

# ICE Exam Pilot 2021

## Case Study

31 March 2021

## PPP Island Transport Infrastructure Improvements

The island of Saint Thomas is the westernmost island of an archipelago lying 250km off the coast of Africa. At 1200km<sup>2</sup>, it is the largest of the Islands. Its population was 90,547 in 2015. Its largest town is New Port on the south coast (population 12,310 in 2010).

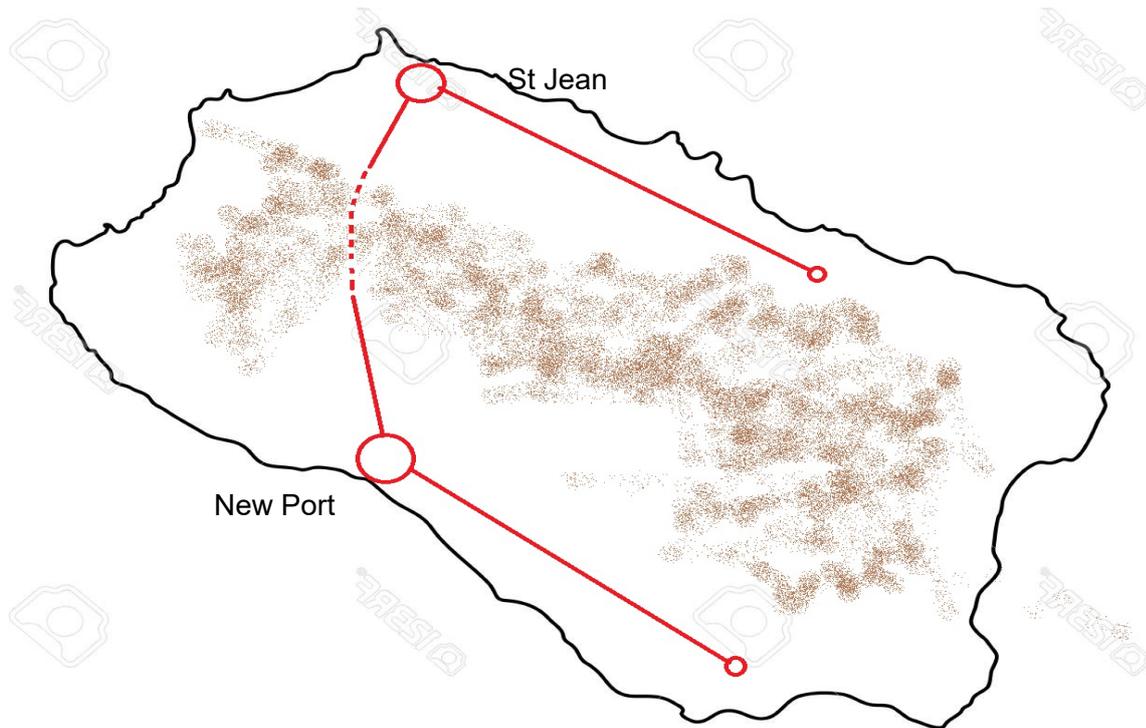
Saint Thomas is 46.75km long (east-west) and 28.97km wide (north-south). The island is of volcanic origin and a spine of mountains, together with two high plateaus, divide the north and south of the island. There are several steep river valleys. The southern part of the island has an arid climate, while the northeast and the higher elevations are more temperate with relatively lush vegetation.

Low wages and a low standard of living dominate. Fishing and agriculture have historically been the main industries on the island. Agriculture products include sugar cane, yams, cassava, bananas, mangoes, and grain. Due to its mountainous nature, most of the island's plantations are on terraces. In recent years tourism has grown in significance. Small and medium sized cruise ships now visit New Port all year round, and there has been some investment in rural tourism. Hiking, Trekking and Cultural tourism account for most of the touristic offer. Beaches along the north side of the island are undeveloped and there is potential to attract inward investment from hotels and associated tourist infrastructure, together with private/rented holiday homes.

The Municipal Authority has developed a 30-year Strategic Plan to grow the economy sustainability and improve the prosperity of local communities. The population is expected to grow by 20% over that period. Tourism will be developed along the beaches to the north of the island and food processing plants will be developed around New Port. The strategy aims to significantly increase Social Value\* through job creation, training, and improved wages, by stimulating economic growth and protecting the environment.

*\*Social Value measures the wider economic, social, and environmental effects of organisational actions. Public sector bodies take social value into account through their policy, spending decisions and procurement to maximise the long-term wellbeing of the communities they serve. The United Nations Sustainable Development Goals are, in effect, a social value charter for the planet.*





A private developer is investing in a new quay and Cruise Terminal at New Port to accommodate larger cruise ships. Existing ferry services serving neighbouring islands will also be improved. Off-shore wind farms and on-shore generators sited on the slopes of the mountains to the west of the island have the potential to provide 75% of energy needs by 2030. The existing road network is antiquated and unsuitable for modern transport needs. Roads built in the C19 are constructed of hand-cut stone setts quarried locally. Rural roads are unmade. There are a number of stone arch and timber trestle bridges. There are no railways.

A study funded by the World Bank has shown that a railway is feasible between New Port and the northern township of St Jean. A 7.3km tunnel and a number of viaducts will be needed. Spurs to the east of New Port, and to the east of St Jean, will accommodate both passenger and goods trains to serve both tourist traffic and the processing/export of agricultural products. Improved roads will link four transport hubs (New Port, St Jean, and termini on the spur lines) to new tourism developments and the agricultural hinterland.

The World Bank has agreed to provide £730m funding for a Public Private Partnership (PPP) to construct the railway and Transport Hubs, improve the existing road network (including structures, lighting signs etc) and to maintain transport infrastructure for a period of 30 years. The St Thomas Municipal Authority will finance the project from central government grants, income from rail profits and road vehicle licences, and increased taxation accruing from economic development. Works will include improvements to a network of hiking trails, including footbridges, to further develop Trekking and Cultural tourism. The project will be implemented through the following stages:

**Stage 1:** The World Bank (Lender) has appointed a Technical Advisor to support the Saint Thomas Municipal Authority (Project Sponsor) to procure an Operating Company (OpCo) responsible for procuring and managing the design and construction of the core infrastructure over a period of 7 years, and to operate and maintain all of the transport infrastructure on the island for the full contract period of 30 years. The Technical Advisor will develop Service Standards for both construction and maintenance phases, including ensuring that infrastructure handed over to the Project Sponsor at the end of the 30-year contract can be affordably and sustainably operated and maintained. The World Bank defines international standards of Health, Safety and Welfare, and expects whole-life sustainability to be achieved aligned with the United Nations Sustainable Development Goals (UN SDGs). The OpCo will be responsible for developing a cost model for both the initial investment (new infrastructure) and ongoing maintenance. The OpCo will also be responsible for raising additional finance to fund the projected cost-model and viable pay-back mechanism to complement the funding agreed with the World Bank.

**Stage 2:** The OpCo procurement process involves:

- i) Pre-Qualification to ensure bidders are qualified to successfully deliver the project
- ii) Invitation to Submit Outline Solutions (ISOS) - 4 to 6 bidders
- iii) Invitation to Submit Detailed Solutions (ISDS) – 2 to 4 bidders
- iv) Invitation to Submit Refined Solutions (ISRS) – Final two

**Stage 3:** Core Design and Build phase, including supply-chain mobilisation (7 years). It is expected that both direct employment and the wider supply chain will benefit the population of St Thomas and the wider archipelago. Operation and Maintenance (O&M) of existing infrastructure will be required in parallel with design and build.

**Stage 4:** O&M phase (23 years), including responsibility for health and safety of the new operational railway and highway network; and the oversight of new development and maintenance of associated infrastructure constructed over the lifetime of the contract. The existing municipal workforce will transfer to the OpCo for the duration of the contract. Existing employment terms and conditions must be maintained or improved.

**Stage 5:** Demobilisation and handover. It is expected that skills and supply chains developed over the course of the contract will be sustainable over the longer term and that all infrastructure will be handed over in a fit state for affordable ongoing operation and maintenance.

The World Bank Technical Advisor will monitor compliance with Service Standards during both construction and O&M phases, and will check infrastructure condition standards as part of the contractual hand-back. The Project Sponsor requires that the project be designed, constructed, maintained, and operated without detriment to the health and safety of the workforce, future transport users or that of island communities.

Whilst the need for economic development is widely recognised, local residents are concerned about the impact of the project. An international environmental campaign group is alerting the media to the effect on the unique ecosystems of the island. A global media star is championing their campaign. Farmers are concerned that traditional methods of farming, and manual processing, will be replaced by mechanisation. There is also concern that the current network of stone-sett roads is part of the unique character of the island that currently attracts tourists. Improved infrastructure may change the Island for the worse, not for the better.

Residents believe that appointment of an international design and build contractor will result in an influx of foreign workers, as there are limited construction skills available on the Island. The social impact of a largely male workforce living close to local communities is feared by some. A further concern is that some of workers may suffer stress / mental health issues resulting from working away from home for long periods and may constitute a health burden affecting local communities.



## Questions

1. What are the internal (management/governance) and external (geographic/social/political) environments? How will they influence the culture & management processes required? How would moral issues inherent in the project influence leadership and management?
2. How might political cost/funding concerns be balanced by economic growth ambitions? How would you control cost and demonstrate economic benefit to stakeholders over the project lifetime? How will you work with stakeholders to maximise social value?
3. What are the principal risks and opportunities associated with successful design, construction, maintenance, and operation of the island's infrastructure? How could these be managed effectively to achieve the projects objectives over its lifetime?
4. Lying 250km off the coast of Africa, sourcing materials for island infrastructure introduces logistical constraints and sustainability concerns: What are they? How will this influence the supply chain? How will you manage the programme to avoid delays?
5. How would you develop and implement a Health Management Plan specific to this project? What are the main health risks likely to be, and how might they be prioritised and managed?
6. From your experience and/or technical discipline, identify a specific technical challenge that might be encountered. How would you address this challenge innovatively, sustainably, and affordably?



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- To promote our contribution to society worldwide

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Institution of Civil Engineers  
One Great George Street  
Westminster  
London SW1P 3AA  
UK

T: +44 (0) 20 7665 2211  
E: [membership@ice.org.uk](mailto:membership@ice.org.uk)  
W: [ice.org.uk](http://ice.org.uk)

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