



# **Caribbean Aqua-Terrestrial Solutions**



## **Caribbean Aqua-Terrestrial Solutions Programme**

**Overview of Berthing Jetty Construction in Dominica to support community adaptation to climate change**

**Prepare by**

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## **The CATS II Programme**

The CATS II Programme which operates in eight (8) out of 15 CARICOM member states namely Belize, Guyana, Jamaica, St Kitts & Nevis, St Vincent & the Grenadines with Dominica, Grenada, and St Lucia being the three focal countries, embrace efforts to reduce vulnerabilities linked to climate changes and promote actions that increases resilience and adaptation. The Programme targets groups and organizations predominantly in marine managed areas communities. The major groups include fisher folk, farmer organizations as well as employees in the tourism sector and small and medium-sized businesses. The Programme has a regional focus and promotes strong collaboration amongst partners to improve adaptation of groups and communities to climate change. An integrated and gender-sensitive approach is embraced to tackle poverty, unsustainable practices which diminishes the ability of terrestrial and marine ecosystems to produce goods and services. Components of support of this technical corporation Programme are consulting, institutional, organizational and human resources development, procurement of equipment to a limited extent, as well as support for the organization of seminars and conferences and the establishment of dialogue platforms for the implementation of measures aimed at adaptation to climate change. CATS prided itself in applying systemic resources management in selected member states to increase climate resilience and as a tool for sustainable development. The Programme is implemented jointly between GIZ and the CARPHA, together with other national (focal) partner institutions in the countries.

The Programme will end in August 2021 after the completion of a berthing jetty construction project in Dominica and is succeeded by the Sustainable Marine Financing Programme.

## **Justification for the Jetty Development in Dominica**

In recent years, extreme weather events have caused major disruptions to several coastal communities across Dominica. Notably, Tropical Storm Erika in 2015 and Hurricane Maria in September 2017 were the most economically disruptive causing widespread damage to road infrastructure and the impairment of terrestrial and marine ecosystems in numerous locations including the Soufriere Scotts Head Marine Reserve (SSMR) communities. The return period of such extreme events will likely decrease (i.e. become more frequent) in the future because of climate change. The effect on communities like Soufriere and Scotts Head will be acute given the topographical constraints, the interconnectedness of the terrestrial and marine ecosystems, and the dependence of local livelihoods on the intactness of these ecosystems.

The Government of Commonwealth of Dominica (GOCD), community-based organizations within Soufriere and Scotts Head as well as the local area management authority (LAMA), echoed the need for assistance in disaster vulnerability reduction under the CATS II Programme. To mitigate vulnerability within these communities, the construction of a climate-resilient berthing jetty was seen as the most economically viable option that can provide for quick unimpeded access and sea escape route in times of emergencies. The jetty infrastructure will reduce the emergency response time between Soufriere/Scotts Head communities and Roseau by nearly half. At the same time, the construction of such a facility within the marine managed area (MMA), is expected to create and expand new economic opportunities for LAMA and the local communities towards greater financial sustainability. The jetty will also complement the proposed Community Yacht Mooring Programme and the fisher folks and farmers alike, who depend on the trading of fish and foods to other communities across Dominica.

Without this critical infrastructure, LAMA and the communities will remain extremely vulnerable to climate change impacts with limited options to support the economic opportunities within the MMA. Therefore, the construction of the berthing jetty in Soufriere was regarded as important, if not the most urgent, short term priority under the CATS Programme to increase the community adaptation to climate change and to enhance LAMA's finances.

The present jetty location is in Soufriere Bay, Dominica as depicted in the map below. The Soufriere- Scots Head Marine Reserve is one of the two marine protected areas established in Dominica nearly thirty years ago to conserve the marine space

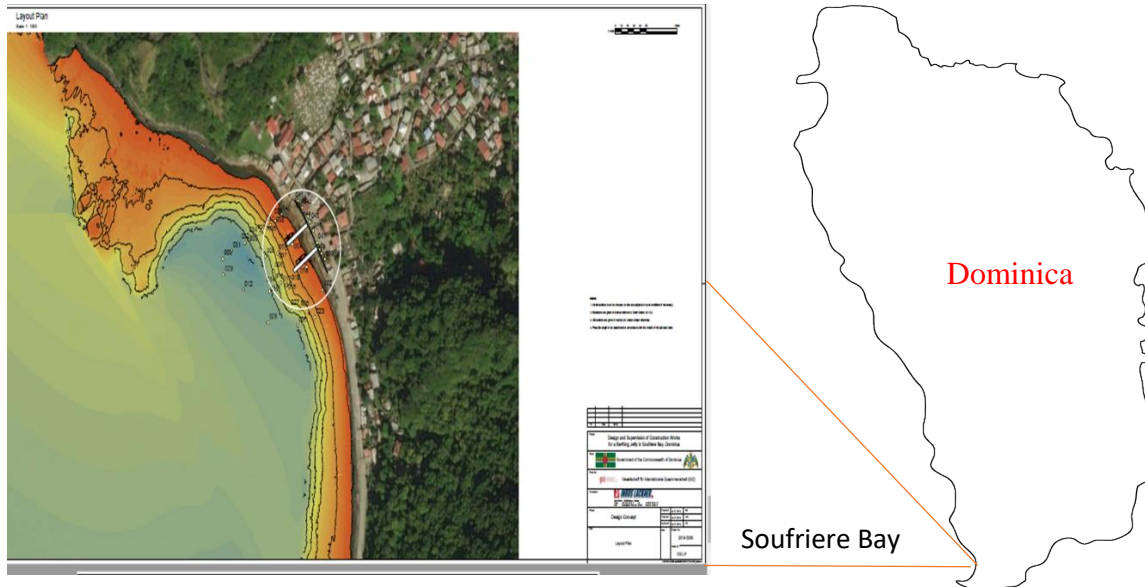
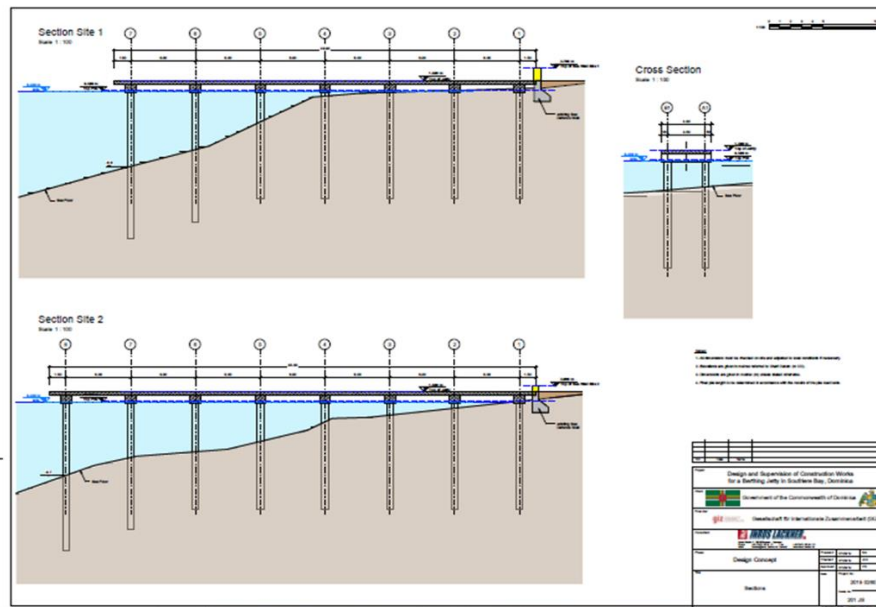
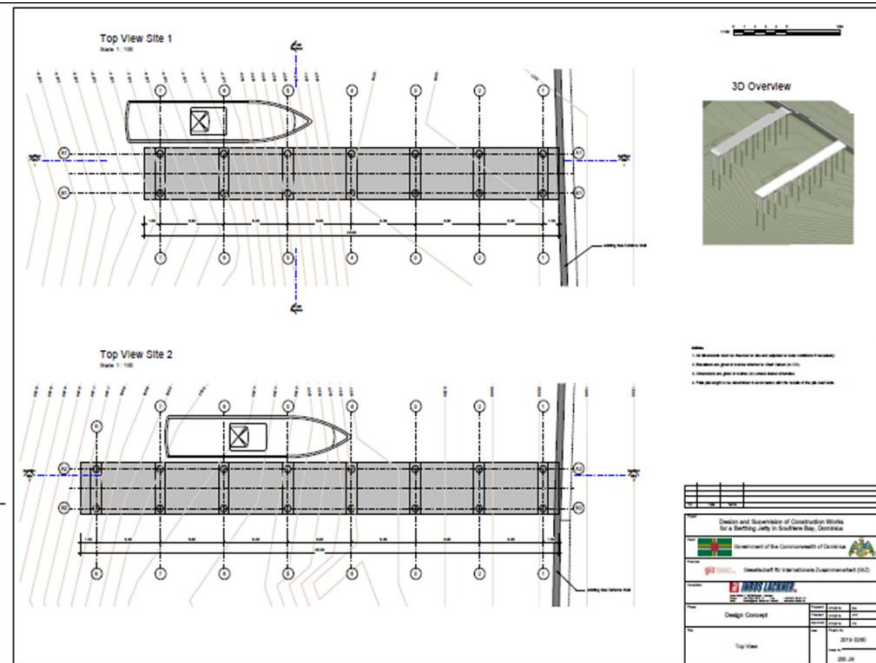


Figure showing jetty construction site in Dominica

### The Jetty design and technical specification

The jetty design was informed by broad community consultations and participatory approaches, preliminary data collection on site, biophysical factors, and cost considerations. During this phase two options were discussed (see graphics below). Taking into account the above mentioned factors the stakeholders agreed on Site 2. The technical specifications were the result of a successful international tender. The present design consists of reinforced concrete supported by steel piles and the installation of berth equipment such as bollards, ladders, and fenders. In addition, an EIA was undertaken as a requirement under the Planning Act of Dominica for such developments. The design and supervision works are being undertaken by Inros Lackner, a German Consulting Firm and the construction works being carried out by Offshore Civil and Marine Inc., a local Dominica company which specializes in jetty construction and sea defence works.



### Final berthing jetty design

#### Design summary of berthing jetty:

- The top level of the jetty sits at 1.50 m above Chart Datum (CD) or approx. 1.05 m above MSL.
- The jetty extends to a water depth of approx. – 5 m CD based on water depths measurements.
- The jetty is approx. 38 m long
- Design consist of massive concrete deck structure with breathers (holes) located every **500 x 500 mm** in the deck slab.

- The T-Head bollards are used as this bollard type is better protected against impacts from floating debris due to its low shape compared to other bollards. Bollard have a bearing capacity of 10 tons which is sufficient for the design vessel
- Simple rubber fenders will be used to protect vessels
- Rubber ladders are to be installed with their lower part being flexible & less prone to damage induced by floating debris
- Solar lighting with removable light posts will be utilized
- A 2” HDPE Polyethylene water pipe with a non-corrosive tap to be installed for water supply to the jetty.

Owing to the multiple uses envisioned for the facility, the Government of Dominica provided support in the form of duty and tax waivers. Once completed the facility will be handed to the Government of Dominica to enhance livelihood and facilitate evacuation should the need arise.

The finances for the construction of the jetty was made available through the CATS Programme to the tune of 595,740.25 USD (15% VAT inclusive). This project is by far the largest in terms of budget allocations under the CATS II Programme.

In January 2021, phase one of the two phase construction works commenced following a site handover meeting in which all key stakeholder groups including the local community. Phase one involved driving test pile into the ground within the proposed site to obtain site specific and ground data critical to the final design and costings. Phase two kicked in after the results of the phase one investigations were ascertained by the Inros Lackner and approved by the Government of Dominica. Construction works commenced in February 2021 and is presently ongoing. The construction process is anticipated to end in July 30<sup>th</sup>, 2021.

From mid-July to the 28th, the supervisory project engineer from Inros Lackner will be present in Dominica to complete inspection of works, conformance to technical specifications, and the handover of the project facility to GIZ. This will be followed by a formal handover ceremony to the Government of Dominica on or before August 15<sup>th</sup>, 2021.

The project paced along with no major glitches except for the present delay in the arrival of bollards, ladders, and lighting fixtures. According to most recent update, these items will be in Dominica within the next five weeks. The jetty is at present 90 % complete with the installation of the bollards, lighting and ladders pending.

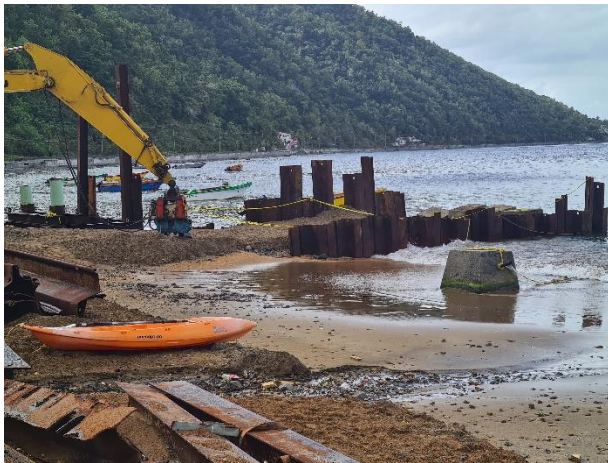
A total of 23 weekly reports thus far have been compiled since inception. Weekly supervision on behalf of GIZ-CATS is completed by Brendan Defoe, GIZ National Project Officer for Dominica and by Mr. Bernard Nation, site supervisor for Inros Lackner. CATS II Marine Expert, Camille David, provides the needed oversight for construction processes. During the monthly supervision and random weekly inspections, engineers from the Ministry of Public Works form part of the inspection team to verify technical aspects of the ongoing works.

## Summary of Progress to date

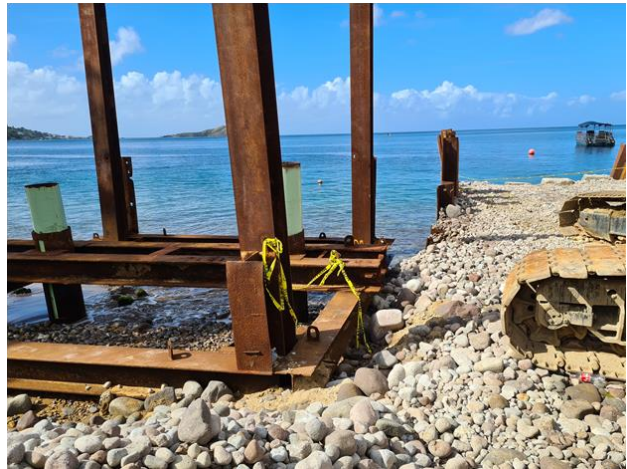
The table below summarizes the progress achieved to date.

Phase 1- Concept and Tender Design		
Task 1	Inception	100%
Task 2	Environmental Impact Assessment	100%
Task 3	Design Concept	100%
Task 4	Tender Design	100%
Phase 2- Tendering and Supervision of Construction		
Task 5	Tender Process	100%
Task 6	Supervision of Construction Activities	90%
Task 7	Project Documentation	10%

## Photographic documentation of the works



Construction of berm for piling work commences



Test piles installed to obtain ground data to inform final designs



Installation of additional coated piles



Curing of slabs prior to installation on jetty platform



Capping form works in progress



Example of completed capping



Precast slabs placed on finished cappings



Completed capping with slabs installed



Slabs in place on all capping awaiting remaining steelwork before surfacing



Construction of fishermen landing pads



Formwork of slabs and landing edge for concrete in progress



Wetting of pored surface to prevent cracks



Construction of jetty ramps system underway



Fisherman landing being testing with boat





Completed jetty surface without ramps



Finished ramp extension for ease of access



Inspection of the facility



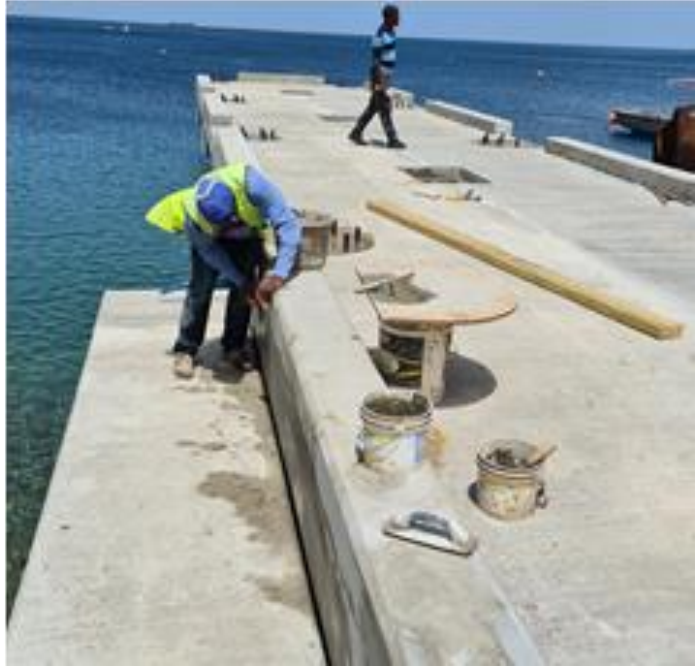
Completed curbs for jetty



Blow hole to dissipate wave energy and uplift



Blowout covers fittings



Final touches to polish rough concrete

End of Report