicators met or varied from the “goal” end-line targets. Each set of indicators further requires contextual explanation. These are in the form of qualitative assessments, which link quantitative indicators to specific institutional, macro-economic, political economic, corrupt practices and competitive developments. Section 4 below further examines the research questions and provides cross-walks between qualitative and quantitative aspects of the research, which NORC has underway. How key indicators will be used for each of the evaluation research questions is also reviewed.

¹⁵ MCC Cabo Verde M&E Plan

3. Literature Review

3.1 Country context

3.1.1 Summary of the Existing Evidence

3.1.1.1 Cabo Verde Port Sector

As mentioned, maritime transportation is of great importance in Cabo Verde, due to its geographic condition as an archipelago. Three of the countries' nine ports, Praia, Porto Grande, and Porto da Palmeira receive international traffic. The Port of Praia on the island of Santiago is Cabo Verde's busiest, and handles half of Cabo Verde's cargo.

Compared with other sub-Saharan African countries, Cabo Verde's infrastructure is well capitalized. Over the past 10 years, with significant support from donors, the government has invested large sums in the nation's infrastructure. Cabo Verde devotes around \$147 million per year to infrastructure (almost 15 percent of GDP).¹⁶ This is the second highest level of infrastructure spending on the continent.

Cabo Verde's unique features make its significant investment in infrastructure only marginally adequate for driving the nation's economy forward. These unique features include the following:

- **Geographical fragmentation and low population density.** The country has a population of only half a million, which is dispersed across a nine-island archipelago.¹⁷ These conditions require the duplication of infrastructure facilities. For example, despite its small population Cabo Verde has no fewer than four international airports and nine ports.
- **Weak integration with regional trading partners.** In general, relatively little regional trade takes place between and among West African countries.¹⁸ However, with respect to regional trade activity – even among Economic Community of West African States (ECOWAS) countries, Cabo Verde is a left tail outlier. Several conditions undercut its attractiveness as a trading partner for other ECOWAS countries. Cabo Verde-based manufactures are all small in size and are consequently not able to generate economies either of scope or scale. The nation is Portuguese speaking while all of its potential regional trading partners speak either French or English. The small size of Cabo Verde's banking sector and its use of a thinly traded local currency (even one pegged to the Euro) by its exporters and importers translate into high currency-conversion costs. The island economy,

¹⁶ World Bank, Country Partnership Strategy, 2014, http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/12/12/000470435_20141212094153/Rendered/PDF/922480REVISED00UPDATE0BOARD0NUMBERS.pdf

¹⁷ World Bank, Cabo Verde, Country Profile

¹⁸ World Bank, Country Partnership Strategy, 2014, http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/12/12/000470435_20141212094153/Rendered/PDF/922480REVISED00UPDATE0BOARD0NUMBERS.pdf

moreover, is located 500 kilometers (km) off the West African coastline and its sources of comparative advantages are further diminished by its lack of scale in transport logistics.

- **High cost infrastructure investment environment.** Prices for all services are exceptionally high in Cabo Verde including prices for public works development services. High project costs result from the need to import most material inputs for construction projects, relatively small markets and from limited competition, which exists for these projects.
- **Loss of concessional, low-cost development financing.** With its graduation into middle-income status in 2008, Cabo Verde is making the transition from dependence on financial support from development agencies and multilateral lenders to financing dependence on private banks and other international lending institutions during a period of asset retrenchment and cautious lending. The government is struggling to contain its swelling fiscal deficit. The nation's public debt stock has already passed 100% of its GDP making Cabo Verde one of the most debt-burdened countries in Sub-Saharan Africa (SSA).¹⁹ Finding ways to continue to support infrastructure investment while limiting additional deficits is an essential pre-requirement for future growth. At the moment, port services and operations are under a sub-concession contract process. ENAPOR is now the general concessionaire for all the Cabo Verde Ports and is obliged by law to sub-concession all port services and operations where possible. At the moment the operations in Port of Praia, Porto Grande, Port of Sal-Rei and Port Palmeira are under a bid sub-concession process

Another factor affecting the realization of benefits is the way in which Empresa Nacional dos Portos (ENAPOR) operates and the ways in which its policies and management approaches facilitate the pass-through of benefits to port users. ENAPOR is responsible for all port activities in Cabo Verde. It acts as both the port authority *and* operator at the Port of Praia. As mentioned, the Port of Praia is Cabo Verde's busiest port, and along with Porto Grande, handles most of Cabo Verde's international cargo. However, prior to the Compact, the port faced many issues according to the Compact Agreement, including:

- Shortages of space with limited room to expand container operations;
- Poor layout and inadequate breakwater, which reduced the operational effectiveness of the quays, especially during those months when the port experienced significant sea swells;
- Rapidly growing cargo traffic, resulting in inefficient cargo handling and congestion.

3.1.1.2 MCC Compact

According to the MCC Compact Closeout Country Brief for Cabo Verde,²⁰ the MCC Compact was a \$110 million, 5-year program ending October 17, 2010 with three main components:

- **An infrastructure project**, aimed at reducing transport costs by rehabilitating roads, bridges and the Port of Praia;

¹⁹ World Bank, Poverty Credit, 2015, see: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/04/03/000333037_20140403104834/Rendered/INDEX/734680PGD0P127010Box385166B00OUO090.txt

²⁰ MCC Compact Closeout Country Brief. "Cape Verde: Expanding opportunities, improving lives. August 25, 2011.

- **A watershed management and agricultural support project** using water management and soil conservation, along with technology transfers, and access to credit to improve the productivity of agriculture; and
- **A private sector project** aimed at building capacity for sustainable microfinance institutions.

The \$82.7 million infrastructure project²¹ was to construct four bridges and a connecting road on the island of Santo Antão and three roads on the island of Santiago, along with expanding, modernizing, and improving the operational efficiency of the Port of Praia. The goals of this program were to improve transportation, which would in turn provide better connections to social services, increase employment, provide better access to local markets and transport infrastructure. The Compact Closeout Country Brief estimated that 58,728 people and 1,127 formal businesses are direct beneficiaries of the infrastructure component of the project.

The Port of Praia handles fully half of Cabo Verde’s cargo—both domestic inter-island, and international. The investments at the Port of Praia are expected to improve transport and lower input costs for the 347,111 people living on Santiago and 712 import/export firms are estimated to directly benefit from the port project.²²

Due to an increase in construction costs and unanticipated currency fluctuations, the project costs exceeded budget and, as a result, several components had to be modified. One of the project design lessons is for more strict feasibility study preparation during the compact preparation and design. The significant under estimation of the cost of the works and the lower than expected available funding only covered the first phase of the port rehabilitation; the government of Cabo Verde has obtained a \$101.5 million loan to complete the port rehabilitation.

Main bottlenecks at the Port of Praia before the Compact included shortages of space, a poor layout and inadequate breakwater, and rapidly growing traffic, leading to congestion and inefficient handling. To address these issues and bottlenecks, the Compact took a two-pronged approach to address both short-term and long-term issues. The Compact included market studies, geotechnical studies, feasibility studies, an environmental impact assessment and an engineering/design study.

In the short-term, the Compact aimed to improve operational efficiency by moving non-essential operations from the port by developing an off-terminal transport services center near the port. The short-term improvements also included quayside improvements, the construction of a second access road, the construction of a detached breakwater, and development of an environmental management and monitoring plan.

²¹ According to the Compact Agreement, the infrastructure component was originally budgeted for \$78.76 million, of which \$53.74 million were allocated for improvements at the port.

²² It is unclear why the MCC Closeout Brief estimates a higher number of impacted people and firms for the Port of Praia investment compared to the entire infrastructure investment.

For the longer-term, the plan was to expand the port including an expansion of the quay to 450 meters so that it can handle multiple vessels at the same time, and reclaiming land to create a 4+ hectare, two-berth specialized container terminal storage area.

Conditions of the Compact included policy, legal and regulatory reforms including:

- Reorganizing ENAPOR to create a port authority; done
- Creating a regulatory authority. The Port and Maritime Regulator, Agência Marítima e Portuária (AMP), was created in 2014;
- Completing customs modernizations, under way
- Developing the Emergency Management Plan being monitored by ENAPOR; and
- Implementing environmental and social impact mitigation measures under permanent monitoring by ENAPOR.

3.1.2 Gaps in the Literature and in Remaining Data Collection

Since completing its mission to CV the NORC team has attempted to secure the following documents, which it is still waiting to receive:

- Copies of Financial Statements for ENAPOR for three years before and after MCC Investment
- ENAPOR Enabling Legislation
- Copies of Draft Legislation Dealing ENAPOR Restructuring and Reform
- Copies of all Monitoring and Evaluation Reports Subsequent to the Completion of MCC Investment

3.2 Competitiveness

3.2.1 Summary of the existing evidence

To date, most of Praia's traffic has been domestic and hence effectively protected from competition. ENAPOR's policy of port price equalization with prices for all ports under its control being published in a single tariff precludes competition among CV ports. For these reasons measuring operational performance has not been a priority for ENAPOR. Operational efficiency is a major determinant of port competitiveness; the challenges of comparing the performance of the port of Praia are highlighted by the fact that some of the operational key performance indicators, such as dwell time, that are basic for port performance evaluation are not available.

3.2.2 Remaining data collection

The NORC project team is still waiting to receive additional data and literature regarding benchmark comparisons from interlocutors with whom it met in CV. It is also expecting to receive additional information regarding linkages between the MCA project and the

Government's Economic Development Plans that are designed to diversify the island economy's service sectors and specifically to develop the port as a regional transshipment hub.

3.3 Trade Volume

3.3.1 Summary of the existing evidence

Cabo Verde is deeply integrated into the global economy. The country acceded to the WTO in 2008 and since then has progressively lowered its trade barriers. The country's trade to GDP ratio exceeds 100% and in recent years its trade has continued to grow faster than its GDP.²³ In 2013, however, Cabo Verde experienced a significant fall off in its export trade (a 7.07% overall reduction primarily related to tourism).²⁴ It has not yet managed to fully recover from this precipitous decline.

Year over year the island economy has realized a large and increasing merchandise trade deficit. Its merchandise imports exceed its exports by ten times. The island economy's imports are diverse and include energy, consumer products, food, and capital goods. Cabo Verde imports almost everything that its citizens require. Its largest imports include petroleum products, rice, cement, milk and frozen chicken. The International Monetary Fund (IMF) monitors the island economy's current account closely as does the Banco de Cabo Verde. From 1993 until 2015, foreign exchange reserves averaged 17,901.65 CVE Million reaching an all-time high of 48,401.61 CVE Million in February of 2015 and a record low of 784.10 CVE Million in December of 1998.

Diversified export trade is particularly useful for developing a small economy with an extremely limited agricultural product export potential and with low productivity growth in other sectors as has been the case for Cabo Verde. Unfortunately, at least until very recently, the government has made only limited efforts to diversify the economy's export mix, depending instead on tourism, tourism related investment and overseas remittances from ex-patriot Cabo Verdians to buoy its economy. The number of Cabo Verdians domiciled overseas exceeds the number domiciled in the country.

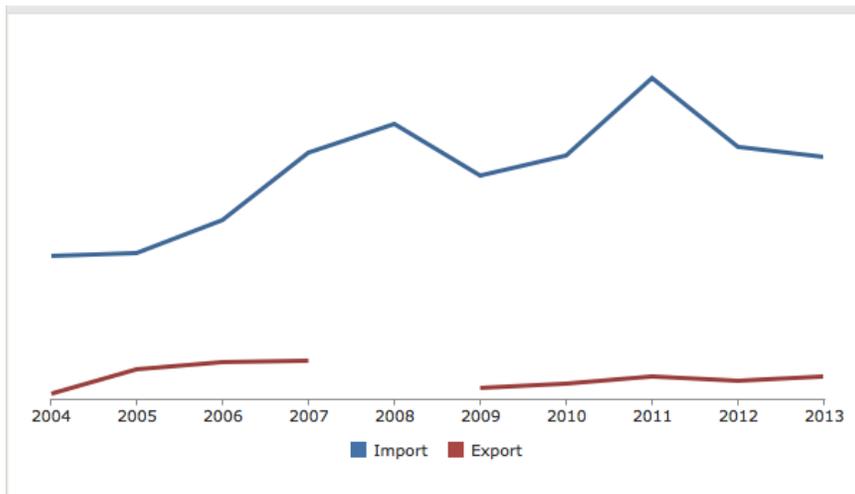
The country's trading partners have been as limited as its exports. Major exports include frozen yellowfin tuna, frozen mackerel, other fish products, and upper shoe components and its major trading partners include Portugal, the Netherlands and Spain.²⁵ See the tables below.

²³ Michigan State University, Global Edge, at: <http://globaledge.msu.edu/tools-and-data/test-your-knowledge>

²⁴ *ibid*

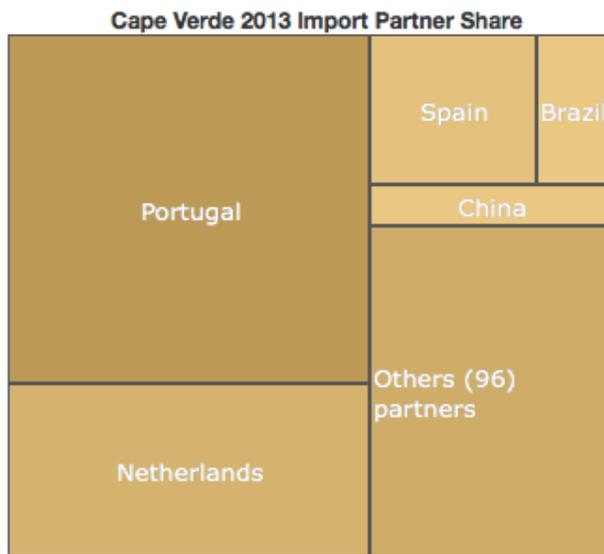
²⁵ *ibid*

Figure 2: Cabo Verde's Import/Export Gap



Source: World Bank Trade Statistics, at: <http://wits.worldbank.org/CountryProfile/en/Country/CPV/Year/2013/Summary>

Figure 3: Cabo Verde's Primary Trade Partners



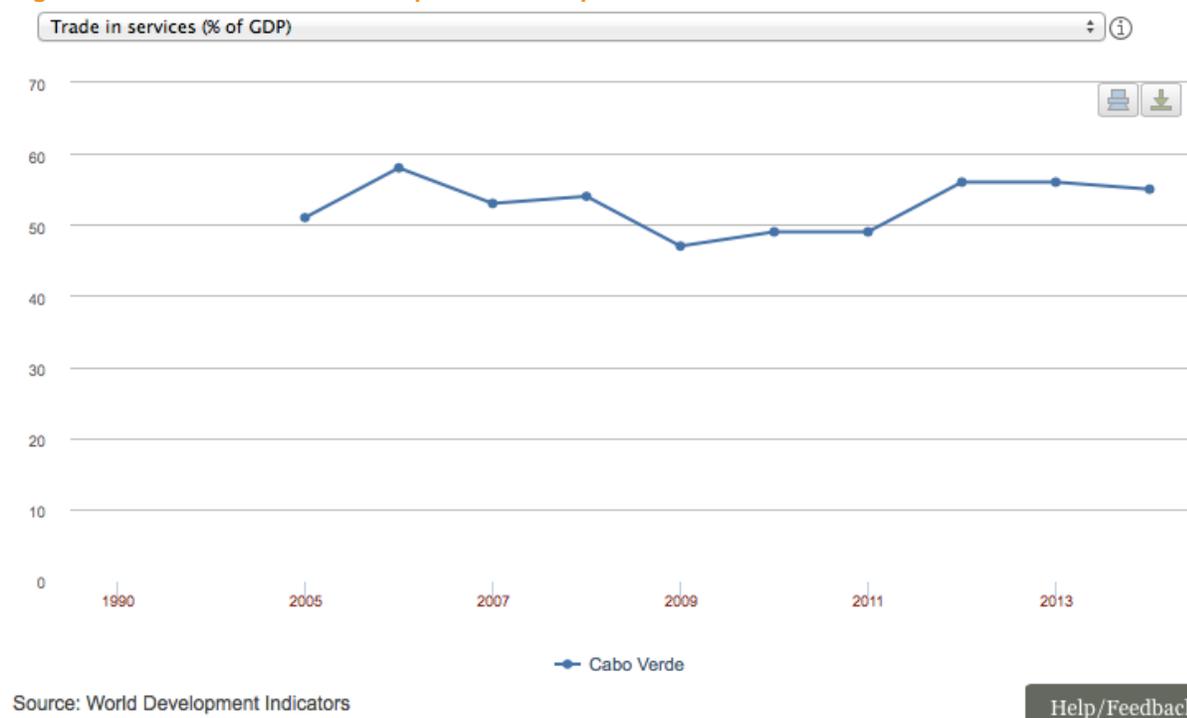
Source: World Integrated Trade Solutions, at: <http://wits.worldbank.org/CountryProfile/en/Country/CPV/Year/2013/TradeFlow/Export/Partner/all/>

By far the most significant export is tourism, which accounts for 20% of GDP.²⁶ The entire service sector—most of which involves tourism and tourism related services—accounts for a larger share of total exports than does the country's export of merchandise. See the graph below.

²⁶ <http://wits.worldbank.org/CountryProfile/en/Country/CPV/StartYear/2010/EndYear/2014/Indicator/BG-GSR-NFSV-GD-ZS>

The government is working to activate the country's 'hidden' assets and to diversify its economy. For example, it is pushing to market Cabo Verde to English-speaking tourists, through the tourist board's 'CapeVerde.com' campaign and other outreach initiatives. The government's efforts to ensure that the country has sufficient capacity to host an influx of tourists during peak seasons has succeeded in attracting foreign investment and building out new hotels and restaurants. The African Development Bank (AfDB) has estimated that between 2000 and 2010 the country's hotel and restaurant industry grew almost six times faster than the national economy and thus enabled the county to weather the recent financial crises.²⁷

Figure 4: Share of service sector export to total exports



3.4 Operational Efficiency

3.4.1 Summary of the existing evidence

Operational information for the Port of Praia is fragmented and outdated. This section of the report is based on existing documents released by ENAPOR²⁸ and available through other sources²⁹. This preliminary review of operational efficiency includes an assessment of containerized, general, solid bulk, liquid bulk and cabotage. The analysis is based on standard indicators of operational performance; the definition of these indicators doesn't necessarily match with the

²⁷ Country Development Strategy, at: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2014-2018_-_Cape_Verde_Country_Strategy_Paper__Draft_Version_.pdf

²⁸ ENAPOR statistics online repository Estatísticas Porto de Praia <http://www.enapor.cv/documentos/>

²⁹ An Assessment of the Port of Praia, Cape Verde: A Pre-Feasibility Study, The Louis Berger Group, 2005

definition of performance indicators to be used in the final assessment of port operational efficiency. The indicators used for the analysis:

1. Vessel port time defined as elapsed time from entrance to exit to/from the port.
2. Berth time defined as time that the vessels spend at berth including idle time and operation time.
3. Vessel waiting time defined as the difference between one and two.
4. Service time determined by the time in which operations of loading or unloading are taking place
5. Productivity defined as average of tons moved per hour of service.
6. Gang productivity determined by the number of tons moved per gang per hour of service.
7. Productivity per call in terms of number of tons moved and berth time.
8. Total vessel operations time ratio determined by the ratio between vessel port time and service time.
9. Vessels operation time ratio at berth indicated by the fraction between service time and berth time.

The following preliminary analysis is based on publicly available port statistics published by ENAPOR corresponding to the years between 2009 and 2012.

Containerized cargo

Vessel time for container vessels from arrival to exit to/from the port fluctuates between 24 and 36 hours. Waiting time for berthing is between five and seven hours and berth time is between 18 and 23 hours; time of operation is between 12 and 15 hours.

The port is currently handling between 25,000 and 30,000 TEUs per year. The average tons of containerized cargo moved during each vessel call oscillates between 800 and 1200. On average the gang productivity is between 115 and 145 tons per hour.

Container vessels are operated in the same berth as general cargo and bulk vessels.

General cargo

Vessel time for general cargo vessels from arrival to exit to/from the port fluctuates between 90 and 130 hours. Waiting time for berthing is between 7 and 25 hours and berth time is between 95 and 115 hours; time of operation is between 30 and 45 hours.

The port is currently handling between 70,000 and 100,000 tons per year. The average tons of cargo moved during each vessel call oscillates between 1100 and 1500. On average the gang productivity is between 30 and 45 tons per hour.

High berthing times for general cargo vessels create high levels of berth occupation and contribute significantly to increasing waiting times for berth availability.

Bulk cargo

Cement and cereals are the majority of bulk cargo handled at the port of Praia. The operation for these two commodities is significantly different and therefore deserves a separate assessment.

The port is currently handling between 150,000 and 180,000 tons per year. For cement, vessel time from arrival to exit was on average between 130 and 165 hours of which approximately 50 to 70% are dedicated to operations. Berth time is between 110 and 130 hours and therefore average waiting time for berth is between 20 and 50 hours. The unloading productivity is between 100 and 130 tons per hour.

Vessels carrying cereals register time from arrival to exit between 110 and 145 hours of which approximately 35 to 60% are dedicated to operations. Berth time is between 90 and 130 hours and therefore average waiting time for berth is between 20 and 40 hours. The unloading productivity is between 25 and 45 tons per hour.

3.4.2 Gaps in the Literature

As previously mentioned, information on current port operations is fragmented and outdated. The existing information comes from multiple sources and therefore establishing the consistency between measurement methodologies and performance definitions is not possible. Available data provides a starting point for understanding descriptive characteristics of port services and operational practices, however, it doesn't allow for performing an in-depth performance assessment.

3.5 Costs

3.5.1 Summary of the existing evidence

The MCC's internal, ex-ante review of the project identified the following direct beneficiaries of the project: Ship owners, firms operating within the Port and truck operators transporting to and from the port. In addition, it identified indirect beneficiaries as consumers, both rural and urban.

The form, which these benefits were anticipated to take, included lessened congestion at the port terminal, reduced shipment costs and, through these cost reductions, lower prices for consumer goods and for productive inputs into local manufacturing. The main inter-island ferry service serving Praia has been recently privatized. A subsidy paid to the operator ensures minimum service on low-demand routes. Such connections are important to integrate the domestic market and also from a social point of view.

Before improvements were made to the port, Praia operated at or near its full capacity, so opportunities for rent collection existed among the principle participants in the transactions that took place subsequent to the port's expansion. Benefit in the form of rents does not always or indeed usually flow in a rational, predicable and controllable path. As a result assessing the ultimate incidence of benefit flows requires a great deal of forensic assessment of before and after economic value.

3.5.2 Gaps in the Literature

There is no reliable information regarding dwell time in the Port of Praia. We have collected the entry/exit log of containers from 2009 to 2013. This data will be used to calculate dwell time of containers during the period of implementation of the MCC investments, on the demurrage and ship delay time incurred before and after, on the number of days delay incurred by truck operator while waiting for their next load before and after as well as on the after charges absorbed by beneficial owner of cargoes before and after.

3.6 Integration of domestic markets

3.6.1 Summary of the existing evidence

Extending the benefits of containerization to inland destinations and to inter-island trade affords significant incremental benefits to exporters and importers. Port infrastructure investment and port reform, more generally, create economic value only to the extent that they facilitate faster, less expensive and more reliable trade. Port Authorities succeed in their trade development missions only to the extent that they are able to coordinate effectively with other agencies and departments of government, which oversee inland transportation, cross border movements of cargo and customs operations in order to achieve faster, less costly, more reliable cargo movement goals.

Progressive and forward-looking container shipping lines share these objectives. They would prefer to develop seamless intermodal through rates and services beyond the Port of Praia to various locations within Cabo Verde where large volumes of traffic are generated. They would prefer to compete on the basis of superior service rather than on the basis of lowest price and to that end to facilitate the development of intermodal through services. In so doing, shipping lines would provide a complement to port investment and multiply the benefits which port investments are able to achieve. These complementary benefits would accrue from shipping line investment in container freight stations (CFS), where container cargoes could clear, inter-island through services and through rates beyond initial embarkation terminals which allow containerized freight to move quickly on a joint interline intermodal bill of lading to their final destination and bonded transit shipments by ferry and truck to and from outer islands.

All of these service developments require collaboration between major shipping lines, feeder lines, and inland transport companies and customs services. However, in all three cases, until basic changes are made in the way in which inter-island services are offered, it is ENAPOR which is the most natural leading change agent.

Praia has become the center for the redistribution of products within the island economy and the location which importer/redistributors prefer to invest in redistribution facilities. The NORC mission visited several of these facilities and interviewed their management, including ones for the receipt of bulk cement, one for the receipt of petroleum products, one for the receipt of food grains and one for the receipt of canned and dry food products and other consumer non-durables. As a result of the concentration of key commodity distribution in Praia, an integrated basis-point pricing system with wholesale prices is set in Praia.

3.6.2 Gaps in the Literature

The NORC team has secured most of the data which it requires to address market integration issues. However, data which describe future plans to develop Praia into a regional distribution center and responses to a set of questions with the same intent have not yet been forthcoming.

3.7 Employment

3.7.1 Summary of the existing evidence

The operational personnel of the port is constituted by approximately 300 stevedores in charge of loading and unloading vessel operations. In addition there are approximately 50 employees in charge of operation and maintenance of equipment and 80 in charge of storage and warehousing. There have been several attempts to link port personnel remuneration with operational performance, and temporary agreements have been negotiated with port unions. The current remuneration framework is unclear.

Vessel loading and unloading operations are performed by gangs; the number of individuals per gang varies depending on the vessel, cargo type and arrangement between stevedoring company and shipping line. Operations are conducted between 8 AM and 5 PM during regular business days, with a one-hour interruption around noon time, and between 8 AM and 12 PM on Saturdays. Stevedoring activities conducted outside these hours are conducted at an additional charge/ extra hours.

3.8 Corruption

Corruption is not a serious concern in CV. The inland economies level of corruption is among the lowest in SSA. Indeed, it is CV's low level of corruption that makes it a particularly attractive hub for regional transshipment and regional trade facilitation including better security, drugs, and arms security.

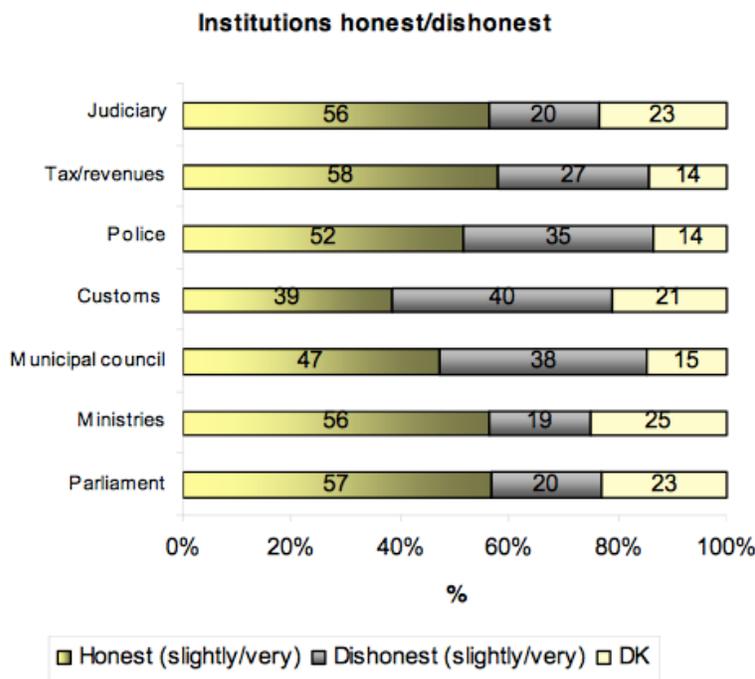
3.8.1 Summary of the existing evidence

Transparency International ranks Cabo Verde at the 75th percentile of countries in terms of its corruption free environment and rates it 42nd out of the 177 countries which it has surveyed with respect to private sector perceptions of corruption.³⁰ Significantly, the incidence of corruption appears to be declining in Cabo Verde. The World Bank survey of corrupt practices complete in 2010 indicates an improvement in each of the corrupt practices categories assessed, between 2006 and 2009.

³⁰ <https://www.transparency.org/country/#CPV>

The UN recently completed a study of corruption in Cabo Verde, which drills down into causes, and circumstances of corruption within the country.³¹ The study found that the private sector positively evaluated most public institutions in the country. The majority of respondents considered them either “fairly” or “very honest”. The only exceptions were customs and municipal councils, both of which received less than 50% positive responses.³² The table below reviews the study’s findings with regards to honest vs. dishonest institutions.

Figure 5: Proportion of survey respondents considering public institutions honest or dishonest



Source: <https://www.unodc.org/documents/data-and-analysis/dfa/Study-crime-corruption-english.pdf>

Successive governments have progressively strengthened the basic institutional framework for a market economy and, as a result, Cabo Verde is considered one of the most stable democracies in Africa, although petty corruption has still managed to persist within specific institutions. For the UN study, 5% of the citizens interviewed in urban areas throughout Cabo Verde said that they had been asked to pay a bribe to a public official.³³ Significantly, 8.5% of the citizens interviewed in Praia had been asked to make extra payments in order to get a service that should have been delivered for free.³⁴

The incidence of corruption that citizens reported most frequently involved customs officials (27% of cases), followed by police officers and then other government officials (12% of cases for each category).³⁵ In the perception of the public, politicians were most likely to accept bribes,

³¹ <https://www.unodc.org/documents/data-and-analysis/dfa/Study-crime-corruption-english.pdf>

³² <https://www.unodc.org/documents/data-and-analysis/dfa/Study-crime-corruption-english.pdf>

³³ *ibid*

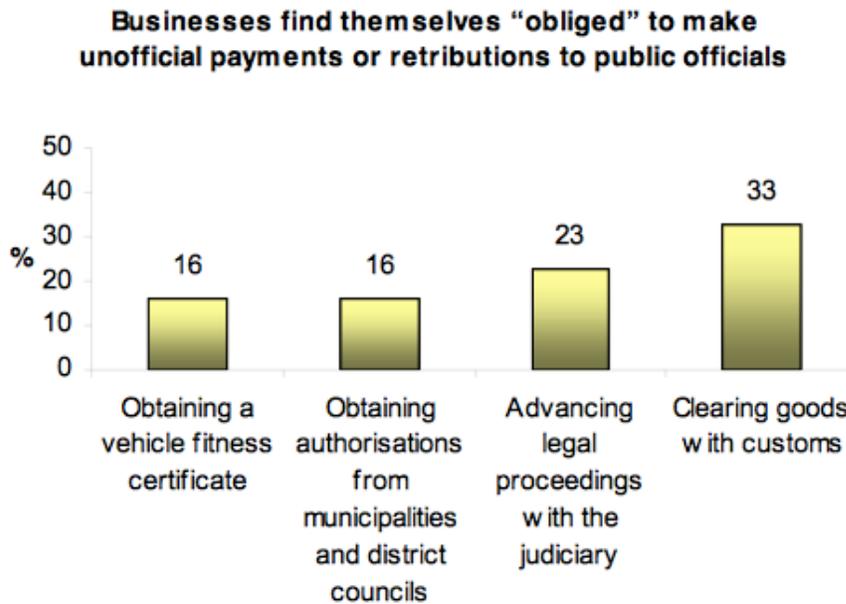
³⁴ <https://www.unodc.org/documents/data-and-analysis/dfa/Study-crime-corruption-english.pdf>

³⁵ *ibid*

followed by customs and government officials. Police officers ranked sixth, preceded by elected representatives, both at the city council and at the state level. With that said it is also worth pointing out that the type of bribery/corruption experience that is most likely to be captured in a survey involves “street level” corruption, i.e. cases generally involving small amounts of cash or gifts.

Even though the incidence of corruption is relatively low the UN study revealed that the private sector in Cabo Verde has great concern about corruption, which is perceived as the second major obstacle to doing business in the country, after crime and insecurity. However, businesses did not perceive that requests for “unofficial” payments were frequent among public institutions in the country. Exceptions were customs and the judiciary, which were considered by one-third and one-quarter of the respondents respectively as likely to oblige businesses to make unofficial payments or retributions to get things done. All other public institutions mentioned in the questionnaire were not considered bribery-prone by the business sector. Indeed, only 5 businesses reported having been asked to pay bribes and in 4 cases this had to do with customs procedures.

Figure 6: Proportion of respondents subject to bribery



Source: <https://www.unodc.org/documents/data-and-analysis/dfa/Study-crime-corruption-english.pdf>

3.9 Institutional Issues

3.9.1 Summary of the existing evidence

Three models of port management are common:

- the management concession model, in which the public sector hands over the entire management and operation of the port to the private sector;
- the service port model, where the port authority is also the operator of the cargo-handling and other frontline functions under a centralized organizational structure and private participation is circumscribed to secondary services; and
- the landlord port model, in which the public sector withdraws from front-line cargo-handling operations, allowing these to be concessioned to the private sector, while the port authority, functioning on a corporatized autonomous basis, focuses on estate management, navigation, and planning.

In the intermediate model, the port authority rents on-dock storage and warehouse space to privately owned, licensed stevedoring companies, which are contracted by shipping lines to provide handling equipment, hire casual labor, work the vessels, and store and deliver cargo. The landlord model is now widely regarded as the preferred institutional set-up for the sector. However, its adoption in Sub-Saharan Africa has so far been confined to Nigeria and Ghana alone.

Cabo Verde has been considering a transition from a service to landlord port model. All ports are state-owned and managed by the state port authority, ENAPOR, and operated under the service port concept. The government decided some time ago to privatize the ENAPOR management. However, the transformation process has met many obstacles. The government's reform plans include the adoption of legislation to create a port administration (succeeding ENAPOR) that would operate under a landlord model and regulate port operations, while frontline port activities would be delegated to the private sector via management or concession contracts. Systems of control and management control directly affect the scale and scope of potential benefits that can be realized from any specific investment in port infrastructure.

Institutional reform is a prerequisite for enhanced competitiveness.³⁶ Positive signs of reform have appeared in West Africa, and the pace of reform appears to be increasing. However, much remains to be done. In general areas of additional opportunity include legislation, restructuring, policy oversight, and private sector involvement. Being able to modernize and adapt the institutional software, which ultimately controls a port and drives its change program, is sometimes difficult politically. However, when a port attempts to change the way in which it operates as ENAPOR has done by rededicating land use, reassigning functions and re-establishing resource assignment and allocation methods as it has in Praia, it is nonetheless essential.

If done correctly, updating institutional arrangements is much less costly than is investment in

³⁶ An analogy can be aptly applied to Port Reform generally, which references the way in which a computer operates...with two essential elements...hardware and software. The software element applies, affects, manages and directs the hardware element. The two elements are complementary and both are essential for improved port competitiveness. In the context of port operations just as you suggest software involves institutional arrangements generally and more specifically the ability to provide rules and building capacity to implement them, which are appropriate to competitive circumstances, governance which is fair and well advised, oversight which entails multiple levels of independent review, accountability which relates to real incentives and real penalties and to management processes which are revealed in open and publicly accessible financial statements.

physical infrastructure and, over the long term, more effective in improving port competitiveness. Conversely, if done incorrectly, it can have the opposite effect and actually pull a port backward. Ideally, upgrading port institutional software and renewing its hardware should come in tandem. Institutional upgrading is complementary and multiplicative of investment in port infrastructure.

Institutional arrangements and organizational structures directly affect the speed, the value created, and the level of confidence within the larger port community with which decisions are made. Institutional arrangements represent the software element of port operations. Just as with computer programming when software is appropriately designed it can cause hardware to operate much more productively. Building capacity to implement oversight and policies are essential complement to institutional reform.

Too many reporting levels make ports slow reacting and bureaucratic, while too few reporting levels or lack of professionally competent managers make port authorities simply reactive to current events, uncertain with regard to strategic direction and ultimately ineffective. Three ingredients are essential for the development of effective institutional software:

- experienced and competent managers,
- clearly defined responsibilities and accountabilities, and
- sufficient levels of checks and balances to assure that public resources are delivering public goods efficiently.
- Ongoing capacity building through training and investment in human resources,

Systematic and well-coordinated management processes are important, as well. Efficiency gains and improvements in service can both be achieved and tradeoffs between the two shifted through the embrace of superior procedural, managerial and administrative processes and, importantly, through the strengthening of port governance and the tightening of internal controls.

Improvements made in these areas can and do affect decision-making. When taken together and synchronized through coherent governance they determine just how competitive a port can become, given the resources at its disposal. Essential decision issues which are consequently affected include:

- service/cost tradeoffs,
- capital budgeting decisions;
- work scheduling and the deployment of manpower;
- efficient inland transport linkages to the hinterland, and
- types and levels of “outsourcing”, e.g. the engagement of private service providers in lieu of public sector service providers.

By understanding how decisions are made in these five decision areas within the Port of Praia management ecosystem, the project team anticipates that it will be able to drill down enough to understand basic institutional arrangements, which can and should support increased competitiveness.

Looking into the ENAPOR from the outside, it is unclear where decision-making authority and accountability actually lie, particularly regarding high-level decisions and ones effecting basic strategic directions. The division of responsibilities between ENAPOR, the Ministry of Maritime Services, the Ministry of Transport, the Ministry of Finance, and the Presidency, for example, is unclear and may, indeed, appear to vary from issue to issue. Understanding the relationship between port reform and the execution of the regional ocean shipping redistribution center strategy is particularly important and, in this context, the specific role, which a reformed Praia Port might plan, is particularly germane to this assignment.

Thus, it would be useful for the project team to understand the actual decision processes, which the government pursued in deciding how to develop and apply its port assets to advancing its national economic development strategy.

Significant issues also exist about human resource capacity. Implementation of radical reforms in an institutional environment where only limited capacity exists to implement these reforms is extremely difficult, particularly when significant resistance is incurred.

The formal authorities and responsibilities entrusted in ENAPOR and devolved to the management of the Port of Praia are important considerations in determining whether the Port's management has sufficient powers to provide effective oversight over its upgraded and expanded operations. However, other factors also directly affect the management effectiveness, confidence and the speed with which ENAPOR management is able to make timely decisions. These additional factors include the actual relationship between the Port Authority DG, his board, the Minister of Transport and other high level elected officials. Port Authorities in most developing countries are profoundly affected by the conditions in the political economy in which they operate and by other considerations (internal and external governance issues) that limit the ability to control resources. Some of these include limitations with respect to allocating and assigning port labor and insisting that the operators employed by private companies are adequately trained in the use of new cargo handling technologies.

3.9.2 Gaps in the Literature

Most of the background information, which the NORC team requires to address institutional issues, was secured during the mission. Only, formal responses to questions posed to the special committee responsible for PPP development in the Transport Ministry has not yet forth coming and neither have copies of the bidding documents which were under preparation during the NORC team's mission

4. Evaluation Design

4.1 Policy Relevance of the Evaluation

4.1.1 Infrastructure Improvements

The addition and rehabilitation of port infrastructure figures prominently in large-donor interventions and in the development literature. Djankov, Freund, and Pham, for example, find that each additional day required for a shipment imposes an “extra” economic distance equivalent to 70 km per day, thereby effectively moving markets further away.³⁷ Kent and Fox show that port inefficiencies, if removed, can increase GDP growth by nearly 0.5 percent.³⁸ This is especially the case for Cabo Verde, whose economy is profoundly dependent on its ports due to the fact that the country is composed of islands. Have the myriad of claims of social and economic benefits from this expensive allocation of resources materialized in the case of Cabo Verde? And can they be convincingly attributed to the MCC Compact? The importance for policy of the answers to such questions is why the present evaluation is so relevant and timely.

4.1.2 Institutional and Organizational Improvements

A critical area for the evaluation is to determine whether the physical port improvements were adequately supported by institutional reforms and not impeded by oligopolistic market structure, especially where hoped-for performance benefits were not realized. A related issue involves the planning process and accountability for that process. This is important because the external consultant lead planning process resulted in the construction of port capacity in Praia which significantly exceeds current levels of demand and perhaps/likely future demand growth for an extended period.

Institutional arrangements and accountabilities not only affect the effectiveness of capital planning but also directly affect the speed, the value created, and the level of confidence within the larger port community with which decisions are made. Institutional arrangements represent the software element of port operations. Too many reporting levels make ports slow reacting and bureaucratic; too few reporting levels or lack of professionally competent managers make port authorities simply reactive to current events, uncertain with regard to strategic direction, and ultimately ineffective. Three ingredients are essential for the development of effective institutional software:

- experienced and competent managers;
- clearly defined responsibilities and accountabilities; and

³⁷ Djankov, Simeon, Caroline Freund, Cong S. Pham, *Trading on Time*, World Bank, Washington, D.C., 2006.

³⁸ Kent, Paul E. and Alan Fox, “Is Puerto Limon a Real Lemon? The Impact of Port Inefficiency on a National Economy”, in *The International Handbook of Maritime Economics*, edited by Kevin Cullinane, 2011.

- sufficient levels of checks and balances to assure that public resources are delivering public goods efficiently.

Systematic and well-coordinated management processes are important, as well. Efficiency gains and improvements in service can both be achieved and trade-offs between the two shifted through the embrace of superior procedural, managerial and administrative processes and, importantly, through the strengthening of port governance and the tightening of internal controls.

Improvements made in these areas can and do affect decision-making. When taken together and synchronized through coherent governance they determine just how competitive a port can become, given the resources at its disposal. Essential decision issues which are consequently affected include:

- service/cost tradeoffs;
- capital budgeting decisions;
- work scheduling and the deployment of manpower;
- efficient inland transport linkages to the hinterland; and
- types and levels of “outsourcing”, e.g., the engagement of private service providers in lieu of public sector service providers.

By understanding how decisions are made in these five decision areas within the Port of Praia management ecosystem, the project team anticipates that it will be able to drill down deeply enough to understand basic institutional arrangements, which can and should support increased competitiveness.

4.1.3 Future MCC Procurements

The processes through which MCC investments are made can have residual impacts on ports which are as important as first-order outcomes. Learning how to engage private partners, for example, in support of the strategic mission of the port can leverage public capital budgets and provide a means for acquiring critical port management skills. Similarly, preparing EIS’s which account for the erosion and channel shifting impacts of investments can avoid much larger subsequent rehabilitation and land stabilization costs.

The MCC has signed a second compact with Cabo Verde. As such, it will be important to identify areas where the first compact performed well and areas which can be improved, so that these issues can be taken into consideration during compact design implementation.

4.2 Evaluation Overview

4.2.1 Summary of Evaluation Questions and Outcomes

The project team grouped together the evaluation questions proposed by MCC by theme and type of analysis as shown in Table 3. The questions and the methodology that will be used to answer them is examined in more detail in the remainder of Section 4.

Table 3: Research Questions and Analysis Methodologies

Research Question	Analysis Methodology					
	Shipping/Market Analysis	Trade Analysis	Institutional Assessment	Port Operational Analysis	Financial Analysis	Tariff Analysis
1. Competitiveness						
a. How has the competitiveness of the Port evolved since 2006/2005?		■	■	■		
b. Among the ports in the region, how has the competitiveness of the Port changed following completion of the works?	■					■
2. Trade Volume						
a. What is the relative change in the level of domestic and international traffic, volume of container and bulk maritime trade, value of trade (USD) and growth trends in relevant sectors before and after the improvements to the port?		■	■	■		
b. To what extent can changes in trade volume be attributable to MCC's intervention?		■		■	■	■
3. Operational Efficiency						
a. To what extent do the completed works mitigate/resolve observed constraints to port capacity and improve the efficiency of port operations as identified in due diligence and feasibility studies?		■	■	■		
b. How has the project affected the Port's operational efficiency? What is the percentage change in the overall productivity of the port following completion of the works?			■	■		
c. What percentage change in the port's principal measures of operational efficiency can be observed following completion of the works?				■		

Research Question	Analysis Methodology					
	Shipping/Market Analysis	Trade Analysis	Institutional Assessment	Port Operational Analysis	Financial Analysis	Tariff Analysis
d. Has the level of congestion in the Port changed? If there has been change, what has caused the change?				■		
4. Costs						
a. What percentage change in the port’s annual total direct costs (shipping, cargo handling and land transportation, etc.) can be observed following completion of the works?			■		■	
b. What is the relative change in the cost of doing business to importers, exporters, agents, transportation companies, and other businesses sensitive to port improvements?						■
5. Integration of Internal Markets						
a. To what extent has the port project contributed to achieving an overall compact objective of increasing the integration of internal markets through inter-island trade?			■			
6. Employment						
a. What net change can be observed in employment among the permanent and non-permanent employees in the port sector following completion of the works?			■	■		
7. Unanticipated Impacts						
a. What were unanticipated positive and negative impacts of port investments? What were unanticipated institutional, economic, et al. positive and negative impacts of port investments?			■	■		
8. Monitoring/Process Questions						
a. Are investments being sustained? If investments are not being used or sustained, why not? What can be done about it?			■			
b. What changes, if any, in the tariff structure can be observed?			■			
10. Lessons Learned/Recommendations						
a. What are key lessons learned, both in terms of the project performance (were the right investments made?) as well as the implementation of the evaluation study?			■			
b. What recommendations with respect to engineering, economic logic, and institutional reform can be made for future MCC port investments and evaluations?			■			

4.2.2 Summary of Evaluation Approach

The evaluation approach which the NORC team has adopted entails two sets of quantitative comparisons: i) critical measures of mission success before and after the MCC investment and ii) comparisons of mission-critical performance vis-a-vis benchmarks or “best in class” global standards for ports of the same size as Praia. Quantitative assessments will be contextualized, explained and elaborated using qualitative analysis in the forms of expert opinions solicited during interviews and perspectives and application of survey data from several sources.

4.2.2.1 Approach to Evaluating Operational Performance and Efficiency

The assessment of changes in operational performance and efficiency will focus on two categories of parameters related to operational efficiency and level of service. Operational efficiency assesses how productively the port uses its assets, as measured by ship productivity, crane productivity, and berth throughput productivity. Level of service assesses the quality of service provided at the port by looking at indicators such as ship delay, truck delay, and truck turn time. Both areas of assessment require data from before and after the investment. The field work and follow-up conversations with stakeholders is essential for collecting relevant and good quality data for both time periods, and preferably in time-series form. Collecting robust and continuous before-and-after data will be their primary objective for all datasets. However, for some datasets like congestion or pricing, this may prove difficult. In these instances the project team will resort to more subjective assessments provided by reliable witnesses and based on ranking or order methodology to assure comparability among sources.

4.2.2.2 Approach to Evaluating Institutional Control Issues

Institutions set rules and regulate the ways in which the several markets which converge to define a port ecosystem either synchronize and mutual support each other or fail to synchronize. These diverse markets include ones for port labor, ones for information, and ones for expert third party provided services. The project team will test the several parameters which typically define the institutional capacity of a port. These include: i) protocols affecting openness and contestability, ii) professional and competent port managers; iii) clearly defined and mutually complementary responsibilities and accountabilities; iv) sufficient checks & balances to assure the efficient production of public goods.

In order to address these issues the project team will investigate:

- i) What authorities and controls over port operations exist within the ENAPOR?
- ii) What governance mechanisms apply to overseeing ENAPOR management decision-making?
- iii) What is the command and control relationship between ENAPOR and the Port of Praia’ management?

- iv) What are the competencies and capabilities of ENAPOR's management team?
- v) What additional reforms are required in order to increase the productivity of the MCC investment?
- vi) What useful lessons can be taken away from MCC project implementation with respect to ENAPOR institutional developments?

4.3 Port Operational Analysis

4.3.1 Evaluation Questions and Outcomes

Port operational analysis is relevant to answer two important research questions:

- How has the competitiveness of the port evolved?
- To what extent do the completed works mitigate/resolve observed constraints to port capacity and improve the efficiency of port operations?

To address these questions, we propose respectively:

- A detailed analysis of port performance based on the calculation of key indicators; and
- The estimation of port capacity based on the disaggregation of port infrastructure components to estimate past and current capacity and determine which constraints ("bottlenecks") were resolved as a result of MCC's intervention.

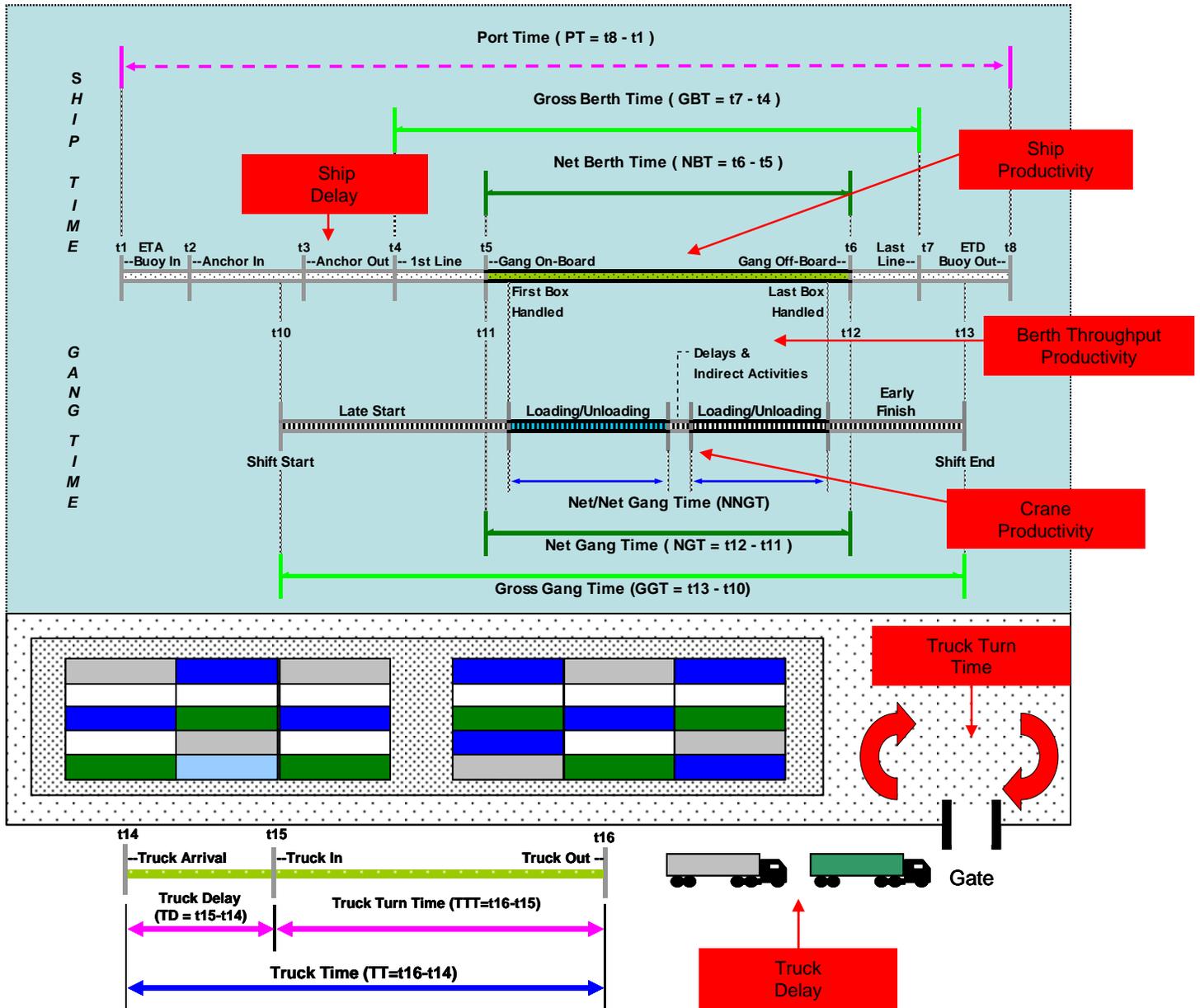
4.3.2 Methodology

As a first but crucial step in orienting the Praia port evaluation we propose to follow the disaggregation of port performance developed in Kent and Ashar (2010)³⁹ and applied in our work on the regulatory module of the World Bank's Port Reform Toolkit. Kent and Ashar propose two categories of indicators, those for operational efficiency and those for level of service (LOS). Operational efficiency pertains to the actual use of assets, while LOS pertains to the quality of service provided to users of the assets, mainly cargo and ship owners and their representatives. The operational efficiency indicators are ship productivity, crane productivity, and berth throughput productivity. The LOS indicators are ship delay, truck delay, and truck turn time. For attracting cargo (generating higher throughputs), however, we are mainly interested in the time required to serve the vessel at the berth and LOS that the shippers experience. On the basis of these indicators, we can assess how ranges of performance have changed over the course of the

³⁹ Kent, Paul E. and Asaf Ashar, 2010, Indicators for port concession contracts and regulation: the Colombian case. Paper presented at the Annual Conference of the International Association of Maritime Economists, Lisbon, Portugal.

Compact period, as well as how they compare to other ports in the region based on regional and/or international benchmarks. The detailed description of these indicators follows.

Figure 7: Port Time Accounting System and Operational and Level of Service Indicators



Source: Kent and Ashar (2010)

4.3.2.1 Operational Efficiency

Ship Productivity. Probably the most important measure of terminal performance, ship productivity is based on the number of moves per hour during a vessel's *net berth time* (see Figure 7). Net berth time occurs between the period when the first gang appears on the vessel and the departure of the last gang from the vessel. Ship productivity is calculated by dividing the number

of moves by net berth time measured in hours (moves/hour). The more cranes attending a vessel, then the more gangs that work the vessel. So the calculation is the sum of the moves handled by all the cranes (or by all the gangs). Because of varying degrees of productivity (generally, the higher the loading/discharge volume), the calculation of ship productivity should distinguish larger volumes from smaller volumes moved.

Crane Productivity. Crane productivity is affected by the skill levels of the port workers as well as the technology that is applied. Gantry crane productivity is superior to mobile crane productivity, and mobile crane productivity is superior to ship's gear (There are no gantry or mobile cranes operating at Praia, operations are conducted with ship's gear). The calculation of crane productivity should therefore be distinguished by the types of cranes that load or discharge the containers. Crane productivity is calculated by dividing the number of crane moves by the period of time between the first "pick" (first box handled) and the point of rest of the last move (either on the vessel or onto a truck at the berth). Crane productivity is reported as number of moves per crane-hour.

Berth Throughput Productivity. Berth utilization (the percent of time the berth is occupied) can be represented by the percentage of time that the berth is occupied or the amount of throughput at the berth. However, as vessel sizes have increased, berth sizes are no longer uniform. The length overall (LOA) of ships employed by an intra-West Africa feeder service might be half that of mainline vessels. Today's larger vessels can take 1.5 ("traditional" sized) berths, so as a practical matter berth utilization can be better represented by throughput per *berth-meter*. And, since throughput is usually measured in TEUs and not in moves, the TEUs per berth-meter can be adjusted to reflect the "average" size per move.

4.3.2.2 Level of Service

Ship Delay. Ship delay, a measure reflecting the availability of berth and gangs, is calculated by subtracting the original scheduled time for the vessel's arrival at the port from the time the vessel arrives at the berth (second line tied) and is ready to work. Zero delay is ideal, but a delay of up to four hours can generally be absorbed into the vessel's itinerary. Delays beyond four hours usually mean that carriers will impose congestion surcharges as such delays cannot be absorbed in the itinerary. The calculation assumes that the ship arrives on schedule and it incorporates a provision for sailing time between buoy and berth, mooring, and clearances. For example, ships are expected to arrive at the pilot station at least two hours before the planned "ready to work" time. Delayed arrival of ships should not be considered when calculating ship delay, as vessel arrival time is outside the control of terminal operators; in vessel window systems, time slots are negotiated between the terminal operator and the carrier.

Truck Delay. The difference between the truck appointment time and commencement of gate processing is calculated as truck delay. Truck delay is more readily calculated if there is a truck appointment system. Otherwise, truck operators can indicate what the typical gate queuing time is. For terminals that have truck appointment systems, the calculation of truck delay assumes the truck arrives (pre-gate) ideally 30 minutes before the appointment time.

Truck Turn Time. This indicator refers to the time required for the truck to enter the terminal, pick up or discharge its load, and exit the terminal. As the measure involves gate processing, travelling to the stack, waiting for yard equipment, loading/unloading, travelling back to the gate, and gate processing on the way out, it also serves as a proxy measure of the efficiency of the storage operation. Ideally, truck turn time would not exceed one hour, but exceeding this time is justified if the truck is engaged in both discharge and loading inside the terminal, requiring about 30 minutes more. However, in test runs of this indicator, we find that data distinguishing trucks that are only loading, only discharging, or both discharging and loading are not readily available.

In the interest of easing the data collection process when data is difficult to obtain or detailed historic information is scarce, Kent, Ayzanoa and Ashar (2014)⁴⁰ proposed to narrow the list of indicators by applying principal components analysis, which identifies the range of the selected indicators most reflective of overall performance and provides the basis for ranking terminals relative to operational performance. The end result is the emergence of two indicators, ship productivity and crane productivity, which researchers can focus on for performance monitoring, thereby confirming the potential for widespread application of port performance measurement, along with the ranking of terminals that are assessed. As the ultimate indicators are based on operations analysis, they provide more insight about port performance than other approaches and surveys and hence point to specific areas of port operations that have improved, or not.

For estimating port capacity, Ashar and Ayzanoa (1995) propose calculating the capacity of each terminal component (berth, yard, and gate) following industry standard methods.⁴¹ Then, for each terminal, the component with most restrictive capacity will determine the terminal capacity. Industry benchmarks will be used to differentiate between “theoretical” and “practical” demand as actual port throughputs are not only a function of equipment, layouts and operational procedures but also of a variety of scheduling, management and human factors that can only be accounted for in a detailed simulation. Consider the calculation of each port terminal component in turn:

Berth Capacity. A calculation of berth capacity requires very specific operational assumptions on equipment, productivity, scheduling, etc. However, a good indication of the capacity of a 300 – 350 meter berth can be approximated by the number of gantry cranes working at the berth (three) and each crane throughput. Modern container terminals are planned assuming annual productivities of about 150,000 TEU/crane. The assumed resulting berth capacity is then 450,000 TEU per berth annually and is applied for all the terminals included in this evaluation as all assign three cranes per berth. The calculation of berth capacity for facilities without the assumed standard equipment (gantry cranes) can be done similarly. In the case of mobile cranes, a multiplier of the crane productivity is usually assumed at values between 0.4 and 0.8.

Patio Storage (Yard) Capacity. The calculation of yard capacity has to assume the yard equipment deployed. For example, the benchmark of 40,000 TEU annually per hectare is assumed as a

⁴⁰ How Fit are Central America’s Ports? An Exercise in Measuring Port Performance. Paul E. Kent, Gerardo Ayzanoa and Asaf Ashar. International Association of Maritime Economists (IAME) Conference, Norfolk, Virginia, July 2014.

⁴¹ “Stock and Flow Methodology for Calculating Capacity of Cargo Terminals”, A. Ashar and G. Ayzanoa. Proceedings of the Second Annual Transportation Management Conference, April 1995.

practical standard for rubber-tired gantry (RTG) patio crane. Depending on the equipment deployed at the port, industry standard benchmarks will be applied.

Gate Capacity. The calculation of gate capacity assumes also practical industry benchmarks. Standard assumptions are three minutes per transaction and 16 hours of operation. When calculating the port terminal gate capacity, these operational assumptions and the number of gates will be defined after the site visit.

4.4 Shipping and Market Analysis

4.4.1 Evaluation Questions and Outcomes

The demand side of the market which Praia Port serves involves ocean carriers of different types with different commercial missions, with different value propositions and with different trade support functions. Parsing the parameters (frequency, timely delivery, types of cargos handled, etc.) which define the demand response to the MCC investment is essential for understanding the ultimate impacts of that investment on the real sectors of Cabo Verde's economy—including most importantly its tourism, maritime services and trading sectors.

Shipping and market analysis is relevant to examine the following research question:

- Among the ports in the region, how has the competitiveness of the Port changed following completion of the works?
- How has the competitiveness of the Port evolved?

4.4.2 Methodology

The team will collect indicators on regional port costs, levels of service and operational efficiency and compare them with the Port of Praia; this benchmarking will serve as the starting point of the competitiveness analysis. To complement the competitiveness analysis we propose to use port connectivity as a proxy for port regional competitiveness. The Liner Shipping Connectivity Index (LSCI) is an analytical tool developed by the United Nations Conference on Trade and Development (UNCTAD) that aims at capturing a country's level of integration into the existing liner shipping network by measuring liner shipping connectivity. LSCI should also be a good indicator of a port's ability to serve other cargos, especially general cargo.

By UNCTAD's definition, LCSI captures how well countries are connected to global shipping networks. It is based on five components of the maritime transport sector: number of ships, their container-carrying capacity, maximum vessel size, number of services, and number of companies that deploy container ships in a country's ports. For each component a country's value is divided by the maximum value of each component in 2004, the five components are averaged for each country, and the average is divided by the maximum average for 2004 and multiplied by 100. The index generates a value of 100 for the country with the highest average index in 2004. The index has been calculated and is available for the period 2004-2015 for Cabo Verde, Benin, and neighboring countries of Ivory Coast, Ghana, Nigeria and Togo. Therefore,

changes in shipping connectivity can be measured before and after the Compacts were in place and regional comparisons can be made.

From a qualitative point of view, the team will address the extent to which the MCC investments are enablers for Cabo Verde to compete at the regional level, however the reality is that this potential has not been realized and therefore it cannot be measured. Therefore, we propose analyzing the domestic market and specifically the market share between port of Praia and Porto Grande in order to quantitatively assess the impacts on competitiveness. The following paragraphs present the rationale behind this approach.

Our preliminary findings indicate that competitiveness changes have not had an impact in terms of regional cargo shifting from other ports in the region and using the port of Praia; the volumes of regional transit cargoes are inexistent or negligible at the port of Praia. From the beginning of the implementation of the compact to the present time Praia and the rest of the Cabo Verdean port system has served domestic cargoes almost exclusively. This doesn't necessarily mean that competitiveness of the port has not changed; it means that changes in competitiveness versus regional standards have not reached levels that justify modifications on the current regional market dynamics. The absence of regional transit effectively indicates that the port of Praia does not compete at the regional level for any significant volume of transit cargoes at this time. In that sense, Cabo Verdean ports are only competing among themselves for cargoes or originated outside the archipelago.

In theory, imports and exports destined to Cabo Verde have the option of using any of the nine ports as entry/exit gateway. Cargo flowing through the ports can be divided between captive cargo (originated/destined within the ports catchment area⁴²) and domestic transit. Arguably, the main determinants of the natural port catchment area are population and GDP; in view of this Santiago should represent by far the most significant natural catchment area in Cabo Verde and therefore Praia should handle a proportional segment of the overall trade flows. However, the analysis of historical data from ENAPOR indicates that at the beginning of the compact (2006) the trade flowing through the Cabo Verdean ports system was around 1.7 million tons. Porto Grande and Praia handled 670,000 and 600,000 tons respectively, Palmeira handled almost 200,000 and the rest of the port system (six minor ports) around 220,000. The team will analyze the reasons behind this domestic market share and the evolution of the share of Praia and Porto Grande in the total Cabo Verdean market. The team will analyze if operational/capacity constraints determined the dominance of Porto Grande over Praia. We will also assess if the constraints alleviated by the MCC investments had a measurable impact in operational costs and if these changes caused shifts on market shares.

⁴² in Cape Verde the "natural" catchment area corresponds to the island where the port is located.

4.5 Trade Analysis

4.5.1 Evaluation Questions and Outcomes

Trade analysis is relevant to examine the following research questions:

- What is the relative change in the level of domestic and international traffic, volume of container and bulk maritime trade, value of trade (USD) and growth trends in relevant sectors before and after the improvements to the port?

The trade analysis will also look at critical questions:

- How is the investment related to trade diversification?
- What is the impact of the investment specifically on the tourism sector?
- What aspects of the way in which reforms have been under taken on the port and with customs have had knock-on and demonstration effects on other sectors?
- What useful lessons can be taken away from MCC project implementation with respect to trade impacts?

4.5.2 Methodology

The NORC team will analyze the trends of the different market segments served by the port. Based on the cargo definitions that the port uses to track port activity we will describe the trade volume trends and determine if there is a correlation between changes in productivity or capacity and changes in volume. The repeated observation of changes in trade volume trends following changes in productivity will provide evidence of the port being a constraint for the growth of trade.

The team will analyze the relationship between capacity and trade volumes by determining the level of utilization of the port assets specific to each type of cargo to establish if the MCC investments had an impact on capacity and if that impact enabled the supply of services for an existing demand.

Another potential method would be to 1) forecast what trade volumes would have been absent the project, and then to 2) calculate the difference between the actual and “but-for” trade volumes. A common methodology for forecasting domestic cargo (imports/exports) is based on the relationship between trade volumes and GDP. Many studies^{43,44} recognize the relationship

⁴³ See, for example, UNESCAP and Korea Maritime Institute, *Regional Shipping and Port Development, Container Traffic Forecast 2007 Update*, Publication ST/ESCAP/2484, 2007, New York, p. 28. The report states that “although there is a wide range of factors that impact on the volume of container imports and exports, including exchange rate fluctuations, changes in economic structure, etc., it is necessary for forecasting purposes to use very simplified relationships, as many of the causal variables are themselves even harder to predict than container volumes. An example of this analytical challenge is that even though container imports and exports are undoubtedly greatly affected by exchange rate movements, the uncertainties involved in estimating exchange rates are immense.”

⁴⁴ The linkages between trade and GDP growth are not surprising. Economists have long assessed the impact of liberalized trade regimes on trade growth and the relationships between trade growth and GDP. This is not to say that growth rates between GDP

between GDP and trade volumes and incorporate this relationship in the formulation of container demand forecasts. The forecasting relationships used by most industry studies are simple linear relationships between container volumes and GDP. And in most cases, regression analysis provides a good basis for measuring the extent to which these relationships are correlated. We would forecast trade volumes from 2005 to 2014 or 2015 based on trade volumes prior to 2005 and GDP.⁴⁵ The differences between the forecasted trade volumes and actual trade volumes would give us some indication of the impact of the port investment on trade, recognizing that the time line is short. However, this method does not isolate out the impact of the port project compared to the impact of other factors that could have influenced trade volumes, and also does not provide attribution to the MCC project. We will qualitatively assess other factors that could have influenced trade volumes and assess whether adjustments need to be made to our findings and whether attribution is warranted.

At the macroeconomic level we would expect an effect on GDP, directly through a change in the value of imports and exports, and indirectly on its sector components intensive in the use of imports and suppliers to exporting industries. At the microeconomic level, we would expect the greater availability and lower prices of imported inputs to stimulate local production, increasing private sector income. Quantifying these impacts will be part of the scope of the Option Years of this evaluation.

Cabo Verde suffers from an absence of economies of scale which adversely affects its international competitiveness, raises the cost of goods, and depresses real household incomes. For Cabo Verde it is a question of market fragmentation, lack of purchasing power in riparian countries, and unstable and institutionally weak neighboring governments. These negative characteristics raise the cost of serving these markets. A more efficient port serving the region – assuming costs reductions get captured by the private sector beyond the non-transport – could stimulate greater integration. Toward this end we can examine changes in trade flows, not explainable by other economic factors, of exports originating (i.e., not re-exported) in Cabo Verde to nearby countries and imports to Cabo Verde from nearby countries.

Finally, an important component of trade is customs processing time; we will analyze changes in customs processing time (the average time to clear customs) over time, including safety and security.

and trade volume are the same; container volumes are a reasonable reflection of the extent of trade a country engages in due to the fact that the vast majority of trade volumes are handled in maritime ports. See European Commission, *Trade as a Driver of Prosperity* (Commission staff working document accompanying the Commission’s Communication on “Trade, Growth and World Affairs”), Brussels, 2010.

⁴⁵ As GDP may also have been impacted by the investment, as discussed in the next paragraph, the best data for this comparison would be GDP forecasts from 2005-2014/2015 that were forecasted/projected in or prior to 2005.

4.6 Institutional Assessment

4.6.1 Evaluation Questions and Outcomes

Qualitative analysis will contribute to answering the following list of evaluation questions:

- How has the competitiveness of the Port evolved?
- What is the relative change in the level of domestic and international traffic, volume of container and bulk maritime trade, value of trade (USD) and growth trends in relevant sectors before and after the improvements to the port?
- To what extent do the completed works mitigate/resolve observed constraints to port capacity and improve the efficiency of port operations as identified in due diligence and feasibility studies?
- What percentage change in the port's annual total direct costs (shipping, cargo handling and land transportation, etc.) can be observed following completion of the works?
- To what extent has the port project contributed to achieving an overall compact objective of increasing the integration of internal markets?
- What net change can be observed in employment among the permanent and non-permanent employees in the port sector following completion of the works?
- What has been the cost of corruption?
- All the monitoring and process related questions.

It will also answer the following critical questions:

- What authorities and controls over port operations exist within the ENAPOR?
- What governance mechanisms apply to overseeing ENAPOR management decision-making?
- What is the command and control relationship between ENAPOR and the Port of Praia's management?
- What are the competencies and capabilities of ENAPOR's management team?
- What additional reforms are required in order to increase the productivity of the MCC investment?
- What useful lessons can be taken away from MCC project implementation with respect to ENAPOR institutional developments?

4.6.2 Methodology for Qualitative Analysis

The relationship between the quantitative analysis described above and the qualitative analysis which the project team will undertake is the following: The qualitative analysis will provide context for the quantitative work. It will identify the contingencies and the conditions which affect specific outcomes and outputs in addition to MCC investment both directly and indirectly. In addition, qualitative analysis should provide deeper level insights into the possible hypothetical causes for change in outputs and outcomes than quantitative analysis alone.

Thus, qualitative analysis should complement and extend the qualitative analysis both as an exploratory instrument and as an instrument for testing, confirming and elaborating specific

hypotheses once these have been tested statistically and been found to be significant. For example, conclusions that investment in brick and mortar infrastructure and inadequate and only partially successful can and should be explored in more detail the ontology of interactions between the political economy in Cabo Verde, the institutional foundations on which port reform is based and the nature of relations between the private concessionaire and the public port authority.

4.6.3 Employment

4.6.3.1 Evaluation questions and outcomes

Employment analysis will contribute to answering the following list of evaluation questions:

- What net change can be observed in employment among the permanent and non-permanent employees in the port sector following completion of the works? What are likely potential impacts?

Methodology

While there is little doubt that employment temporarily increased during the construction phase of port improvements, it is important to address whether it increased once the port improvements entered into operation.

There are two dimensions here, temporary and permanent workers. As part of the Base Year scope of work, the team will focus on analyzing each case by reviewing ENAPOR's staff in Praia divided by work category to assess the changes and their connection with the investments and their effect on operational conditions at the port. Considering that ENAPOR exercises the role of port authority and port operator, the changes in the composition of its staff should be a representative indicator of the overall employment implications of the port development plan in Praia. We will also analyze if industries with close interaction with the port (i.e. trucking) have experienced growth in terms of number of employees.

Using as an input the analysis of cargo trends we will provide a qualitative review of economic activities that may have benefited from enhancement of port services elaborating on the interaction between Port activity, productivity and employment in these sectors.

A thorough quantitative assessment of indirect and induced effects in labor markets requires the development of "multiplier effects" type models or General Equilibrium models to depict the interactions between the maritime transport sector and the rest of the economy. This will be undertaken during the Option Years of the assignment.

4.6.4 Costs of corruption

Arvis *et al.* at The World Bank (2014) use the following indicators in their Logistics Performance Index:

- The efficiency of customs and border clearance ("Customs").

- The quality of trade and transport infrastructure (“Infrastructure”).
- The ease of arranging competitively priced shipments (“Ease of arranging shipments”).
- The competence and quality of logistics services—trucking, forwarding, and customs brokerage (“Quality of logistics services”).
- The ability to track and trace consignments (“Tracking and tracing”).
- The frequency with which shipments reach consignees within scheduled or expected delivery times (“Timeliness”).

We will take advantage of this framework in our qualitative work as well as complement our own analysis with what changes over time in these indicators (and their associated sub-indicators) reveal.

As a separate exercise, salaries of port employees could also be examined to determine potential for corrupt practices.

Finally, we would also look at third-party indicators that include corruption such as those prepared by the *World Competitiveness Report* (World Economic Forum, various years), the *Costs of Doing Business* (World Bank, various years) and *Corruption Perception Index* (Transparency International, various years).

4.6.5 Unanticipated Impacts

At this stage the team has not identified unexpected impacts from the MCC’s investment in the port of Praia.

4.7 Cost/Tariff Analysis

4.7.1 Evaluation Questions and Outcomes

Tariff analysis is relevant to examine the following research questions:

- What percentage change in the port’s annual total direct costs can be observed following completion of the works?
- What is the relative change in the cost of doing business to importers, exporters, agents, transportation companies, and other businesses sensitive to port improvements?

4.7.2 Methodology

The team will calculate whether savings derived from operational improvements at the port have been passed on to port users. The team will focus on identifying the trends in operational variable and fixed costs and their connection to the MCC investments. Using the detailed financial statements we will assess if ENAPOR has accrued cost savings due to the MCC’s investment; the next step is to see whether these cost savings have been passed on to consumers of port services through lower tariffs. For example, if the cost of port services rises by 40 cents

but the port only increases the tariff by 30 cents, the pass through rate is 75%. The equation for calculating the pass-through rate (PTR) is therefore:

$$PTR_1 = (Tariff_2 - Tariff_1) / (Cost_2 - Cost_1)$$

The pass-through rate can also be measured by percentage changes in the cost and tariff. The equations for calculating percentage changes in each price are:

$$\% \text{ change in tariff} = (Tariff_2 - Tariff_1) / Tariff_1$$

$$\% \text{ change in cost} = (Cost_2 - Cost_1) / Cost_1$$

Therefore pass through equation using percentages is:

$$PTR_2 = (\% \text{ change in tariff}) / (\% \text{ change in cost}) \times (Tariff_1) / (Cost_1)$$

To conduct an empirical pass-through analysis, we can measure the impact of changes in the cost of port services on the tariffs for port services while controlling for other factors that could explain variation such as inflation and exchange rate fluctuation. The pass-through rate can be empirically estimated using regression analysis. Regression analysis shows the impact of changes in the cost of port services (the key independent variable) on port tariffs (the dependent variable) while controlling for other factors (other independent variables).

Pass-through regressions commonly use natural logs for the dependent and independent variables. Transforming the data to natural logs implies that the regression coefficient on the tariff is interpreted as the percentage change in tariffs given a one percent change in port costs.

There is likely some lag in the transmission of increased costs to increased tariffs (and vice-versa). Thus, instead of only using the contemporaneous port costs as the port cost, we will also include the first and second lag of the cost. The sum of the coefficients on the contemporaneous, first lag, and second lag measures the percent change in the retail price due to one percent change in the wholesale price. To convert this percentage change to the pass-through rate, we can apply the percentage based formula (PTR₂) for calculating pass-through rates as defined above. In other words, we can multiply the percent change sum by the ratio of the tariff to the cost. For example, if the tariff is 150% of the cost (i.e. the port marks up costs price by 50%), a sum of the three cost coefficients totaling 0.67 would imply a pass through of 100 percent (0.67 x 1.50=1.0).

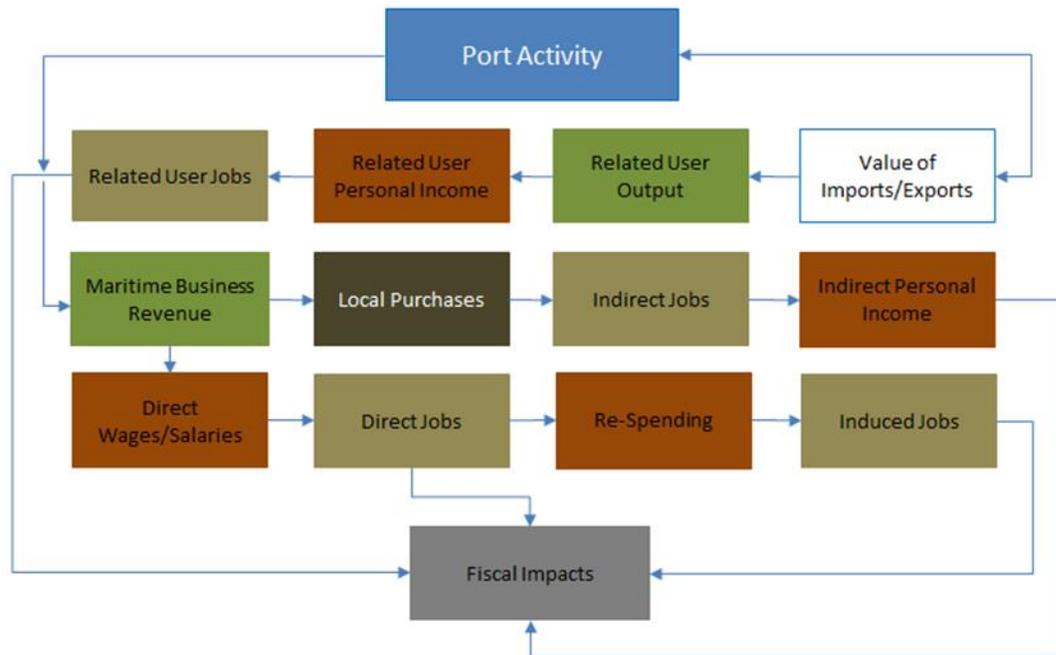
We will also analyze the share of variable and fixed costs in the overall port costs. Finally, the team will review the tariffs to identify structural changes indicating for example the availability of new services or changes in the way that services are delivered to the client..

4.8 Timeframe of exposure

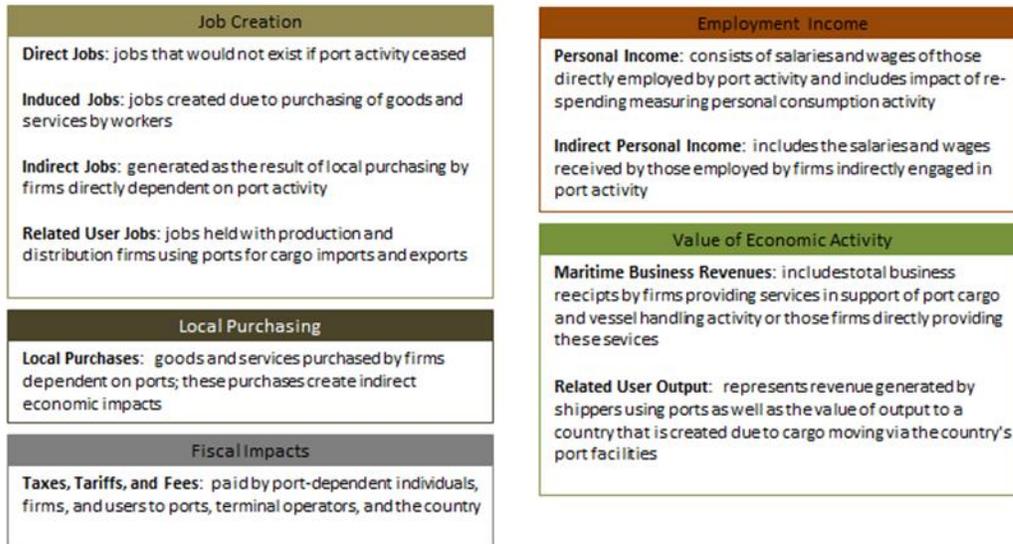
The total economic impact of the port investments on the economy consists of the direct, indirect, and induced effects. Figure 8 depicts a simplified flow of specific impacts relevant to this project. The jobs, salaries, and output that result from activities at the port that are related to

the MCC investments are termed the direct economic impacts. The primary or direct impact is the new value added in the form of new wages, salaries, rents, and profits stimulated by the project's investments and thus contribute to the GDP of the country.⁴⁶ During the Base Year, the analysis will focus on these direct economic impacts.

Figure 8: Flow of Impacts



⁴⁶ Here the term “impact” is not being used in the sense of an impact evaluation, which would require subtracting from the project-generated value added the value added from whatever alternative investments (the so called “counterfactual”) would have occurred had the Compact not been implemented.



The direct economic impacts in turn stimulate other economic activity. Subsequent purchases of supplies and services generate other rounds of indirect impacts. The induced impacts are the purchases that arise, in turn, from the increase in the aggregate labor income of households. Both the indirect and induced economic impacts demonstrate how the requirements of the direct effect reverberate or ripple through an economy. Quantifying indirect and induced impacts will be part of the scope of the Option Years of this evaluation.

Depending on the specific investments funded by the MCC at the port, the analysis of the direct impacts for this project will be framed in two distinctive stages:

- Pre-investment operation period from start of operation (or selected baseline) to start of investment;
- Post-investment stage when the full impact of the investments occurs and over time.

4.9 Limitations and Challenges

In addition to the specific challenges mentioned in the Approach to Evaluating Operational Performance and Efficiency section, there are two principal limitations or challenges to the success of the present port evaluation, attribution and data availability.

Attribution. Ideally, an evaluation wishes both to identify impacts as well as to attribute them (and hopefully to the client). With the current technologies of data collection changes in outcomes generally can be measured. Unfortunately, the rigorous (statistical) attribution of said impacts is often much harder since some acceptable counterfactual is required. The MCC defines assessments as “impact evaluations” when, *inter alia*, there are distinct counterfactuals. If treatment units have been randomly assigned to either treatment or no treatment then the evaluation is “design-based” i.e., derived from an experimental design; non-random alternative methods of

assignment may lead to the evaluation be considered quasi-experimental. When there are no distinct counterfactual units then the MCC defines the assessment as a “performance evaluation”, regardless of the degree of sophistication or rigor.

In the present case and *at the level of a port*, finding a set of matching counterfactual units is not really possible. Even if some were found, the sample would be too small for meaningful statistical analysis. This leaves us a number of alternative design options of varying degrees of rigor and statistical power, and all based on an array of different unit(s) of analysis – and at a lower-level than the treatment units (which were the Port Authority, the wharves, etc.):

- a. identify comparison units and apply a quasi-experimental approach;
- b. Apply a model-based approach, possibly including newly identified comparison unit(s);
- c. Use qualitative methods and descriptive econometrics to suggest credible causation; and/or
- d. Use qualitative methods to suggest credible causation;

To appreciate these options, several points should be made. First, examples of sub-port-level analytic units might include traders, vessel visit, trucks, trade transaction, traded good, and port laborer.

Second, we have differentiated between a model-based approach and descriptive econometrics. The distinction we wish to make here is that former purports to infer whether changes in outcomes can be attributed to the Compact – say, using a continuous treatment-variable model – while the latter simply seeks to document outcome changes while accounting for non-intervention exogenous factors.

Under a model-based approach, a causal relationship is hypothesized, mathematically specified, and then statistically estimated. Hypothesis tests are then carried out subject to the measures taken to limit Type I and Type II errors. Briefly, the null hypothesis in this case is that the model’s parameters associated with the treatment variables (interacted with the survey round) are zero – there is no impact. If they are statistically significantly different from zero – and the model is correctly specified – one (temporarily) accepts causality. Under this formulation, each analytic unit at baseline contributes to our understanding of the counterfactual by allowing us to infer whether differences in the amount of Compact assistance (the “dosage”) influences – and, therefore, impacts on – the observed outcomes of the analytic unit. If it does then by construction Port performance must have improved.

A key challenge to a model-based approach concerns the correctness of model specification and, more specifically, the degree to which endogeneity (reverse causality and selection bias) has been properly (convincingly) accounted for. Since this is not the place to detail how state-of-the-art econometric and statistical methods may assist in this task, suffice it to say that NORC would apply such methods to the fullest so that its performance evaluation is able to take maximum advantage of the data available.

It is worth stressing that neither the design-based nor the model-based approach dominates the other as a preferred method of attribution; it depends on the situation. While the design-based

approach is generally “light” on assumptions, that feature can actually be a disadvantage to the evaluator in certain cases. First, it requires a significantly greater amount of data – double or triple what a model-based approach requires. Second, the lack of a model structure to disentangle co-varying influences means that it is hard to draw nuanced lessons from a design-based application. Third, having a parametric model facilitates the application of findings to populations outside the sample analyzed – that is, it strengthens external validity.

In light of these design options, an overall evaluation strategy was agreed between NORC and MCC. During the Base Year of study Option c would be utilized. Likewise, at the end of the Base Year and drawing on the findings and information gleaned, an assessment would be made on the degree to which there are additional, fruitful, evaluation opportunities utilizing Option a. and Option c.

Data availability. As detailed in this section, the evaluation approach intends to draw on both qualitative and quantitative data. The former includes key informant interviews, focus groups discussions, and interpretations of legal, regulatory, and project documents. Based on our review to date, documentation availability would appear to be excellent and is not likely to impose a constraint on analysis.

For the present purposes there are no plans to undertake survey-based data collection during the Base Year; such needs and opportunities will be detailed in the proposed evaluation design for Option Year 1. Existing data reside with the Cabo Verde governmental, private sector, international trade organizations, and international multilaterals. The team is confident of access to the international sources. We also hope that the Cabo Verde government – primarily the ENAPOR, Bureau of Statistics, and the Ministry of Finance – will continue to be forthcoming with the pertinent data they possess and we have initiated requests for.

Finally, while the MCC has had ostensive success in conducting corruption perception surveys with port stakeholders, their accuracy remains to be seen. (NORC has developed some cutting-edge sensitive-question protocols that ensure response anonymity and thus a lower likelihood of bias; these would be made available for any future round of such surveys). Likewise, we do not know how successful the team will be in eliciting truthful responses during key informant interviews and focus group discussions on sensitive topics related to fraud. Our experience in other countries leads us to be optimistic in this regard, especially if members across the range of respondent types can be interviewed.

5. Data Sources and Outcome Definitions

5.1 Data Collection Plans

The team has received the majority of the operational data for the quantitative analysis including data from the Port Authority's operating department, so we do not believe that data gaps will severely affect our ability to conduct rigorous analysis. We are currently assessing the quality of the data collected for the analysis.

A NORC team traveled to Cabo Verde to conduct field work and to gather data. During the mission, the project team used a number of data collection methods, including interviews, observations and measurements conducted during site visits, as well as focus group interviews with groups whose interests and stakes in project outcomes are complementary. In addition, members of the team collected both quantitative and qualitative data, which do not exist in the set of information resources already supplied by MCC.

The main objectives of the mission were to:

- Collect the necessary information to conduct a comparative assessment of the implications of the MCC investment on the performance of the Port of Praia
- Determine operational practices before and after the execution of MCC investments
- Visit port and project-funded operations to assess current performance
- Understand the relevance of MCC investments for strategic decisions in terms of port operation
- Collect secondary and primary data regarding the following topics:
 - ◆ Economic significance of investment,
 - ◆ Port operations and level of service,
 - ◆ Effects on trade including cargo trends and volumes,
 - ◆ Effects on the implementation of the government's maritime cluster development strategy,
 - ◆ Tariffs and costs,
 - ◆ Institutional arrangements,
 - ◆ Incidence of benefits,
 - ◆ Corruption, and
 - ◆ Integration of service markets.

5.1.1 Key Informant Interviews

The team conducted 29 interviews with a wide range of stakeholders. Stakeholders comprised the employees of the Port Authority of Praia including members of ENAPOR board of directors, the Port Director and directors both of operations and of marketing, representatives from major shipping lines servicing Praia, the largest shippers using the port, several shipping agents

including the one which represents all cruise lines calling on Praia, the Chamber of Commerce and Industry, various ministries/government departments and local businesses.

5.1.2 Actual Inspections of the Port of Praia

On Tuesday, October 20, 2015, the team undertook a tour of the port led by Mr. Celso Martins, Project Manager at the port of Praia. During this field visit the team was able to observe the status and assess the quality of all of the MCC's investment components and to learn about pre and post investment port operations through direct observation and Mr. Martin's informed commentary.

In particular, the team was able to observe and assess the following:

- Complete rehabilitation of Quay 2 including paving, berth bollards and fenders, fencing, lighting equipment, administration and maintenance complexes, entrance and security gates, and miscellaneous structures and facilities
- Complete widening and paving of additional storage areas
- The Cargo Village with fully operational import and export warehouses
- Fully operational reefer plugs
- Self-sustained vessel operations
 - The security equipment and systems including Closed-circuit television (CCTV)
- The new access road and the connection to the logistics zone adjacent to the terminal (Cargo Village)
- Truck operations on access roads
- The gate and security procedures to enter the port
- The new breakwater extension
- The newly extended quay
- The new stuffing and stripping cargo sheds in the Cargo Village
- Ships at anchor awaiting a berth
- Ships and tugboat at berth

All of the MCA-funded investments appear to be in good condition and in fully working order. Asset utilization of both facilities and equipment within the Terminal seems to be low. Operational areas for international cargo handling are in good condition. Completion of the storage area behind the new container terminal remains incomplete. However, at the present time this additional storage capacity is not needed. Cargo handling equipment on the terminal is antiquated; cargo handling equipment upgrading was not part of the MCC investment.

5.1.3 Focus groups

The Team is presently assessing the adequacy of the data it has already collected to address the research questions. As the analysis progresses, the team will be in a better position to assess what research questions will require additional data collection and determine if focus groups are the best source of additional information to maximize the quality of the evaluation report. Hence, the decision as to the extent, nature and necessity of conducting additional focus groups

during the base period has not yet been finalized. Once it is, NORC will provide to the MCC the rationale for whatever decision is taken.

Proposal to Measure Implementation Fidelity

We understand fidelity here as referring to the degree to which the initial infrastructure project design was followed. To this end we plan to examine the documents upon which implementation was to be based. Significant changes were made to the MCC project between its initial conception and its final execution. Those changes have been explained as the result of budgetary shortfalls. However, because the budgetary shortfalls turned out to be quite large and the need for a second donor supplied tranche of investment so significant a simple explanation of failure in the cost estimates and of the project budget requirements falls short of a full explanation.

Through our site visits and related on- and off-port inspections we will determine whether initial plans were followed and indeed, where initial plans were well matched to current and projected demand. Where they were not – and this is an important opportunity for lessons learned – we will draw on the key informant interviews and focus group, as well as our own extensive field experience, to hypothesize (and, where feasible, test) why the expectations of MCC’s contracted engineers and port designers fell short or, alternatively, were not fulfilled.

5.2 Data Needs

5.2.1 Data sources for quantitative analyses

We are assessing the usefulness of existing time-series data sources to evaluate their adequacy for econometric analysis. These will include time-series data sets such as the quarterly M&E data, and cruise data.

We have collected additional time series data to supplement existing data sources that was collected under the Cabo Verde compact including operational data from the Praia Port Authority, port trade volumes data and port traffic data. Port operational, tariff and level of service data was provided by ENAPOR. We will incorporate additional potentially relevant annual data from national accounts and on comparative country port performance from:

- The World Bank Ports Infrastructure Database
- World Economic Forum’s Port Efficiency data
- OECD Maritime Transport Cost Database

Finally, the Indicator Tracking Table associated with the M&E Plans are available as well as Containerization International/UNCTAD series for trans-Atlantic and trans-Pacific rates, which expresses freight rates as the price to transport one container of goods (USD/TEU) from one port to another.

5.2.2 Data sources for qualitative analyses

Qualitative data needs will include the following:

- Copy of Enabling Legislation for ENAPOR;
- Copy of Government Procurement Guidelines or Procurement Law;
- Organizational Chart for ENAPOR, with beginning and ending dates and description of services provided;
- List of all Private Contractors Working for ENAPOR , their functions, length of term of contract and description of procurement process used to engage them;
- Ten year of data on Imports and Exports broken out into 3 digit STCCT Codes;
- Ten years of data on transshipment and transit traffic moving through PAC, and comparable data for neighboring ports;
- Ten years of time series data on average port handling costs per 20ft and 40ft containers, broken out into specific line items;
- Timeline representing major events which have taken place with regard to ENAPOR reorganization and organizational changes;
- Ten years of audited financial statements for ENAPOR; and
- Ten years of time series data average port charges for handling a 20ft and 40ft container, broken out into chargeable components.

6. Administrative

6.1 Summary of IRB Requirements and Clearances

NORC's Institutional Review Board (IRB) reviewed the project team's research and determined that the project qualified as Non-Human Subjects Research (NHSR).

6.2 Preparing Data Files for Access, Privacy, and Documentation

As the project team will not be collecting any primary survey data from human subjects, the project team does not foresee the need to anonymize datasets. Measurement data collected from visual port inspections will be documented according to the MCC data documentation guidelines and delivered to MCC.

6.3 Dissemination Plan

The project team will utilize a participatory approach to the design of the evaluation, sharing the performance evaluation's objectives and implementation approach and soliciting feedback on the performance evaluation design through an in-country workshop with key stakeholders.

Upon completion of the evaluation, the project team will again share evaluation results and lessons learned with key stakeholders through an in-country workshop to solicit feedback prior to finalizing the evaluation report. The project team will also present evaluation results to MCC staff, providing an oral overview of the background and program logic of the port investment, the performance evaluation's objectives, the methodology, how and what data was collected and utilized, and the results and recommendations for future port project design, implementation, and evaluation activities. Lastly, the project team will work with MCC to prepare results summaries for public dissemination.

6.4 Evaluation Team Roles and Responsibilities

The project team is comprised of staff from three different organizations, NORC at the University of Chicago and its subcontractors Nathan Associates Inc. and Agland Investment Service Inc, who are highly qualified in designing and implementing performance and impact evaluations of port infrastructure, and who have demonstrated experience working in sub-Saharan Africa and other developing countries. Below we present staff profiles and roles and responsibilities.

6.4.1 NORC

Jeffrey Telgarsky (Home Office Manager) is an economist and experienced senior manager with a strong background in development policy, finance, economic development, and monitoring and evaluation. Since 2005, Mr. Telgarsky has been NORC's Senior Vice President and Director of the International Projects Department; previously, he was the Director of the

Urban Institute's International Activities Center. In both positions he was responsible for all aspects of program management and development for international research and technical assistance activities. He has worked with MCC, USAID, the World Bank, UNDP, and the Inter-American Development Bank. Mr. Telgarsky brings to his managerial role a strong background in a variety of technical areas, including monitoring and evaluation. During 2005-2011, he managed and coordinated work under an impact evaluation task order issued by MCC for Benin that is assessing the effects of rural land reform and improved access to banking services through micro-finance institutions (MFIs) by rural small-holders and small and medium enterprises (SMEs). He is also NORC's Project Director on three impact evaluations concerning agricultural programs – a food security program involving rice farmers in Burkina Faso and Sri Lanka, a capacity-building program for cotton farmers in six African countries, and a technical assistance and investment program promoting increased value-added for cashew growing and processing in five African countries.

As Home Office Manager, Mr. Telgarsky will serve as MCC's point of contact to resolve any contractual or financial issues related to the task order between NORC and MCC. He will also manage the overall budget and, with the Technical Lead, identify and resolve any bottlenecks and problems ensuring that work plan activities are advancing in a timely manner. Mr. Telgarsky, in conjunction with the NORC Program Manager/Technical Lead, will ensure the timeliness and quality of all deliverables and will be responsible for ensuring that all contract obligations are met within required timeframes. He will also ensure that contractual arrangements for subcontractors and consultants are put in place in a timely manner and monitored to ensure efficient implementation. As NORC's Senior Vice President and Director of International Projects, Mr. Telgarsky has the authority to mobilize quickly any necessary resources within NORC's International Projects department and elsewhere within NORC to address any need that might emerge during the course of the contract.

Clifford Zinnes (Technical Lead), a senior fellow at NORC, is a specialist in applying quantitative methods and institutional economics to improve aid effectiveness and economic reform in developing countries. Dr. Zinnes has a dozen years of experience designing and overseeing impact evaluations using econometric, experimental and quasi-experimental approaches in infrastructure, irrigation, agriculture, game conservancies, public sector transparency and governance, water and sanitation (both rural and urban), and children's nutrition, among other areas, for AusAID, CIDA, DFID, MCC, FAO, USAID, USDA, UNIDO, World Bank, Soros Open Society, and the Bill and Melinda Gates Foundation. Dr. Zinnes most recent field work has focused on Cabo Verde, Colombia, Dominican Republic, Ecuador, Lesotho, Namibia, and Zambia. He has also conducted food security and agricultural export modeling in Morocco and water pollution regulation in Egypt. At the same time he has kept up his publications and academic activities, teaching and shepherding dissertations at Harvard University, the University of Maryland, and several overseas. Dr. Zinnes received his Masters in econometrics and his PhD in international economics from the University of Pennsylvania, and speaks fluent Romanian and Spanish and has a working knowledge of French.

As the Technical Lead, Dr. Zinnes will be responsible for providing leadership in quantitative methods and economics to the port experts, designing the performance and impact evaluations, overseeing the performance evaluation implementation process, and ensuring quality control. His

focus will be to ensure that the various high levels of expertise embodied by each team member are maximally taken advantage of and that the results are methodologically and empirical consistent.

Mawadda Damon Gartner (Performance Evaluation Specialist), a Principal Research Analyst at NORC, is an evaluation specialist with over five years of experience in the design, management, and implementation of impact, performance, and implementation evaluations. Her experience includes the development of results frameworks and indicators; the design of in-depth interview and focus group guides and survey instruments; training of interviewers; descriptive analyses of quantitative survey data; the use of NVivo software to organize, code, and analyze large amounts of qualitative data; and report writing. Ms. Damon's experience in evaluation includes leading focus groups with farmers and conducting key informant interviews for a food security project in Burkina Faso and leading a three-year performance evaluation of an olive sector project in Morocco where she worked exclusively in French to design the methodology of the evaluation; develop the data collection instruments for farmers, farmer organization leaders, and olive press owners; train interviewers; conduct key informant interviews in the field; analyze both the qualitative and quantitative data; and write reports. Ms. Damon has also managed and supported data collection for a series of impact evaluations using a range of randomized-control trial, quasi-experimental, and pre-post designs. Ms. Damon has eight years of experience managing international projects and communicating with counterparts and project beneficiaries in Africa (Burkina Faso, Ghana, Uganda, Rwanda, and Morocco), the Middle East, Latin America, and Asia. Ms. Damon holds a Master in Public Policy from the Harvard Kennedy School of Government. She is fluent in French, Arabic, and Turkish.

As the Senior Performance Evaluation Specialist, Ms. Damon will primarily be responsible for the ongoing implementation of the evaluation, assisting the Program Manager/Home Office Manager with management of the budget, subcontracts, and deliverables; and assisting the Technical Lead with reporting. She will work with the technical specialists on the design and implementation of qualitative aspects of the evaluation, such as the development of interview protocols for KIIs and FGDs, work with local consultants to implement the FGDs, and lead the qualitative analysis of interview transcripts from the FGDs as necessary.

6.4.2 Nathan Associates, Inc.

Gerardo Ayzanoa (Senior Port Operations Specialist) is a port and logistics operations expert with more than 20 years of experience in the analysis of waterborne freight logistics and the development of forecasting, operations and financial simulation models to assess the feasibility and performance of ports, waterways and intermodal systems. His research and project experience has involved examining the performance and productivity of transport operations and the design and development of simulation models to optimize intermodal transportation networks, including all the physical components and interfaces of the logistics chain (rail/truck, port, vessel, transfer centers) used by containerized, general and bulk cargos. Assisted by his wide-ranging knowledge in the fields of mathematical modeling and management of information systems, Mr. Ayzanoa has designed, built and analyzed large databases on commodity flows, port facilities and vessel costs to support modeling and planning efforts.

Mr. Ayzanoa began his professional career in 1992 at the National Institute for Ports and Waterways, the only academic and research center in the United States dedicated to performing technical-economic evaluations for the planning of maritime and river terminals and waterway navigation systems. He has experience both in the United States and internationally, and has worked on assignments ranging in scope from national planning efforts to particular development projects. In 2010, Mr. Ayzanoa joined Nathan Associates as a Principal Associate in the Infrastructure Planning and Economics Group. As a project manager he has directed multi-disciplinary teams on large economic impact and regional demand analysis projects. Between 2010 and 2012 he directed one of the most important studies on the economic impact of maritime clusters development, the “Economic Impact Study of the Panama Canal on the Panamanian Economy,” where the economic relationship between the port, maritime and logistics industry and other sectors of the economy was estimated. Mr. Ayzanoa was involved in the 2005 MCC’s assessment of Port of Praia when he assisted on the financial, economic, and sensitivity analyses for several alternative port developments. He is fluent in English, Spanish and has working knowledge of Portuguese. He received his Bachelor of Science degree in Computer Science from the University of Maryland and a Master’s degree in Engineering Management from George Washington University.

Mr. Ayzanoa’s has recently performed the following analysis as part of port development and shipping studies: (1) market analysis for the “Port Rationalization Study”, Trinidad & Tobago, 2013-2014; Northern Port Market Assessment Study, Colombia, 2014; El Salvador Ports Market Consultancy, El Salvador, 2010 -2013; Logistics/Port Operations Specialist, USAID Trade Facilitation Project, Peru, 2012; Panama Canal Bulk Market Segment Study, Panama, 2011-2012; (2) shipping analysis for Study Coordinator and Trade, Shipping, Port Operations and Economic Modeling Specialist, Port Rationalization Study, Trinidad & Tobago, 2013-2014; Market Analyst and Port Planner/ Team Leader, El Salvador Ports Market Consultancy, El Salvador, 2010 -2013; Port Planner/Team Leader, Market Assessment for the Port of Ancon, Peru, 2010; Market Analyst and Traffic Projections Specialist, Development of a Container Terminal in Port of Callao, Peru, Agencias Universales S.A. (AGUNSA), 2005-2006; ; Port and Trade Analyst, Market Study for the Port of Cortes, AGUNSA, Honduras, 2004; Maritime Systems Specialist, Study of the Panama Canal Impact on the Liner Container Shipping Industry and the Transshipment Activity, Panama Canal Authority, Panama, 2002 – 2003; (3) port operations analysis for Study Coordinator and Trade, Shipping, Port Operations and Economic Modeling Specialist, Port Rationalization Study, Trinidad & Tobago, 2013-2014; Port Operations Specialist, Technical Advisory Services for the Enfidha Industrial Zone, Al-Mal Investment Company, Tunisia, 2008 – 2009; Port Operations Specialist, Technical Assistance to the Government of Mozambique for the Evaluation of the Moatize Coal Mining Concession, The World Bank – Ministry of Transport and Communications of Mozambique, Mozambique, 2008; Co-author "How Fit are Central America’s Ports? An Exercise in Measuring Port Performance", IAME 2014 Conference, July 15-18– Norfolk, VA, USA; (4) financial analysis: Port Planner, Arbitration Case Dubai Ports vs. Peru, Callao Terminal, 2012-2014; Trade Maritime Specialist/Financial Analyst, Technical Assistance for the Planning, Implementation and Financing of the Superpuerto Project at Bocas de Ceniza, Sociedad Portuaria Bocas de Ceniza S.A., Colombia, 2006 – 2007.

As Senior Port Operations Specialist, Mr. Ayzanoa will be responsible for assessing the performance of all the marine terminal components with respect to competitiveness (both qualitative and quantitative analysis), trade volume (quantitative analysis), port operational efficiency, port costs (quantitative analysis), and tariffs and fees. Mr. Ayzanoa will be part of the evaluation teams traveling to Cabo Verde and to Benin.

Daniel Perea (Senior Transport and Logistics Specialist) is an Economist focused on transport infrastructure and international trade. Currently an Associate at the Infrastructure Planning and Economics Practice in Nathan Associates Inc., Mr. Perea has been closely involved in the implementation and design of infrastructure projects covering maritime transport, logistics, corridor analysis and power generation. Mr. Perea has carried out detailed analyses and research covering economic impact, financial and engineering due diligence, master planning and institutional review for multimodal transport, urban transport and logistics assessments. Mr. Perea has provided project management support for more than 25 infrastructure projects worldwide. He has conducted research and transport logistics chain competitiveness assessments in Asia, the Caribbean, Central America, South America, Southern and West Africa. Mr. Perea has worked on projects in several countries, including Colombia, Ecuador, Ethiopia, Guatemala, Nigeria, Panamá, Philippines, South Sudan, Uganda, United States, and Uruguay. Mr. Perea holds a Master of Business Administration from the University of Maryland, a B.A. in Economics from the Universidad Externado de Colombia, and Certificate Programs in Economic Policy and International Business and Trade from American University.

His recent work as a macro-economist modeler for the International Finance Corporation (IFC) “Economic Impact Assessment for the El Bosque Terminal in Cartagena, Colombia, 2013” study contributed to the development of a methodology to assess the impact of port development investments in the country’s economy. Mr. Perea is the Project Director and co-developer of the new version of a transport performance evaluation toolbox named FastPath 2.0 (FP2), designed to provide quantitative analysis of transport logistics chains in terms of time, cost and reliability; he is the Project Director of the FP2 first implementation, a study in the Philippines analyzing logistics chain of banana, mangoes, and other perishable exports to Europe.

As the Senior Transport and Logistics Specialist, Mr. Perea will be responsible for evaluating the impact of port performance improvements and related cost savings on competitiveness (through analysis of productivity and level of service indicators), qualitative assessment of changes in volume, value, and composition of trade (external and internal), financial analysis of port costs, and quantitative analysis of changes in employment and other unanticipated effects. Mr. Perea will be part of the evaluation team traveling to Cabo Verde.

Kristen Harkins (Transport Economist) With nearly 10 years of experience, Ms. Kristen Harkins is an applied economist with expertise in the transport sector and quantifying and evaluating impact. Ms. Harkins is currently a Managing Associate with the Infrastructure Planning & Economics group at Nathan Associates Inc. She specializes in applying econometric and statistical techniques to solve business problems, providing economic advice on legal and policy matters, and evaluating economic impacts of industry events and socio-economic interventions. For private clients and donors, Ms. Harkins provides economic and statistical expertise for transport, litigation, and regulatory matters. She has extensive experience

analyzing, manipulating and summarizing complex transaction level databases using statistical software. Ms. Harkins is currently the project coordinator and Infrastructure Economist for an economic impact evaluation of a port and rail investment in Mozambique. She also recently conducted data analysis and research support for a study of the Brazilian port sector and for a Peruvian port arbitration matter. She also drafted recommendations for strengthening Myanmar's competition bill. She is currently managing Nathan's research support for a three year study to assess the impacts of competition enhancing reforms in the staple food and bus transport sectors in India, the Philippines, Ghana and Zambia. She spent a year at Nathan's office in Chennai, India, which is one of the leading economic consulting firms in India and the top economic consulting firm in the area of competition law. At Nathan India, she was responsible for managing the analysis conducted by a team of local economists, coordinating proposals for new business, and developing the skills of the office staff. During her tenure, Nathan India prepared the economic assessment for India's first Form II (long form) merger application to the Competition Commission of India (CCI), which was approved by the commission. She also managed and drafted Nathan's economic assessment of Etihad Airway's acquisition of a share of Jet Airways, which was also approved by the CCI. Prior to her work at Nathan India, Ms. Harkins worked with both the international development economics and litigation departments of Nathan Associates in Arlington, VA. Ms. Harkins' work experience also includes forecasting liability and valuing claims for the product liability at the consulting firm Analysis Research Planning Corporation (ARPC), serving as Summer Associate for the Reinsurance Litigation unit at American International Group (AIG), and working with a member of the Congress for Local and Regional Authorities at the Council of Europe in Strasbourg. She has a bachelor's degree (with Highest Honors) in Economics and International Relations from Lehigh University, and a Master's degree in Applied Economics from Johns Hopkins University.

As Transport Economist, Ms. Harkins will support the activities of the senior port specialist and senior transport and logistics specialist. She will perform the preliminary data collection, review and quantitative analysis necessary for the evaluation of port performance improvements, port costs, tariffs, trade volumes and port competitiveness. Ms. Harkins will be part of the evaluation team traveling to Cabo Verde.

6.4.3 Agland Investment Services, Inc.

Ronald Kopicki (Senior Ports Specialist) is an international expert in port and logistics systems with extensive international experience in enhancing the productivity of private and public investments in ports, in strengthening the import and export markets which ports support, and in designing innovative forms of port organization, governance and regulation through; (1) business process refinement, (2) new logistics services: (3) alignment of port operations with ancillary service providers (such as shipping agencies, customs and customs brokers, forwarders and inland shipping companies); (4) reengineering of systems and functional capacities within ports to improve asset utilization, information flow, work flow, cargo flow, and coordination of activities on and off terminals, rapid payment and fail safe cash management, detection and control of corrupt practice and effective service quality control; and (5) creation of new port centered distribution channels which enhance opportunities for penetrating specific, service sensitive export markets.

Mr. Kopicki has worked in over 20 developing economies on the staff of the World Bank with a focus on infrastructure, ports and logistics. He recently completed an Egyptian multimodal transport strategy study funded by the IFC. He recently was the Transport Infrastructure Advisor for the World Bank and the Supply Chain Advisor for the FAO of the UN. Mr. Kopicki is the author of several World Bank Country Economic Memorandum studies, which elaborate strategies for improving port operations and for facilitating export trade. Importantly, as well, he is the primary author of the World Bank's first Port Reform Toolkit which deals with a diversity of regulatory, competitiveness, private sector investment and port layout, design and operational issues and he has put many of these principles to work in designing World Bank investment projects which supported Chinese Port Modernization, Indian Port Restructuring, and the Reorganization of the Ports of Karachi, Tema, Takaradi and Colombo. In addition, he is a contributor to another World Bank book which deals with the development of third party logistics services and related third party information services which facilitate trade. Mr. Kopicki is also the primary author of a WB book, which diagnosed underlying causes of the 2008 rice market crisis in South East Asia and which recommended port investment, logistics and procurement policy reforms designed to avoid similar food crisis in the future.

From 1996 - 2000, he was the Lead Advisor on World Bank sponsored port modernization projects in Port au Prince, Colombo, Karachi, Aden, two ports in China, Jeddah, Accra, Takeradi, two ports in Dar es Salam, two ports in Argentina, and two ports in Costa Rica. He also analyzed ports in Cabo Verde and Benin. He is currently preparing a work shop which the World Bank will offer in Ghana to African officials which will deal with the financial, operational and risk management design of workable port oriented PPP projects.

Mr. Kopicki's consulting work for ports has frequently been linked to support import/export sectors in which transport/port services represented an important source of competitive advantage. He led the WB team, which consulted the Dubai Port Authority in the development of its new Dubai Food City, which is a regional food distribution center designed to support emergency food relief operations throughout the Middle East and he led the World Bank effort to design and launch a new PPP financed air/water multimodal distribution center in Durban, SA. While at the World Bank he also developed a strategy for attracting private investment and for restructuring the cargo handling operations of the Ports of Ras el Hamah. In addition, he developed inter-island food distribution strategies for the Maldives and recently assessed the feasibility and the merits of port investment projects for private investors in Albania and the Philippines.

Mr. Kopicki has a great deal of hands-on expertise in designing and developing various types of transport and transport regulatory institutions, which support efficient port operations. He is the primary designer, for example, of the dry port networks, which operate in China, Nepal and India. These were developed under World Bank credits. He also advised several countries (e.g. Philippines, Egypt and Brazil) about how to regulate their multimodal transport systems, in ways, which encouraged private investment and the offer of seamless multimodal services.

He has taught short courses on Port Management at the US Maritime Academy, on Supply Chain Management at Ohio State, on transport operations management at the University of Vermont

Business School and on structuring Transport Sector PPP's Transactions at the University of Pennsylvania, Wharton School.

Mr. Kopicki will serve as the lead technical specialist on many of the qualitative aspects of the evaluation, including qualitative aspects of the assessment of effects on trade, operation efficiency, institutional arrangements relating to costs, and assignment of benefits arising from port operations and corruption. He will also work with the other technical specialists to develop quantitative analyses related to other aspects of the evaluation, such as integration of internal markets, employment, and unanticipated effects. He will also lead efforts to address the monitoring/process aspects of the evaluation. Mr. Kopicki will be part of the evaluation teams traveling to Cabo Verde and Benin.

6.4.4 LOCAL PERSONNEL

Deolinda Reis Semedo (Local Field Coordinator, Cabo Verde) has a bachelor's Degree in Statistics, from the Federal University of Pará - Brazil, and a post-graduate degree in Geographic Information Systems from University Nova de Lisboa / UniCV. She began her professional career as a technician at the Department of Statistics in Cabo Verde. In June 1996, she continued activities with the National Statistics Institute until March 2007. In April 2007, Ms. Reis was hired to Directorate General of the Ministry of Planning. In October 2007, she was hired by MCA to exercise the Position of Director of Monitoring and Evaluation of the Cabo Verde I Compact. She brings highly applicable experience with a number of compact-related projects, having worked at MCA - CV during the last three years as Director of Monitoring and Evaluation. In April 2002, she participated in the creation of Afrosondagem LDA (a company leader in opinion polls, market studies, Democracy and Governance research in CV). She is currently the Senior Fellow at Afrosondagem LDA, and specializes in applied quantitative methods, M&E and sample design. As a statistics consultant, with more than 15 years of work experience in Cabo Verde's National Statistics Institute (INE), Ms. Reis coordinated many surveys, including: QUIBB 2006 (Unified Surveys for Basic indicators of Well-being); the Survey for Familial Expenses and Incomes (IDRF 2001-2002); the Population and Housing Census on the Sal Island (2000); and the Entrepreneur Census (1998). Ms. Reis brings a wealth of experience in data analysis, participation and management in numerous INE studies.

Ms. Reis will assist with key informant interviews, field logistics and will serve as the primary liaison between Cabo Verdean stakeholders and the NORC/Nathan/Agland team. Ms. Reis will also provide local context input into the evaluation design and assist with the collection and review of existing datasets in Cabo Verde.

6.5 Evaluation Timeline

NORC signed the evaluation contract modification on June 2, 2015 and officially began activities on June 15, 2015. The base year evaluation activities are expected to be completed by June 30, 2016. The weekly evaluation work plan is provided as a separate excel document annex to this report.

6.6 Reporting Schedule

In addition to monthly progress reports, the project team will be submitting draft and final versions of the Performance Evaluation Design Report and Performance Evaluation Final Report in addition to an Impact Evaluation Proposal Report according to the below schedule in Table 4. The project team will submit three drafts of the Performance Evaluation Final Report. The first draft will be completed before the team travels to Cabo Verde to present their findings to stakeholders in country. The second draft will be completed after incorporating stakeholder feedback and submitted to MCC for comments. The third draft will be completed after incorporating MCC feedback. Any remaining feedback or comments will be incorporated before a final version is submitted by the end of the period of performance, June 30, 2016.

Table 4: Reporting schedule

Report Description	Expected Delivery Date
Monthly Progress Reports	On the 15 th of every month, covering activities during the preceding month.
Draft Performance Evaluation Design Report	September 25, 2015
Final Performance Evaluation Design Report	December 14, 2015
First Draft Performance Evaluation Final Report	March 21, 2016
Second Draft Performance Evaluation Final Report	May 20, 2016
Third Draft Performance Evaluation Final Report	June 17, 2016
Impact Evaluation Proposal Report	June 17, 2016
Final Performance Evaluation Final Report	June 30, 2016

7. References

The project team has compiled an extensive repository of background documents and data that have been reviewed. This list is regularly updated as the team collects additional information.

Table 5: List of documents reviewed

MCC BACKGROUND DOCUMENTS	
<i>DATA AND ECONOMIC ANALYSIS</i>	
Document Description	Notes/Comments
Port Traffic Forecasts 2014 – 2016	Self-explanatory
Ex-ante Economic Rate of Return	Self-explanatory
Port of Praia Handling Equipment (May 2007)	Inventory of Equipment
*Cape Verde I Port Activity Survey Documentation and Raw Data	NOTE: This data is found along with the Study: MCC BACKGROUND DOCUMENTS\STUDIES\Cape Verde I Port Activity Survey Documentation and Raw Data.zip
<i>M&E DOCUMENTS</i>	
Document Description	Notes/Comments
Final Indicator Tracking Table of Key Performance Indicators	Self-explanatory
Cape Verde Original M&E plan	Self-explanatory
Cape Verde 2005-2010 Compact Monitoring and Evaluation Plan Version III: October 11, 2010	Final M&E Plan
<i>MCC COMPACT DOCUMENTS</i>	
Document Description	Notes/Comments
MILLENNIUM CHALLENGE ACCOUNT – CAPE VERDE COMPACT COMPLETION REPORT	Self-explanatory
MCC Cape Verde Compact Agreement	Legal agreement between USG and GoCV
Cape Verde Compact Closeout Brief	8 page brochure covering all MCC programs in CV at closeout
<i>REGULAR REPORTING</i>	
Document Description	Notes/Comments
MONTHLY PROGRESS REPORT N°1 – BCEOM's Monthly Report - Preparatory Studies for the First Phase of the Port of Praia Expansion and Modernization Project - March 2007 (cover sheet, text, photos, maps, staff deployment, staff list, work schedule)	Self-explanatory

MONTHLY PROGRESS REPORT N°2 – BCEOM's Monthly Report - Preparatory Studies for the First Phase of the Port of Praia Expansion and Modernization Project – April 2007 (cover sheet, text, photos, maps, staff deployment, staff list, work schedule)	Self-explanatory
MONTHLY PROGRESS REPORT N°3 – BCEOM's Monthly Report - Preparatory Studies for the First Phase of the Port of Praia Expansion and Modernization Project – May 2007 (cover sheet, text, photos, maps, staff deployment, staff list, work schedule, meeting minutes)	Self-explanatory
MONTHLY PROGRESS REPORT N°4 – BCEOM's Monthly Report - Preparatory Studies for the First Phase of the Port of Praia Expansion and Modernization Project – June 2007 (cover sheet, text, photos, maps, staff deployment, staff list, work schedule)	Self-explanatory
MONTHLY PROGRESS REPORT N°5 – BCEOM's Monthly Report - Preparatory Studies for the First Phase of the Port of Praia Expansion and Modernization Project – July 2007 (cover sheet, text, photos, maps, staff deployment, staff list, work schedule)	Self-explanatory
<p>Monthly Progress reports – PHASE TWO</p> <ul style="list-style-type: none"> • PREPARATORY STUDIES FOR THE SECOND PHASE OF THE PORT OF PRAIA EXPANSION AND MODERNIZATION PROJECT – MONTHLY REPORT N°1 – September 2007 • PREPARATORY STUDIES FOR THE SECOND PHASE OF THE PORT OF PRAIA EXPANSION AND MODERNIZATION PROJECT – MONTHLY REPORT N°2 – October 2007 • PREPARATORY STUDIES FOR THE SECOND PHASE OF THE PORT OF PRAIA EXPANSION AND MODERNIZATION PROJECT – MONTHLY REPORT N°3 – November 2007 • PREPARATORY STUDIES FOR THE SECOND PHASE OF THE PORT OF PRAIA EXPANSION AND MODERNIZATION PROJECT – MONTHLY REPORT N°4 – December 2007 	Self-explanatory
STUDIES	
Document Description	Notes/Comments
<p>Preparatory Studies for first phase of the Port of Praia Expansion and Modernization Project – interim report September 2007</p> <ul style="list-style-type: none"> • Cover page • Brief Presentation of the interim report • Connecting Road – Preliminary Design • Cargo Village – Preliminary Design 	See respective table of contents through hyperlinks. 06-costs.pdf is 16 pages of detailed cost estimates

<ul style="list-style-type: none"> • Quay n°2 Complex – Conceptual Design • Breakwater – Preliminary Design • Cost Estimates • Port Operations Study Update • Environmental Comparison of Project Options • Market Study Update and Economic Study 	
<p>Additional Port Studies</p> <ul style="list-style-type: none"> • Wave refraction model • Oil berth scheme (draft) • Bulk berth and Pipelines layout (draft) • Other design documents 	Various designs/models of aspects of port investment
<p>Additional Port Studies</p> <ul style="list-style-type: none"> • Design document • Design document • MEMO – Future Oil Berth Occupancy • Design document • Design document • Report of the dredging Expert • Archaeological Report on the Praia Port Zone 	Predominantly designs/models
Cape Verde I Port Activity Survey Documentation and Raw Data	All of these files are in Portuguese. Questionnaires, Training manuals, raw data field reports
ENVIRONMENTAL IMPACT ASSESSMENT FOR THE CARGO VILLAGE, THE CONNECTING ROAD AND THE QUAY 2 COMPLEX	Self-explanatory
<p>Inception report</p> <ul style="list-style-type: none"> • report cover • map of port • map of port • Inception Report • work shedule 	Explanation of various pre-investment studies
Phase 2 Interim Report Design Drawings	10 files containing an assortment of designs/drawings of the Port Investment for phase 2
<p>PORT OPERATIONS STUDY REPORT</p> <ul style="list-style-type: none"> • Bill Allen (Engineer) review of port improvement plans • Port usage data 2005-2006 • Dwell time 2006 • Quay, Berthing demand, occupancy data • Cover sheet • Port handling equipment inventory 2007 • Cover sheet for port annexes • Meeting minutes on Preparatory Studies 	Self-explanatory

<ul style="list-style-type: none"> • PORT OPERATIONS STUDY REPORT 	
Preparatory studies for the first phase of the port of Praia Expansion and Modernization Project – Preliminary Market Study April 2007 <ul style="list-style-type: none"> • Preliminary Market Study and Update • Market Study Update and Economic Study (report, annexes, 11 excel documents with economic data) 	Self-explanatory
Security report <ul style="list-style-type: none"> • Port Facility Security Plan Part 1 • Port Facility Security Plan Part 2 • Port Security Assessment (all in Portuguese) 	Note that these documents are broken into many different sub-documents
Ship Maneuvers Study Report <ul style="list-style-type: none"> • SHIP MANEUVERS STUDY REPORT • Letter announcing delivery of Ship Maneuvers Study 	Self-explanatory
Source Material report <ul style="list-style-type: none"> • Operation plan, concession, letter (all in Portuguese) • Source material study report (all in Portuguese) • SOURCE MATERIAL STUDY REPORT (in English: report, cover, annexes, maps, and delivery letter) 	Self-explanatory
TOPOGRAPHY, BATHYMETRY AND LAND SURVEYS (cover sheet, report, location plan, 4 annex folders each with many pdfs)	Self-explanatory
OTHER DOCUMENTS	
Document Description	Notes/Comments
Ten 1-page posters	The posters highlight aspects of the port investments
DOCUMENTS COLLECTED IN-COUNTRY	
DATA AND ECONOMIC ANALYSIS	
Document Description	Notes/Comments
Annual Operational Data MCC Feb 2011 Annual Operations Report 2007 Annual Operations Report 2008 Annual Operations Report 2009 Annual Operations Report 2010 Annual Operations Report 2011 Annual Operations Report 2013 Annual Operations Report 2014 Commercial Data 1995-2006 Commercial Data 2007 2012 Commercial Data 2008 Commercial Data 2009 Commercial Data 2010 Commercial Data 2011	Self-explanatory

Commercial Data 2013 Containers Traffic 2012 Containers Traffic 2014 Final Annual Operations Report 2006 Final Annual Operations Report 2012 MCC Container Data Operational Data Monthly 2005 2001 Operational Data per month 2010 Operational Data per Semester 2005-2009 Operational Data Port Praia 2010 Operational Data Port Praia 2012 Operational Data Port Praia 2013 Operational Data Port Praia 2014 Operational Data Port Praia 2015 Operational Data Port Praia Years 2005-2009	
REGULAR REPORTING	
Document Description	Notes/Comments
ENAPOR--Portos de Cabo Verde, Annual Report and Financial Statements 2008 ENAPOR--Portos de Cabo Verde, Annual Report and Financial Statements 2009 ENAPOR--Portos de Cabo Verde, Annual Report and Financial Statements 2010 ENAPOR--Portos de Cabo Verde, Annual Report and Financial Statements 2011 ENAPOR--Portos de Cabo Verde, Annual Report and Financial Statements 2012 ENAPOR--Portos de Cabo Verde, Annual Report and Financial Statements 2013	Self-explanatory
OTHER DOCUMENTS	
Document Description	Notes/Comments
Carta De Politicas de Transporte (Transport Policy Legislation)	Self-explanatory
Tariff Book Caderno Tarifario Enapor 2013	Self-explanatory