English version

EXTENSION AND MODERNIZATION OF THE PORT OF SAINT MARTIN

Pre-consultation File with Guarantors

Saint-Martin
Caraïbe Française | French Caribbean
ÉTABLISSEMENT PORTUAIRE

Saint-Martin
Caraïbe Française | French Caribbean

L'Europe s'engage à Saint-Martin

LA CNDP
MA PAROLE A DU POUVOIR

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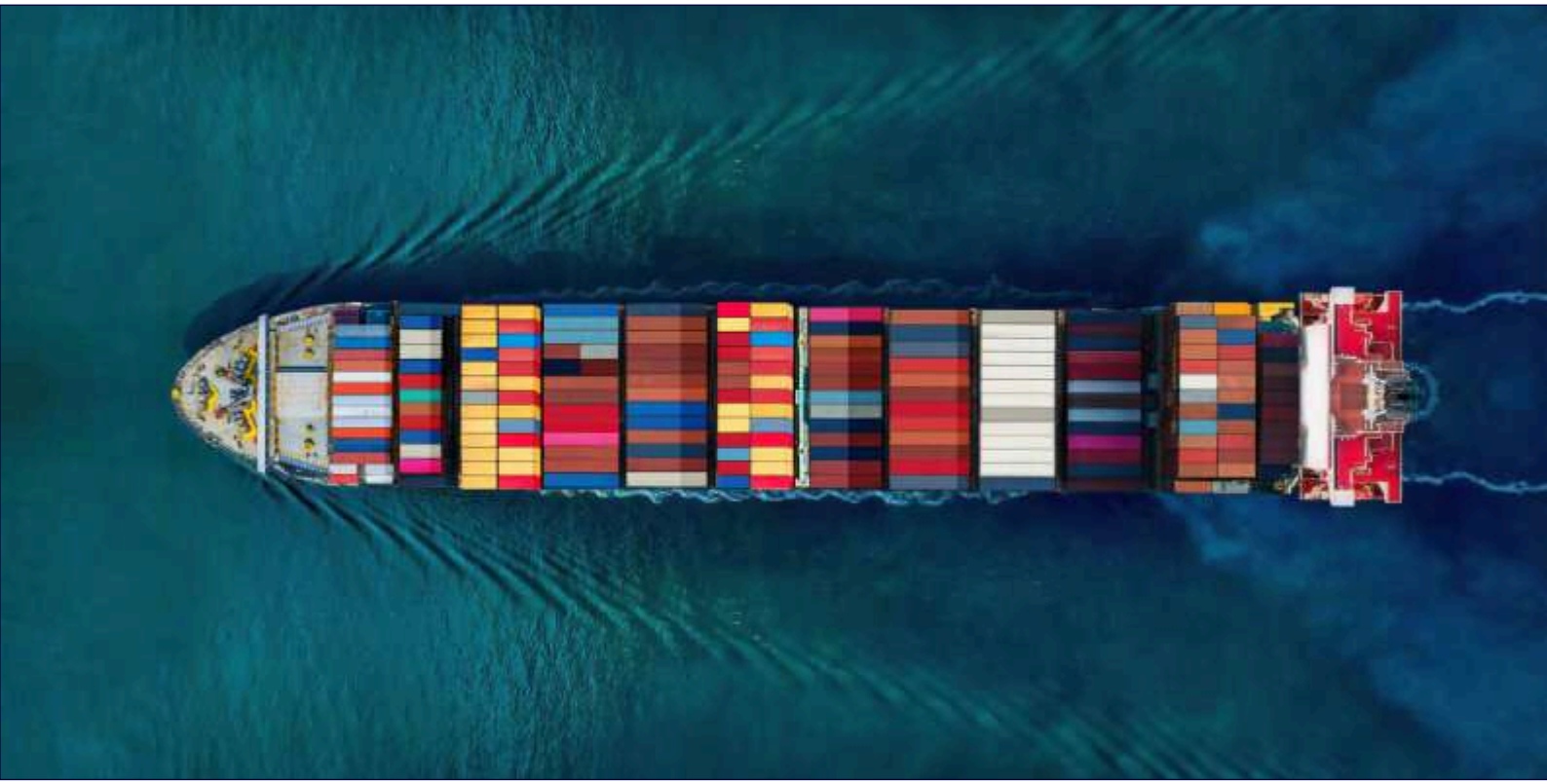

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A FEW WORDS FROM THE PRESIDENT OF THE COLLECTIVITY

Ladies and Gentlemen,

For nearly three decades, the Port of Galisbay has played a pivotal role in the island's economy. Operating our public port since 2007, the port authority, overseen by the Collectivity of Saint-Martin, stands as an indispensable managerial instrument. It also enables the Galisbay Port to serve our territory as the primary entry and exit point for goods to and from the French part of Saint-Martin.

Aligned with the strategic plans that have accompanied the recent development of St. Martin's port, the Port of Galisbay has embarked on an ambitious yet practical expansion project. This initiative addresses current and future needs, requiring a collaborative effort.

The port extension project aims to handle a substantial flow of goods and support the implementation of our tourism development strategy. Its success is crucial for achieving greater autonomy, freeing ourselves from the port of Sint Maarten, and ensuring our commercial sovereignty.

The extension project will undergo a consultation process in early 2024, following the conditions outlined in the French Environmental Code. The "preliminary consultation" will involve two guarantors appointed by the National Public Debate Commission. I trust that this process will set an example. It should provide an opportunity for all interested parties to express their perspectives on the economic, environmental, developmental, and sovereignty aspects of this project, crucial for our region.

Within this document, you will find comprehensive information addressing the intricacies of our extension project.This background will offer a clearer understanding of the project's scope and assist you in forming your ownpinions on the anticipated benefits.

The proposals and opinions expressed will be analyzed to enable the guarantors to publish a detailed report. Based on your suggestions, we will then make firm, well-argued decisions, and commitments.

We have chosen to center this extension project around the sustainable development of our economy and the improvement of the purchasing power of the local people. The current shallow draught of our port (around 5.5m) compels economic players on the French side to utilize the port of Sint Maarten and incur more than 2 million euros in taxes to the Dutch side annually, significantly impacting our population's purchasing power.

This is why our project advocates for a sufficient draught while adhering to two essential criteria: minimizing the impact on the marine environment and water quality and maintaining a reasonable financial cost. This approach aligns with our tourism strategy, focusing on attracting yachtsmen and upscale customers traveling on small vessels (100 to 360 passengers).

In the tourism sector, numerous opportunities for cruise development exist, given the region's dynamism and the saturation of the port of Sint Maarten, especially during the high season.

Thanks to a more favorable tax system on the French side compared to the Dutch side, yachting is an integral part of Saint-Martin's tourist landscape and a popular stopover for sailors.

To safeguard the environment, the port extension must consider the natural risks in our region while minimizing the impact on the marine environment. It is crucial to limit anchorage areas, aligning with our commitment to preserving marine flora and fauna. The upcoming establishment of the Caribbean Institute of Island Biodiversity and our strategy for the development of the blue economy contribute to this shared objective.
I invite you to actively participate in the discussions and exchanges during this consultation, contributing to this dynamic process.

With your input, we can fine-tune our project to perfectly align with the needs of port infrastructure development and the economic and tourism growth of Saint-Martin.

M. Louis MUSSINGTON
President of the Territorial Council of Saint-Martin.

MESSAGE
FROM THE GUARANTORS

Dear Sir/Madam,

The Port of Galisbay project is undergoing a consultation procedure in accordance with the French Environmental Code. This process allows any interested individual, stakeholder, or organization to access information, question the project, and receive a response.

The preliminary consultation is a crucial phase for territorial dialogue, providing an opportunity to discuss the project's suitability, characteristics, socio-economic and environmental impacts, alternative solutions (including the option of abandoning the project), and the procedures for subsequent public information and participation. The French government will decide whether to instruct the Overseas Collectivity (COM) and the port authority to continue studying the project only after the conclusion of this stage.

Following the regulations of the French Environmental Code and in alignment with the constitutional right of all individuals to be informed and participate in decisions related to the environment, the National Commission for Public Debate (CNDP), an independent authority, must be consulted for projects of this nature. On May 19, 2023, the National Commission for Public Debate (CNDP) was jointly consulted by the COM and the Port of Galisbay. It decided to initiate a preliminary consultation process, defining the terms and conditions, validating the consultation file, and setting the timetable.

In this context, we have been appointed as guarantors of this participation procedure under its auspices.

Following extensive discussions with the project owners regarding the terms and conditions of the consultation and the content of this information file, our mission is to ensure that this consultation adheres to the principles and values of the CNDP: independence and neutrality of the guarantors concerning the project and the stakeholders, transparency of information, equal treatment of the public, articulation of the debates, and inclusion of all audiences. Our mission is to guarantee the sincerity and smooth progress of the consultation process, scrutinizing the clarity and completeness of the information provided and ensuring that everyone, regardless of their status, can participate in the various debates, expressing their arguments, questions, and proposals throughout the consultation. We will particularly focus on the quality of the responses you receive.

At the conclusion of the consultation process, we will compile a report that will be made public. The law entrusts us with reporting on the public's expectations and contributions, as well as the arguments exchanged during the consultation. Our report will provide an account of the process and assess the effectiveness of participation:

Was the public present and adequately informed about the project, its issues, characteristics, and impacts? Were they able to express themselves freely? Did they receive satisfactory answers to their questions, allowing them to provide comments, suggestions, and, ultimately, their opinion on the project?

The project's responsible entities will produce a public report addressing their responses to the public comments and reservations outlined in our report, along with any proposed changes to the project. The French government will then determine whether to proceed with the project.

We hope that this significant opportunity to inform you and contribute to the project will encourage your engagement and active participation. We are available to assist you throughout the consultation period for any questions or comments regarding the organization and progress of the procedure.

Ilaria CASILLO

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PROJECT
DEVELOPERS

The project to extend the port of Saint Martin is being spearheaded by the Saint-Martin Port Authority (referred to as EPSM), commonly referred to as the 'Port of Galisbay.' The Collectivity of Saint Martin, in collaboration with the port authority, jointly submitted the extension project to the National Commission for Public Debate (referred to as CNDP). This collaborative effort aims to establish a shared vision for the development project and its integration into the broader regional initiative.

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The Saint-Martin Port Authority is a Public Establishment of Industrial and Commercial Character (referred to as EPIC) created in 2007. It is statutorily responsible for "managing the development and promotion of port sites".

Port governance corresponds to a public port model, where a port authority ensures the provision of infrastructure to port users. The Port Authority of Saint-Martin is overseen by a Board of Directors consisting of 6 members from the Collectivity. This Board is specifically tasked with making significant budgetary decisions and arbitrating projects. The Director holds an executive role, overseeing the day-to-day management of the Port Authority.

The Collectivity of Saint Martin has delegated the development and maintenance of port infrastructure to the Saint-Martin Port Authority / EPSM. Aiming to position the port as a tool in the service of the island's development, it has been actively involved in a study for its modernization over several years. In pursuit of this goal, the Collectivity of Saint Martin community has partnered with the port to conduct this initial consultation, seeking to contribute to the discussion and shape it into a project that serves the territory. Through this collaboration, the Collectivity of Saint Martin will address public inquiries alongside the project owner, and will communicate the consultation results back to the port. The project's progression hinges on approval from the territorial council.

Saint-Martin
Caraïbe Française French Caribbean

1. GENERAL PROJECT CONTEXT

1.1 Regulatory context of the project

1.1.1 Consultation under the aegis of the National Commission for Public Debate

By referring the matter to the National Commission for Public Debate (CNDP) on May 19, 2023, the Port Authority of Saint Martin presented the project's characteristics and the associated regional issues. Subsequent to this referral, the CNDP determined that the Collectivity should organize a preliminary consultation with guarantors, as per Article L.121-9 of the Environmental Code. This was to facilitate discussions about the project in accordance with the procedures outlined in Article L.121-8 of the same code. The Commission acknowledged the significant environmental impact of the project, along with its substantial implications for regional development and socio-economic aspects. To oversee this consultation process, the CNDP appointed two guarantors: Mrs. Ilaria Casillo and Mr. Roger Annicette.

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1.1.2. Guarantees provided by the National Commission for Public Debate (CNDP)

The National Commission for Public Debate is an independent administrative authority established in 1995 by the Barnier law. Comprising a collegial body of 25 members from diverse backgrounds to ensure its independence (including representatives from administrations, associations, employers, trade unions, etc.), its primary role is to safeguard public participation in the development of projects, plans, and programs with environmental impact and significant socio-economic implications such as energy transition, mobility, and industry. Actively engaged with the public, the CNDP maintains a nationwide presence through its regional representatives (delegates) and a network of 250 guarantors tasked with ensuring that the public is informed and actively involved. Additionally, the CNDP promotes a culture of participation by offering guidance and methodological opinions on various public participation initiatives.

1.1.3. Prior consultation objectives

The purpose of prior consultation is to communicate the environmental challenges, socio-economic impacts, and regional development and integration aspects to the stakeholders and populations affected by the project, aiming to facilitate an informed decision-making process. This dialogic phase is designed to collect the perspectives and proposals of various stakeholders, contributing to the improvement of the decision that will be made by the contracting authority at a later stage.

1.1.4. Legal framework for prior consultation

Article L. 121-15-1 of the French Environment Code stipulates that "prior consultation provides an opportunity to discuss the opportunity, objectives and main features of the project or the objectives and main orientations of the plan or program, the related socio-economic issues and their significant impact on the environment and regional development. Where appropriate, this consultation enables alternative solutions to be debated, including, in the case of a project, its non-implementation. It also covers the procedures for informing and involving the public after prior consultation. Concertation must therefore comply with a certain number of principles, including :

- Providing the public with complete, transparent, intelligible, and honest information;
- Clarifying the room for maneuver that allows, if necessary, adjustments to the project based on observations from the consultation;
- Ensuring the "equivalence" of different participants, with this term encompassing the idea that each participant regardless of their presumed level of expertise should have their contribution taken into account and receive a reasoned response

1.1.5. The role of guarantors

The guarantors are selected from a national eligibility list. Their role is to ensure the smooth conduct of the consultation and to ensure that it adheres to the principles and values of the National Commission for Public Debate / CNDP.

- Before the consultation: The guarantors have met with various stakeholders (elected officials, associations, etc.) and collaborated with the leaders of the Saint Martin Port Authority, the contracting authority, to ensure that this consultation file best meets the information expectations of stakeholders, respecting the principle of equal treatment. The guarantors have also worked with the contracting authority to present to the CNDP a consultation framework tailored to the project's challenges. They have also verified that public information about the holding of a prior consultation has been as extensive as possible.
- During the consultation: The guarantors will continuously ensure that the public has actual access to necessary information, including impact studies, that observations and proposals are acknowledged, and that exchanges are well-argued and take place in a climate respectful of all

participants.

- After the consultation: No later than one month after the conclusion of the consultation, the guarantors will provide an assessment of the consultation. This assessment will evaluate how the consultation unfolded, synthesize the observations and proposals made, including, if applicable, suggestions for the evolution of the project presented at the consultation by the project owner. The assessment will also make recommendations to the project owner regarding the methods of informing the public during subsequent phases of the project. This document will be made public by both the CNDP and the Saint Martin Port Authority.

1.1.6. Follow-up to the consultation

At the conclusion of the consultation process and following a review of the guarantors' report, the project owner will prepare a document summarizing the contributions made by participants in the debate. This document will outline the insights gained by the project owner from the consultation process and detail the decision on how to proceed with the project. These documents will be appended to the administrative authorization application file, forming the foundation for the public inquiry preceding the declaration of public utility for the project.

1.2. Procedures for the consultation process

1.2.1. Informing and mobilizing the public

The consultation period runs from **February 26 to April 21, 2024**. It is announced two weeks before it opens.

An information and communication campaign has been set up to publicize the project and how to take part in the consultation process. It includes :

- A dedicated web page (URL to come) where everyone can find out about the project and give their opinion. https://www.portdemarigot.com/extension
- A public consultation file available on the website
- The consultation file will also be made available to the public at the port and at the Collectivity of Saint Martin.
- Two mobile debates around a stand hosted by the project developer
- A radio show with the project developer
- A tour of the port organized during the open house event.
- Regular publications on social networks (Facebook, Instagram) to inform about exchange times
- Regular publications in the press (Daily Herald, Le Pelican, Fax Info, 97 150) to provide information on the consultation and discussion sessions.
- Posters and flyers
- Radio spots to mobilize the public around the consultation (Radio Saint Martin, Youth Radio, SOS Radio, Radio Transat)

1.2.2. Public participation procedures

Tout au long de la concertation préalable, le public peut formuler ses avis, questions et propositions :

- Via a contribution form on the consultation website https://www.portdemarigot.com/extension
- Via a "mobile" paper register made available during in-person debates
- During face-to-face and remote discussions

Consultation meetings

- **1 Public Launch Meeting**, face-to-face and remote
- **7 participatory workshops,** face-to-face:
  - Participatory workshop 1: What are the development prospects for Saint Martin with its port?
  - Participatory workshop 2: Environmental issues
  - Participatory workshop 3: How will the port extension serve tourism development in Saint Martin?
  - Participatory workshop 4: How does the port extension contribute to the development of

commerce in Saint Martin? (for economic stakeholders)
    - Participatory workshop 5: Project costs and financing
    - Participatory workshop 6: the alternatives workshop
    - Participatory workshop 7: Goods Port, Marina, How Will They Coexist Tomorrow?
- **Public Feedback Meeting,** face-to-face and remote

Members of the public are also encouraged to electronically submit their observations and proposals to the guarantors for publication on the dedicated consultation website:

1.3. Major issues addressed by the project

1.3.1. Responding to economic and competitive challenges

Galisbay's economic landscape is significantly influenced by its proximity to the Dutch part of the island, Sint Maarten. Presently, the Dutch port of Philipsburg surpasses Galisbay in capacity, boasting a draught of 9.5 meters compared to Galisbay's 5.5 meters, and a quay length of 490 linear meters versus Galisbay's 280. Consequently, a substantial portion of domestic traffic is redirected to Philipsburg, which manages approximately 75% of the island's total traffic. Galisbay has consequently evolved into a primarily bulk goods importing port and a redistribution point for goods unloaded in Philipsburg intended for the French side. This limitation diminishes the direct and indirect revenues generated by the port of Galisbay and adds taxes to goods imported by the French side, as containers passing through the Dutch port incur a tax allocated to the maintenance of the Dutch road network. It is estimated that containers transiting through Philipsburg en route to the French side contribute around 2 million euros in taxes annually.[1]

Moreover, maritime activity in the Caribbean has surged, prompting Caribbean ports to expand their capacities to accommodate vessels, especially to handle the growth in transshipment traffic. Larger vessels, unable to dock directly at smaller ports due to their increased average size, necessitate the transfer of their cargo to smaller vessels capable of accessing these ports. Ports like Guadeloupe and Martinique, leveraging their natural configuration and strategic locations, have enhanced their capabilities to manage transshipment traffic. These ports can handle ships exceeding 200 meters in length, positioning themselves as transshipment hubs, whereas Galisbay manages ships up to 150 meters in length and handles only a fraction of transshipment operations. The project's primary goal is to foster the development of transshipment activities, positioning the port of Galisbay as a key port infrastructure in the Lesser Antilles.

Additionally, the extension project aims to modernize port services by augmenting cargo handling capacity, alleviating infrastructure saturation and reducing associated waiting times, which impact port passage costs.

[1] Socio-economic Analysis of the Galisbay Port Extension Project, SEE UP, 2023

Philipsburg's port is also nearing capacity, and its location and configuration do not allow for expansion.

Beyond its emphasis on cargo traffic, the project also aims to position the French part of the island in the small to medium-sized cruise market by targeting the reception of small, high-end cruise ships through a dedicated multipurpose quay, which can also be utilized for cargo traffic in the absence of cruise activities.

1.3.2. The call to strengthen the sovereignty of the French part of the island

One of the significant development challenges for the port is to secure the self-sufficiency of the French part of the island, especially during natural disasters.

The port extension aims to eliminate dependence on supplies from the Dutch port, particularly in the face of major crises such as border closures, as experienced during the Covid-19 pandemic. Potential border closures could disrupt the supply chain to the French side.

Moreover, the extension of the Galisbay Port will ensure a secure supply chain in case of inactivity at the Philipsburg port, as witnessed during Hurricane Irma. Additionally, it will enhance the port's capability to accommodate military vessels during health emergencies, bolstering overall emergency preparedness.

[1] Socio-economic Analysis of the Galisbay Port Extension Project, SEE UP, 2023

A port extension to cope with natural disasters

The threat of natural disasters, particularly hurricanes, is a constant reality for the port of Galisbay and the island of Saint-Martin. Hurricane Irma, which hit the island in September 2017, is a case in point. The disaster, which destroyed much of the territory and caused 11 deaths, exposed the port's capacity limits: Galisbay remained the island's only operational port infrastructure, while the port of Philipsburg was no longer in service. The port of Galisbay hosted all the logistics required to meet the emergency needs of the population. The French Navy's Bâtiment de Projection et de Commandement (BPC) Tonnerre, which came to provide assistance, was unable to dock due to the shallow depths of the Port of Galisbay, and was forced to use barges to unload emergency equipment, complicating and slowing down the rescue operation.

For two months, traffic doubled on the port's quays, with 8 to 10 boats per day, under complex operating conditions. The extension project now meets the need to ensure public safety and health in the event of a natural disaster.

1.3.3. A regional project for the island's development

The port extension project was included in Saint-Martin's 2014-2020 Development Contract, particularly falling under priority 3, which aims to "Build infrastructure to promote economic development."
The program emphasizes the following:

"For an ultra-peripheral, double-island region like Saint-Martin, located far from Europe and mainland France, accessibility plays a crucial role in its development. It is a pivotal issue that influences the competitiveness and innovation capacity of local companies. It allows their products to access foreign markets (metropolitan, European, and international) at a lower cost and under optimum conditions of safety and quality (port freight). Additionally, it supports the development of the tourism sector, particularly the marina.

To this effect, the French part of the island has some real assets to offer. The quality of Marigot's bay, which is currently being redeveloped, could accommodate medium-sized cruise ships and mega-yachts, the number of which is growing steadily in the Caribbean, as well as improve its capacity for receiving and storing freight. It is essential for the island's economy to compensate for the structural constraints of insularity by improving connectivity with the outside world; the strategy for improving Saint-Martin's accessibility must therefore be island-wide, with the dual aim of providing a complementary offer, while at the same time achieving a degree of emancipation from the Dutch part of the island".

The port extension aligns with the local authority's regional project.

Furthermore, Saint Martin's tourism development plan encompasses various strategic axes, including the implementation of a policy of structuring projects (axis 7). This involves defining a development strategy for high-end cruises. The plan proposes a tourism reconstruction strategy based on the principle of sustainability, considering the lessons learned from the passage of hurricanes IRMA and MARIA. In this sense, the extension of the port and the new development of a multi-purpose quay align fully with these objectives.

2. PROJECT OBJECTIVES AND MAIN FEATURES (INCLUDING ESTIMATED COSTS)

2.1. Project objectives

The project is in line with the dynamic growth of the local economy and aims to improve the port's capacity and efficiency, while rebalancing the economic relationship with the port of Philipsburg in Sint Maarten.

The Galisbay port modernization and extension project is designed to meet four main objectives:

- Rebalancing domestic flows between Sint Maarten (the Dutch part of the island) and Saint Martin (French part); optimizing the economic development of the French part of the island by developing container transshipment activities, allowing a quadrupling of container traffic within 10 years and thus gaining infrastructure competitiveness.
- Ensuring the autonomy of this part of the island.
- Adapting the port to the evolution of maritime traffic (goods traffic and hosting luxury cruise ships for tourism).
- Securing access to the port (health emergency or related to the severe weather conditions to which the sland is exposed).

2.2. Project description

2.2.1 A solution to the saturation of the port's maritime interfaces

The port of Galisbay is facing a shortage of land and quay length, with a high rate of utilization of maritime interfaces that are currently approaching saturation. The main quay is the only one capable of accommodating large vessels calling at the port of Galisbay. Therefore, the high occupancy of the main quay has a dual negative impact on both current and potential traffic:

- High waiting times for today's traffic, regularly involving night-time operations and therefore additional costs for shipowners;
- Inability to accommodate new weekly services (inflexible stopover window).

As far as land is concerned, the limited space available in relation to the volume of activity implies a number of constraints.

On operations :

- Conflicts of use between ship/quay handling and storage of goods on platforms. Container loading/unloading areas are close to the quays, which can interfere with handling operations;
- Difficulties in traffic circulation on the platforms, leading to higher risks for the safety of goods and people.
- Congestion at the port entrance, due to the cramped conditions of the entry control area and the waiting area.

On business development:

- A lack of warehouse space, with several port users expressing unmet needs for covered storage space;
- Insufficient space dedicated to the storage of hazardous goods.

All these limitations, coupled with the evolving competitive context, make any development of traffic appear impossible without an extension. Moreover, these limiting factors contribute to the deficit in the attractiveness of container lines at the Port of Galisbay, as a portion of the traffic intended for the French part of the island is handled by the ports of Philipsburg, which have the capacity to accommodate larger stopovers.

2.2.2. Technical components of the project

To enable the port to continue developing its activities, the extension project includes :

- Dredging a channel (9 meters) to allow access for larger tonnage vessels (draught 8.1 meters, i.e. 2000 TEU container ships or 200-meter liners).
- Extending the dike by 80 linear meters to protect the water level, and lengthen the existing quay by 75 linear meters to create a 175-meter-long multi-purpose quay.
- Creating additional storage areas (10 hectares) using materials extracted from the dredging of the channel
- Building a new 200 linear meter long quay
- Establishing a ro-ro terminal of 120 linear meters

Fig.1. Description of the functional areas of the port of Galisbay (source: SEE'UP, Port Authority of St-Martin)

Fig.2. Galisbay port extension plan (source SEE'UP, Port authority of St- Martin)

The resulting platform will include a storage area for containers and other equipment unloaded from merchant ships, as well as the technical buildings required to operate the port. The port will be connected to the road network via the existing road linking the port to the roundabout.

2.2.3. Better distribution of the domestic market and expected growth in maritime traffic

The extension project will provide a terminal with 2 interacting roro (horizontal handling) and lolo (vertical handling) berths, meaning that calls can be made simultaneously at both roro and lolo berths. Strong growth of 10% is expected in domestic traffic over the first 5 years, followed by a slight increase of 2% a year to rebalance traffic between Galisbay and Philisburg.[2]

The port's expansion should eventually capture 50% of the island's domestic market by 2032. This increase in market share for domestic container traffic is made possible by the port's capacity to accommodate larger, better-filled ships, and by improvements in their handling.3

How can the island absorb this new traffic?

An increase in market share for the Port of Galisbay is not necessarily synonymous with an increase in traffic. The port's extension should enable two types of traffic to increase:

- Existing maritime traffic at Philipsburg, with the extension reallocating traffic flows fromPhilipsburg to Galibsay.
- Transshipment traffic, i.e. the transfer of goods from one vessel to another, and therefore only transits through the port.

As such, these two types of traffic have no impact on the island's infrastructure capacities. Only the port infrastructure needs to be adapted accordingly, particularly for transshipment.

[2] Strategic Port Development Plan, SEE UP, 2021

[3] Ibid.

2.2.4. Project governance

During its development, the project involved numerous stakeholders. Since 2020, an expanded steering committee has been formed to oversee various preliminary studies. It comprises elected officials from the Collectivity, state services (DEAL, ARS, Prefecture), as well as IFREMER, CEREMA, the marine nature reserve, and environmental NGOs like the Mégaptera association.

Given the limited financial capacity of the port, it was decided to seek a private investor and operator (concessionaire) who would operate under a terminal agreement provided for by the transport code. In the envisaged structure, the concessionaire will carry out all the works, including some on behalf of the port facility, as part of its obligations as a port authority (port access, structure protection) and for its own needs (extension of the main quay to accommodate medium-based cruises). In return for the created facilities, the concessionaire will receive financial compensation from the port.

This involves a leasehold agreement that, after an open, transparent, and non-discriminatory competitive procedure, allows selecting a provider who carries out infrastructure works and manages them subsequently.

The advantages of such a process are manifold:

- Making up for shortfalls in public funding by calling on private funds;
- Involving a major maritime operator in the port's development, to ensure the proper operation and development of port activities.

The contract is based on the existing terminal agreement for major maritime ports. The concessionaire benefits from the right to operate the extension.

Following a competitive bidding process, the port authority would entrust a concessionaire with the task of building the port infrastructure and operating the extension, on the basis of a program drawn up after the consultation phase.

In the event of an unsuccessful tender, the specifications will have to be reviewed in order to find a candidate. The port itself could be the future operator.

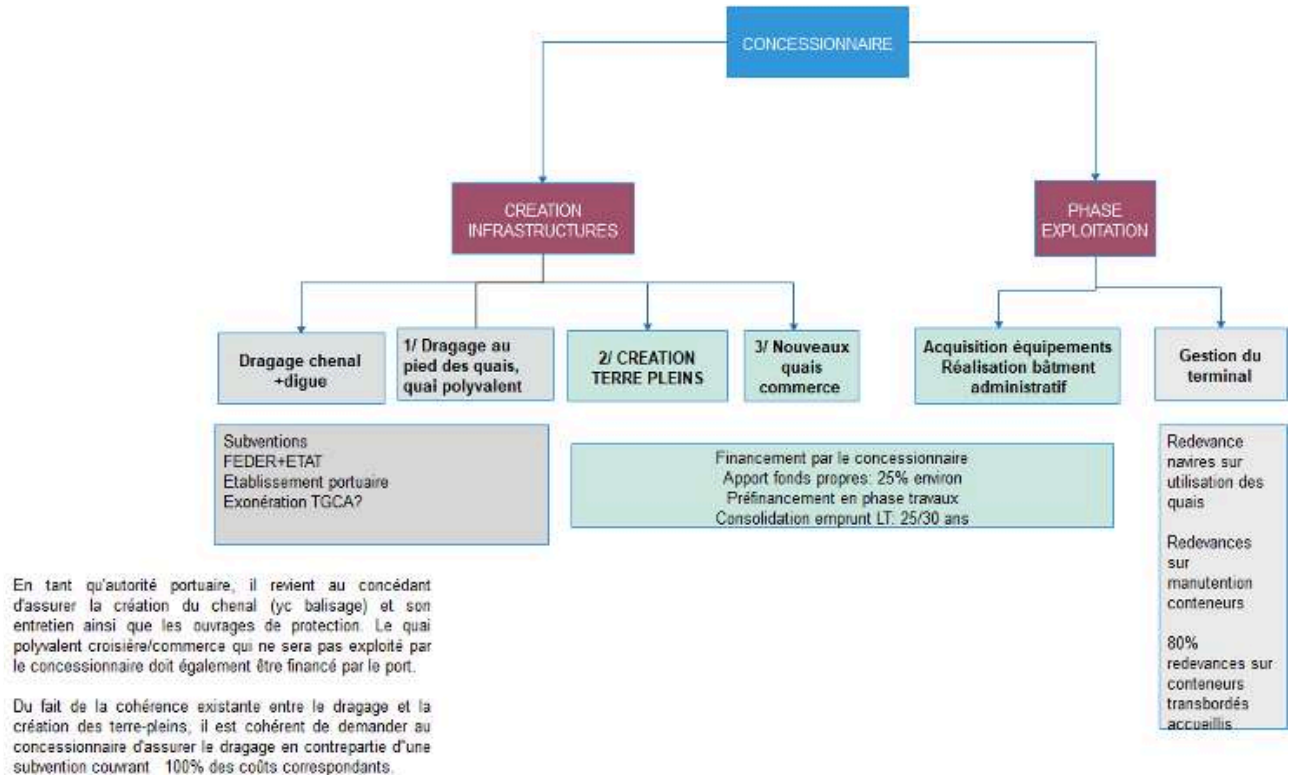


Fig.3. Project implementation diagram (source: Ricochin Consultant)

2.2.5 Project cost and financing

The total investment is estimated at 132 million euros, and breaks down into two parts:

- **Infrastructure** : €123m
  - €64m of infrastructure, financed by the Port Authority and public funds: channel dredging, breakwater extension, multi-purpose cruise/trade quay;
  - €59m of infrastructure for the extension, financed by the future operator: container quay, RoRo quay, extension of the quay.
- **Superstructures** (administrative building and major equipment), financed by the future operator: €9m (+ €9m for tooling renewal over the next 30 years)

Details of investments in tools/buildings : Item	Budget (€M)
Extension admin and technical building	1
Park tools (safety, power units, etc.)	0.2
Terminal Operating System	0.150
Quay equipment: mobile crane	5.6
Park equipment: reach stacker, harbor tractors + trailers	2.1
Sub-total equipment and buildings	**9 €M**

Details of infrastructure expenditure: Item	Budget (€M)
Channel dredging	21.7
Dam construction	23.3
Multi-purpose cruise/trade quay	18.9
Subtotal Port Authority	**64 €M**
Container quay	13.4
RoRo quay	4.7
10-hectare extension platform (creation)	28.7
10-hectare extension platform (phase 1)	12.7
10-hectare extension platform (phase 2)	(pending)
Sub-total future operator	

This amount includes avoidance, reduction, and compensation (ERC) measures associated with the project during the construction phase, totaling €9,204,000. These measures will be financed by the concessionaire for those related to the construction of structures and by the port authority for compensation measures (creation of mooring areas organized for yachting).

During the operational phase, marine environment monitoring operations will be organized for €1,865,000, funded by the port authority through the fees paid by the concessionaire.

The financing structure is not yet established, but the conditions for its realization are closely linked to its subsidy, estimated at €39 million out of the €64 million that the Port Authority is responsible for. The presented costs are in current euros (considering inflation).

2.3 Geographical scope likely to be affected by the project and timetable

The project is located within the French territorial collectivity of Saint Martin. The impacts and compensatory measures of the project are within the territory of this same collectivity and the territorial waters associated with it. Therefore, the scope of the consultation will be the French territorial collectivity of Saint Martin.

	2023	2024	2025	2026	2027	2028	2029
Public consultation							
Submission of environmental authorization file		x					
Public inquiry			x				
File instruction							
Preparing the concession procedure							
Concession procedure							
Concessionaire selection				x			
Work 2026 - 2028							
Launching of operations							x

Fig.4. Project schedule (source: SEE'UP, January 2024 version)

3. OVERVIEW OF THE PROJECT'S POTENTIAL IMPACT ON THE

3.1. Impact studies and supporting studies to define impact

As part of the port extension project, a number of environmental assessments have been carried out over the past three years by consulting firms, in order to evaluate the environmental impact of the project and propose avoidance, reduction, compensation and support measures for the impacts identified.

An impact study is currently being drawn up to summarize all the work carried out by the consultants.
The studies carried out at this stage and available for consultation on the consultation site are :

- Mapping the meadow and its state of health throughout the Bay
- Development of a general current model
- Numerical hydrodynamic modeling to select a future dredged material disposal site approximately 20 km west of the island.
- A study of maritime traffic around the island and in Grand'Baie to understand the flows and anchoring actions of the various vessels.
- A study of boating in the Grand Baie
- Comparing solutions for transplanting and restoring meadows
- A "deep-sea" geophysical survey of the immersion site, with video recordings
- Video monitoring of deep-sea fauna in the dredge disposal area
- A study of oceanographic conditions (wind, swell, current) at the future offshore dredged material disposal site
- An interpretation study of satellite images to define water turbidity climates around the island and in Grand Baie.
- Sandy Ground and Galisbay beach nourishment project (Phases 1, 2 and 3)
- A study of channel stability and maintenance dredging requirements
- A study to measure underwater noise over 2 1-month periods, and simulations of noise propagation during construction and operation of the project.
- A study of the acoustic impact of the work
- A pre-construction airborne noise measurement study (phase 1)
- Simulations of airborne noise propagation during construction (phase 2)
- Inventory of corals on the harbor dikes
- Investigations on the Grand Baie seagrass beds
- An analysis of satellite images of the turbid plume at the mouth of the Marigot marsh.
- An assessment of the project's greenhouse gas emissions (construction and operation phases)

All inventories and impact assessments were carried out in complete transparency by a Steering Committee comprising the local authority and government departments (Departments of Environment, Planning and Housing (DEAL), Regional Health Agency (ARS), Prefecture), but also organizations such as the French Research Institute for Exploitation of the Sea (IFREMER), the Center for Studies and Expertise on Risks, the Environment, Mobility and Development (CEREMA), the Saint Martin Nature Reserve and environmental associations such as Mégaptera.

It is also planned to set up an information and monitoring committee (CLIS) and a scientific advisory committee (CCS) during the project implementation phase, to support and monitor the proper application of all the protection measures to be taken.

What is an impact study?

An environmental impact assessment is a legal document governed by the French Environment Code, which is a prerequisite for any project likely to have an impact on the environment. This document includes an assessment of the environmental consequences of the project, and is intended as an aid to design, decision-making and public information. It includes in particular :

- A description of the development project
- A description of the initial state of the impacted area
- An analysis of the project's impact on the environment
- A list of measures envisaged to avoid, reduce, or compensate for these impacts (ERC sequence)

The project's impact study is still being drafted and has not yet been finalized. It will be completed after public consultation and submitted to the Prefecture. The impact study is part of the application for a single environmental authorization. It will be examined by the DEAL, which will call on other government departments and agencies (ARS, OFB, Ifremer, etc.). During appraisal, which will take around a year, a public inquiry will be held, during which the public will be invited to comment on the project and its effects on the environment. At the end of the investigation, the prefect will decide whether or not to authorize the project by means of a prefectoral decree. If it is authorized, the ERC measures to be implemented during the construction work and subsequently during project operation will be included in the prefectoral decree.

3.2. Main issues and impacts identified

Studies carried out to date have highlighted broad categories of impact, which are summarized here.

3.2.1. Impact on biodiversity

The most significant impacts on biodiversity identified at this stage by the studies concern seagrass, marine mammals, and corals.

Impact of the project on seagrass beds

Current mapping of marine habitats reveals that the seagrass beds located in the center of the bay and on the littoral zones are in average condition. The degradation of this habitat is partly attributable to the anchoring of pleasure craft and commercial vessels in Grand'Baie.

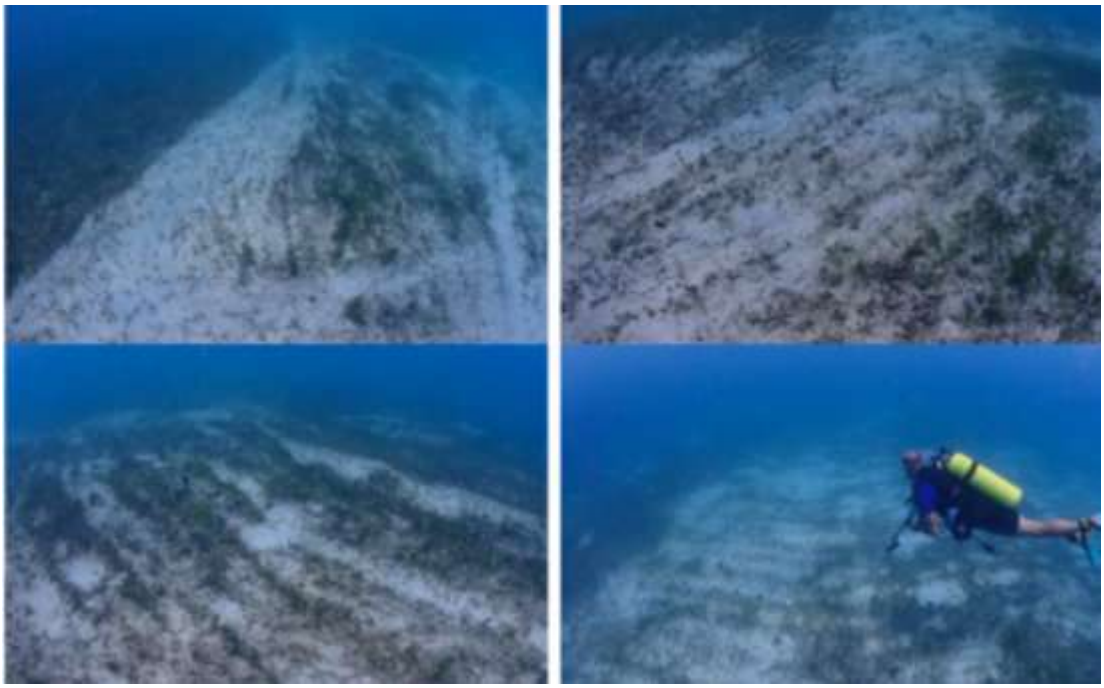


Fig.5. Impact of moorings on the seagrass beds in Grand'Baie (source: Gaia terre-bleue, Impact mer, DHI and Bird&Bird)

The additional destruction of part of these seagrass beds is an identified impact of the project, due to the dredging of the seabed to deepen the channel in order to accommodate larger ships in the port. This destruction concerns 24 hectares of the 150 hectares currently occupied by seagrass beds in Grand'Baie.

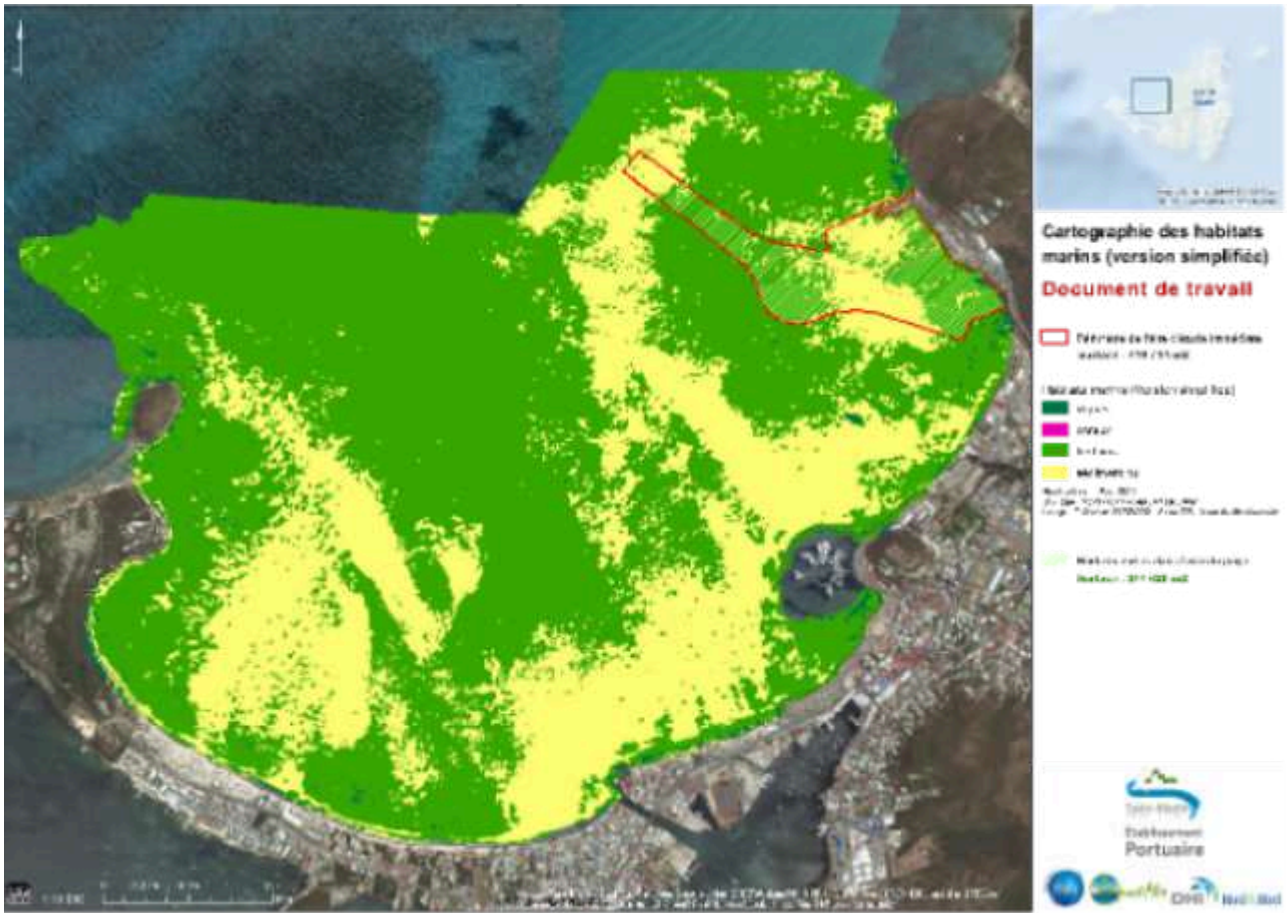


Fig.6. Mapping marine habitats (source: Gaia terre-bleue, Impact mer, DHI and Bird&Bird)

The size of the project was initially reduced to avoid too massive a destruction of the meadow. Initially, the project was designed to accommodate larger commercial vessels with a maximum draught of 11 meters, requiring dredging of the channel bottom to a depth of 12 meters. This first version led to the destruction of 36 hectares of seagrass beds. A dredging depth of 9 rather than 12 meters was therefore chosen.

To compensate for the destruction of 24 hectares of seagrass beds, the project calls for the implementation of a management plan for all anchorages in Grand'Baie. The aim of this management plan is to prohibit mooring in seagrass habitat zones and to organize moorings in such a way as to encourage seagrass regeneration throughout Grand'Baie. This is achieved through the implementation of **ZMEL (Mooring and Light Equipment Zones.)** for pleasure craft and a dozen mooring buoys for megayachts, commercial vessels and

liners. ZMELs and mooring buoys are limited areas in which vessels can anchor to a fixed mooring (buoy, box), without the need to drop an anchor, which rakes and damages the seagrass beds. Two other delimited zones will also be set up in the bays of Grand Case and Cul de sac, due to the large number of pleasure boaters who stop there.

Inset: The organization of mooring zones is a measure that is implemented in many marine environments to be protected. In Brittany as well as in the Mediterranean, several prefectural orders have been issued to regulate the anchoring and stopping of vessels of 20 meters and more, with the aim of combating the increasingly common phenomenon of "wild anchoring" and with the intention of preserving the environment, particularly seagrass beds.

To further protect the seagrass beds, **an anti-suspended matter curtain** will be installed around the dredging site during the works. The goal is to prevent the dispersion into the bay of a cloud of fine suspended particles generated by the dredging of the seabed.

Role and importance of seagrass beds

Seagrass beds are underwater meadows that thrive in most seas globally and are crucial to the well-being of the marine ecosystem. In addition to serving as a refuge for fish and providing habitat for marine turtles, they capture carbon, making them a vital marine species to preserve in the fight against climate change.

Impact on marine mammals

The project is located in a marine mammal transit area between Anguilla and Saint Martin, particularly frequented by humpback whales and dolphins, both of which are protected species. Construction activities, especially pile driving for dock construction, can generate underwater noise that propagates over significant distances. This noise can disturb or even harm marine mammals, which are highly sensitive to such disturbances.

To minimize the impact on marine mammals, the project includes specific measures. The first measure involves suspending pile driving activities between March and April, the peak period for humpback whales in the Anguilla Channel. During the project's operational phase, maintenance activities will also avoid this period.

Another significant measure during the construction phase is the installation of a large bubble curtain around the **pile-driving** worksites. Bubble curtains help mitigate underwater noise, thus reducing the acoustic impact on marine mammals that may be present in the Anguilla Channel or Grand Baie.

Fig.7. Illustration of the bubble curtain around a pile driving production area (source: Gaia terre- bleue, Impact mer, DHI and Bird&Bird)

Caption: Bubble curtains provide a proven method to reduce the impact of aggressive sounds on marine mammals by confining and decreasing the sound intensity and the speed of propagation of sound waves. When a pressure wave hits an air bubble, it compresses the bubble, then it expands again, resulting in an energy loss. Sound travels faster in water than in air, but it slows down if it encounters air bubbles in its path.

In the operational phase, the increase in maritime traffic from the future facilities could lead to an increase in acoustic noise (disturbance to marine mammals) and also increase the risk of collision with sea turtles. A modeling study of the radiated noise from future maritime traffic is currently underway, and the results will be included in the impact study. The compensatory measures considered in the operational phase are described in the appendices.

What about fishing?

Professional fishing in Saint-Martin is carried out in two sectors, but represents only a very small part of Saint-Martin's activity:

- About ten vessels depart from Cul de Sac (on the opposite side of the island from the project) and fish in traps beyond Tintamarre;
- Another ten or so vessels fish far to the north of Anguilla, around 50 nautical miles (90 km) from Saint-Martin.

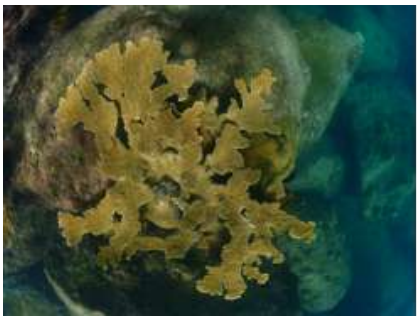
The port extension project will have no direct or indirect impact on fishing activities, either during the construction phase or the operating phase. As a reminder, fishing vessels are Saintoises (8-meter open hull) with 1 or 2 people on board.

Impact on corals

There are two identified coral zones in the Grand Baie: the corals of the Médée bank and the corals on the dike. Only the corals on the dike are likely to be impacted by the project. Therefore, the project plans to recover the corals on the dike, relocate them near the Médée bank, and replant them on a specific substrate. These translocation techniques have been widely tested in all tropical areas of the world (particularly as part of the extension project of the Grand Port Maritime de Guadeloupe) with an effectiveness rate ranging from 60% to 80%, potentially more depending on the implementation.

Fig.8. Illustration of corals in Grand Baie (source: Gaia terre-bleue, Impact mer, DHI and Bird&Bird).

Médée bank



Dyke corals

Inset: The corals provide habitat for numerous marine species but are also sensitive to environmental conditions. Coral reefs are extremely fragile, and global degradation is particularly concerning. In addition to direct human actions such as overfishing, resource overexploitation, landfilling, clearing and excavation, various pollutions, lack of waste treatment, and trade in fish and reef products, there are the effects of climate change and ocean acidification.

3.2.2 Impacts on water quality and on the water intake for the drinking water production plant

A major environmental issue of the project concerns the potential risks that the works may pose to water quality without the implementation of avoidance and reduction measures. Indeed, dredging of the seabed and construction of dikes lead to an increase in water turbidity and an alteration of its quality. The accumulation of suspended matter is an identified risk that could disrupt the operation of the drinking water production plant (by desalination) managed by the Saint-Martin Water and Sanitation Authority, whose intake is located near the port.

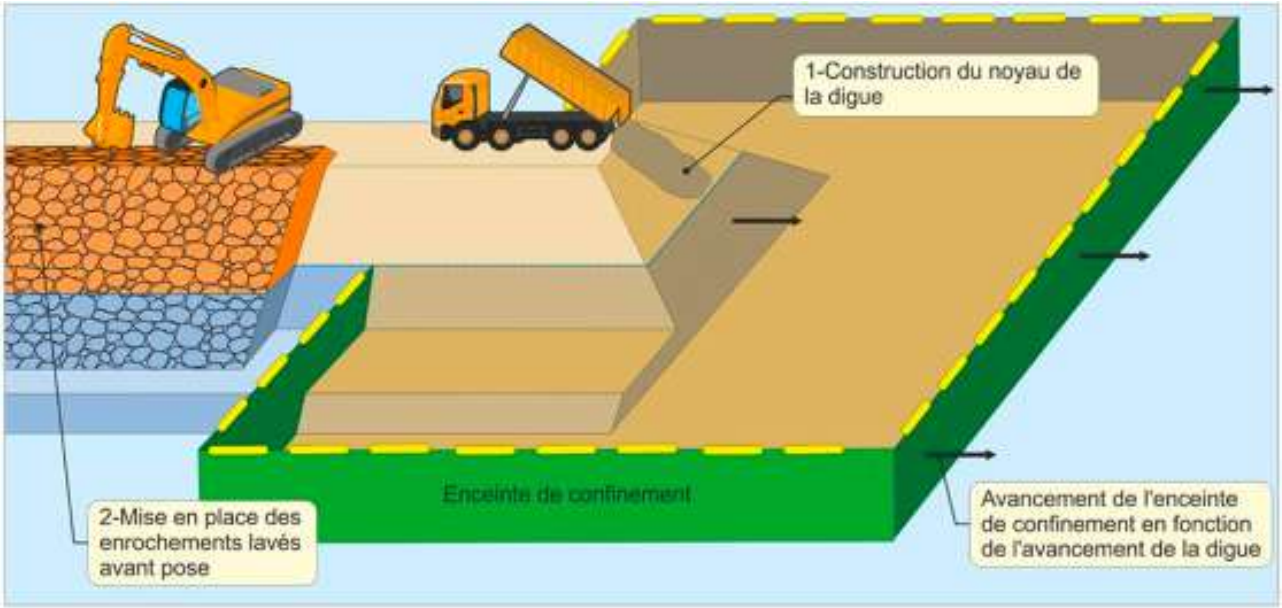
As a result, the project has been adapted to reduce this impact, particularly by favoring the least impactful dredging technique (dredging with a mechanical shovel mounted on a pontoon) for water quality.

The main measure to limit the alteration of water quality aims to install a barrier to filter the suspended matter generated by the works. Fine particles of sand or clay suspended by the works will be confined by the filtering barrier. The project plans to set up this anti-turbidity screen around the dredging workshop, around the dike construction zone, and around the seawater intake of the drinking water plant.

The installation of an anti-turbidity screen significantly reduces the release of fine particles to the outside: the feedback from the use of this type of screen shows that turbidity can be reduced by 80 to 90% outside the screen, and simulations conducted by numerical modeling indicate sufficient protection to preserve the water quality of the drinking water production plant.

Furthermore, as an additional precaution, daily monitoring of water turbidity will be carried out during the works to slow down the rates or stop the construction site if certain thresholds were to be exceeded. Measurements will be carried out using sensors installed on buoys that will allow real-time data transmission to an analysis center.

Fig.9. Illustration of the suspended matter curtain (Source: Gaia terre-bleue, Impact mer, DHI and Bird&Bird)



Caption: The anti-suspended matter curtains will be installed around the dredging workshop, the water intake permanently, and around the under-construction dike. Fine particles of clay or sand are thus confined by the filtering barrier. These barriers prevent the dispersion of fine particles into the natural environment. Each barrier consists of floating tubes and filtering geotextile skirts.

Fig.10. Suspended matter curtain around dredging area (Source: Gaia terre-bleue, Impact mer, DHI and Bird&Bird)

3.2.3 Impacts on climate change

A carbon assessment of the development project was conducted by the Eco-Stratégie firm in 2023, following the Carbon Assessment® methodology developed by the French Environment and Energy Management Agency (ADEME). It assesses the primary CO2 impacts of the extension project during both the construction and operation phases. This carbon assessment does not account for the decarbonization trajectory of the maritime sector currently initiated by the International Maritime Organization (IMO), aiming to make commercial and recreational vessels more environmentally friendly. The assessment was conducted following the Carbon Assessment® methodology developed by ADEME.

What is a carbon footprint?

Carbon footprints allow for the quantification of activities and flows associated with a company, a project, a product, or an individual, converting them into Greenhouse Gas (GHG) emissions to assess their climate impact. The "carbon footprint" methodology takes into account the entirety of GHG emissions, whether direct or indirect, for all physical flows of an organization without which its functioning would not be possible. For the sake of relevance and transparency, carbon accounting uses a publicly accessible online database called Base Empreinte®, administered by the French Environment and Energy Management Agency (ADEME).

The estimated CO2 impact associated with the development project is approximately 30,000 tons (with an uncertainty of 25.2%). It is related to dredging operations, the creation of landfills, and the development of docks. Following the methodology for amortizable assets in the context of port infrastructure, emissions are considered over a 50-year period, resulting in an annual impact of 602.8 tons to be taken into account.

The CO2 impact of the project in terms of emissions should be assessed concerning a baseline scenario corresponding to the most likely situation in the absence of the evaluated project. Since the extension project leads to a significant increase in traffic and, consequently, port activity, it is coherent to observe a substantial rise in annual carbon emissions from the activity (increase in the number of stops, handling hours, consumption related to connecting refrigerated maritime containers in the yard, etc.). The net annual post-project emissions are estimated at 15,091 tons of CO2 compared to 5,696 tons of CO2 pre-project, representing an increase of 164%. However, the project partly involves capturing existing maritime traffic, where carbon emissions are ultimately displaced.

On the other hand, due to the optimization of the operation of more efficient and economical equipment and better utilization of infrastructure, the CO2 emission balance per ton of handled cargo is improved by approximately 33%. This allows the port of Galisbay to handle a significantly higher volume of goods while substantially improving its energy efficiency.

3.2.4 Impact on coastline evolution

Coastal erosion in Saint-Martin is a significant concern due to cyclones that impact the island, notably Hurricane Irma in 2017, which significantly contributed to beach erosion and the submersion of urbanized areas. It is an identified risk with the project, namely the potential for additional coastal erosion due to the deepening of the channel and the extension of the dike. The construction activities can alter wave dynamics and current patterns, both of which are factors contributing to coastal erosion. Modeling studies have shown no impact of the construction activities on these two factors.

Furthermore, the measures planned to preserve seagrasses in Marigot Bay will contribute to coastal protection since these marine species play a role in reducing coastal erosion.

Valoriser les sables du dragage pour recharger la plage de Sandy Ground, une option étudiée

In view of the large volumes of sand available from the dredging work, a solution has been studied to pump some of the sand to be dredged onto Sandy Ground beach in order to recharge it. This beach is highly vulnerable to marine erosion.

Modelling studies have shown that the sand to be dredged has incompatible properties for recharging Sandy Ground beach. The sand would be too "muddy" and would be rapidly eroded by waves and currents, leading to the rapid disappearance of this artificial beach. The benefits of beach nourishment would then be short-lived. This solution was therefore ruled out.

However, the material extracted from the dredging will be used to extend the quay. Surplus material will be dumped in French territorial waters to the west of the island of Saint-Martin, in an area with no significant environmental issues, at depths of around 500 meters.

3.2.5 Assessment of Avoiding, Reducing, Compensating measures (ERC in French)

As the impact study currently stands, 27 "Avoiding, Reducing, Compensating" (ERC) measures have been identified at a total cost of 11 million euros, or 7% of the total cost of the project. Follow-up measures are also planned to ensure that all environmental impact mitigation measures are properly implemented.

All these measures are detailed in a specific note in the appendices.

4. OVERVIEW OF THE PROJECT'S ECONOMIC AND SOCIAL IMPACT

4.1 Impact studies and supporting studies to define impact

The port's modernization and extension project are expected to have a number of economic and social impacts. To qualify and quantify these effects, the Saint Martin Port Authority has drawn on the following studies:

- A socio-economic analysis of the Galisbay port extension project
- A 10-year traffic forecast for the extension and a 50-year outlook
- The strategic development plan for the commercial port of Galisbay

4.2 Main issues and impacts identified

4.2.1 Reminder of the project's economic and social stakes

The modernization and extension of the Port of Galisbay responds to several economic and sovereign challenges:

- Sovereignty issues: the port extension must ensure that the French side is not dependent on supplies from the Dutch port, particularly in the event of a major crisis (e.g. a border closure);
- Public safety and health issues: the extension of the port of Galisbay must guarantee security of supply in the event of possible inactivity of the port of Philipsburg (as was the case with Hurricane Irma) and provide the port with conditions to accommodate military vessels in the event of a health emergency;
- Attractiveness/competitive stakes: the extension of the Port of Galisbay aims to position it as the benchmark port infrastructure in the Lesser Antilles, by increasing its transshipment activity.
- Improving the quality of port services: the port's modernization and extension are designed to increase cargo handling capacity in order to avoid infrastructure saturation and the associated waiting times, which affect the cost of port passage;
- Fiscal issues: increasing the port's capacity should make it possible to repatriate flows destined for the French part that currently pass through the port of Philipsburg, thus avoiding the payment of road tax on goods.
- Tourism: the extension and modernization of the port are designed to increase capacity for small, high-end liners, thanks to a dedicated quay.

4.2.2 Expected impact on employment

The employment effects are anticipated at three levels: the construction phase, the operational phase, and the indirect jobs related to port activity. The initial phase is expected to result in the creation of a maximum of 80 jobs per year during the planned 3-year construction period.

However, it should be noted that the construction works will be subject to competition under the public procurement code. Nonetheless, local civil engineering companies and the quarry are ideally positioned to participate in the works and the supply of construction materials.

The operational phase aims to create 30 to 40 direct jobs in the long term. Finally, 3 to 6 indirect jobs per batch of 1,000 additional handled containers will be generated (transport organization, container loading/unloading, transportation, etc.) in the port environment. Thus, the creation of indirect jobs in the region due to the increased port activity is estimated at around 30 jobs by 2030.

4.2.3 Expected impact on tourism

With an improved capacity, the port will be able to handle a more significant maritime traffic, including hosting small luxury cruise ships at the multi-purpose quay. One of the project's objectives is to benefit from the strengthening of port infrastructure (especially the extension of the dike and the deepening of the channel) to accommodate cruise ships at the dock at a lower cost. Until now, these ships anchored in the bay with unsatisfactory conditions for disembarking cruise passengers (difficulty in anchoring the cruise ship in case of swell and too much time spent disembarking passengers on land).

The expected ships, with a capacity of about 400 passengers, offer high-end services and require suitable and reliable facilities. Therefore, the cruise ships will have a specially designed and secure dock (away from the goods handling activities) for transferring cruise passengers to the tourist sites of Saint- Martin via bus and taxi transfers or through maritime shuttles connecting to the Marigot waterfront quay. The new infrastructure will position the port as a cruise departure point (homeport). This activity implies that cruise passengers can spend a few nights on the island before or after their cruise, resulting in a strengthening of the island's attractiveness as a tourist destination.

Initially, it is estimated that with the port extension, about thirty cruise ship stops can be accommodated per year. Besides cruise ship stops, this multi-purpose quay will be optimized to accommodate commercial vessels at the dock.

4.2.4 Expected impact on public safety and health

The extension and modernization of the port will make it possible to respond to crises that the island may experience, such as Hurricane Irma in 2017. Indeed, the port's extension will make it possible to accommodate large military vessels with deep drafts, and thus to receive human and material aid in the event of an emergency. The port will thus guarantee continuity of supply to the island, even in times of crisis.

4.2.5 Expected impact on service quality and port passage costs

The port of Galisbay has reached a high level of utilization of maritime interfaces, which the extension should help to alleviate. The modernization and extension of the port will reduce waiting times, which regularly result in additional costs for shipowners operating at night. Improved handling conditions and better storage management thanks to more available space will enhance port service quality. New weekly services may also be introduced.

4.2.6 Expected impact on port revenues and the Collectivity

The concessionaire will pay a fee to the Saint Martin port authority for occupying and operating the extension. The Collectivity will collect the general tax on sales generated by the investment and the operating phase, the property tax (assumed at €17,920) and the duty based on the cost price of the equipment.

4.2.7 Expected impact on local operators

The additional traffic handled at the port will generate new flows and activities in the hinterland (transport and logistics activities around the container flows handled at Galisbay). An economic multiplier effect is also expected for local stakeholders who will see an increase in demand for goods and services due to the growth in traffic. The increase in port traffic and the development of new maritime connections can also lead to a reduction in logistics costs for these businesses.

In addition, the extension will reduce the volume of goods handled by Philispburg and destined for the French part of the island by land. This, in turn, will reduce the tax on Dutch roads for local operators. This tax, dedicated to road maintenance on the Dutch side of the island, generates around 2 million euros a year in French expenditure.

4.2.8 Expected impact on port traffic

In addition to boosting container transshipment activity, the extension will enable the port of Galisbay to capture 50% of Saint-Martin's domestic container market by 2032, based on expected growth of +2% per year in this domestic market.[4]

More specifically, the extension must enable :

- Capture 50% of the domestic container market by 2032;
- Transshipment traffic will be captured by one line as early as 2028 (100 transshipment containers per week, i.e. around 15,000 TEU), by a second line in 2032, and by a third line in 2037.

Focus: What impact on the city-port link?

One of the direct impacts of the Galisbay port extension will be on road traffic on the island. With increased port capacity and a predicted rise in commercial activity, the number of vehicles on the roads - particularly trucks and other goods vehicles - will increase.

The road network on the island of Saint-Martin consists mainly of the National Road RN7, to which the only road leading to the port of Galisbay connects. The structure of the network is not conducive to the smooth flow of what is otherwise an extremely dense traffic flow.

During the construction phase, traffic modalizations anticipate a foreseeable +33% increase in the number of trucks on the National Road RN7, in connection with the transport of materials from the Saint Martin quarry.

During the operational phase, traffic modelling predicts a +0.2% increase in vehicle traffic and a +15% increase in truck traffic on the National road RN7.

On the other hand, the port's increased capacity means a rebalancing of flows on the island between the ports of Philipsburg and Galisbay. This means that goods destined for the French part of the island, previously handled via the port of Philipsburg, can now be handled directly via Galisbay. This optimization of transport routes will reduce the distances covered.

In light of increasing traffic and road congestion between Hope-Estate and Marigot, the Saint-Martin road master plan (ASFEGE, 2015) recommends the creation of a new lane doubling the link between Marigot and Hope-Estate to address the many recurring traffic problems on the national road RN7. The Collectivity of Saint-Martin has therefore just launched a tender procedure for the project. The route of the new road has not yet been determined, and the construction schedule could extend from 2027 to 2031 or later.

Fig.11. RN7 bypass project (source: Collectivity of Saint Martin)

Details of the impact of the work on the population are given in a specific note in the appendices.

5. ALTERNATIVE SOLUTIONS CONSIDERED

5.1 Current context

The port of Galisbay is currently facing saturation issues with its infrastructure due to an increase in maritime traffic, and there's a risk of supply chain disruption in case of climatic events, given its limited capacity. The port struggles with a lack of attractiveness, resulting in a portion of the traffic intended for the French part of the island being diverted to the Philipsburg port, which can accommodate larger vessels. Galisbay port currently functions as a hub for cargo deconsolidation and redistribution. In contrast, Philipsburg port boasts a better capacity, primarily due to its announced draft of 9.5 meters compared to Galisbay's 5.5 meters, along with a more extensive quay length. These factors have led to the consideration of various scenarios in port designs.

5.2 Other solutions under consideration

The port authority, aiming for a comprehensive evaluation of various solutions, introduces three scenarios with their respective alternatives for public discussion:

- A scenario that calls into question the strategic importance of the port of Galisbay in the Caribbean region.
- A scenario that calls into question the project's geographical location
- A scenario that calls into question the relocation of the cruise business

5.2.1 Scénario 1 : Strategic sizing

While environmental impacts are obviously an essential criterion of choice, each of these scenarios also represents a development strategy for the French Collectivity of Saint Martin.

Zero hypothesis scenario :

The zero hypothesis, in the context of an infrastructure project, refers to the scenario in which no action is taken, i.e. the Galisbay port extension project is not carried out.

Without this extension, Saint-Martin would continue to be increasingly dependent on the port infrastructures of the Dutch part of the island. This growing dependence would limit the economic autonomy of the French side, with direct consequences on import costs (additional costs for importers due to the "road tax") applied to all incoming flows through the Dutch port, and consequently on the cost of living for its inhabitants. The port would remain an unbundling and redistribution port.

In addition, the limitations currently experienced by the port would have an impact on the port's operations and future development:

- Threats to the sustainability of certain on-site activities, such as the current transshipment activity for the Dominican Republic, which could result in the departure of the associated domestic flows;
- Potential decline in port traffic;
- Direct and indirect impacts in terms of jobs related to logistics activities.

Limited onshore storage capacity could also block supplies to the French part of the port, to cope with crises or peaks in traffic.

Although the zero hypothesis does not entail any immediate costs, its long-term consequences for the economic development and sovereignty of Saint-Martin are significant.

A dimensional extension for the port based on the Philipsburg model:

The project to extend, enlarge and deepen the port's entrances began in 2012 with initial sketches, before being reviewed in 2017 with the ambition of making Galisbay a deeper-draught port than Philipsburg to position itself as a direct competitor.

Although scenario 2 is now favored by the port authorities, the hypothesis of a 12-meter draught has been studied for many years and is therefore one of the alternatives submitted to the public during this preliminary consultation.

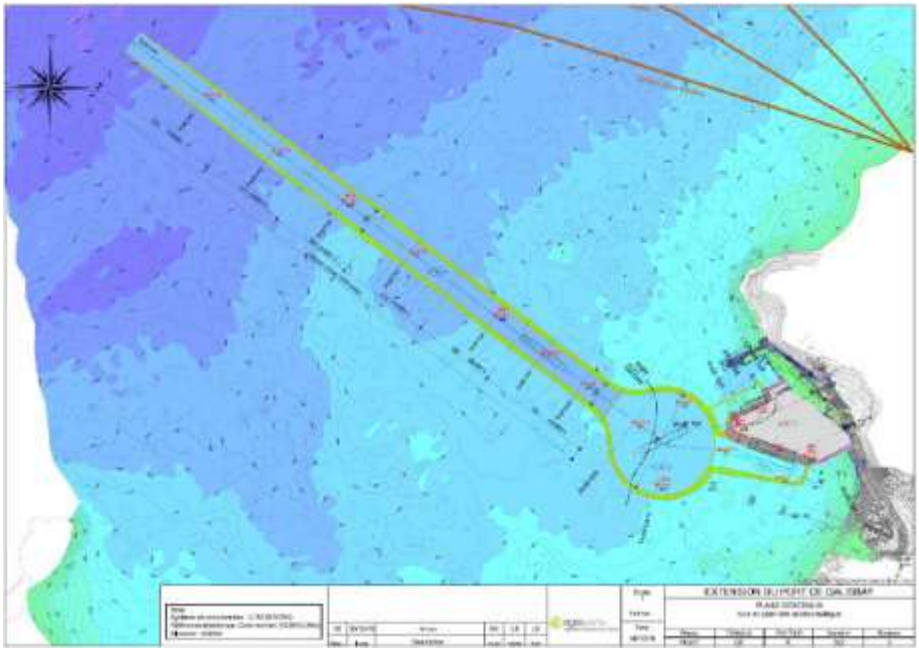
This scenario is based in particular on deepening the channel to 12 meters, which would enable us to accommodate container ships of up to 2,500 TEU. This capacity would make the French part of the island of Saint Martin an essential regional port hub for services to the Caribbean, with significant effects in terms of jobs and economic development for the island.

The project would then comprise the following structures:

- Deepening of the access channel by dredging to a depth of 12 meters to allow access by larger vessels;
- Developing additional storage areas covering 6 ha. This area is divided into two zones: one of 23,000 m² and the other of 37,000 m³. The storage area is served by two access roads;
- Building a new 200-meter-long quay, notably for container transshipment;
- Building two quays designed to accommodate two ships simultaneously: a RoRo quay for ro-ro ships (120 meters x 25 meters) and a quay for container ships (200 meters).

However, this option would have a significant environmental impact, due to its wider scope of intervention. The volume of material extracted by dredging to deepen the channel to 12 meters represented some 3,400,000 m3, and the cost of the dredging operation was estimated at 38.5 million. These parameters prompted the public port establishment to seek a more suitable solution in terms of cost and environmental impact, by opting for scenario 2, which was no longer in line with the Collectivity's strategic choices in favor of “medium-cruise” tourism.

Fig.12. Plan view of the platform, access channel and turning circle for scenario 3 (source: Egis)



5.2.2. Geographical location

More broadly, the extension project raises the question of the geographical suitability of the facilities. Several criteria must be taken into account when building a port facility to determine its ideal geographical location. An analysis was carried out to assess the appropriateness of the project in relation to the potential creation of other ports on Saint Martin. This analysis showed that the creation of other ports (four other locations were considered) would entail additional constraints (infrastructure, natural hazards, cost, environmental impact, etc.) compared with the extension of the port of Galisbay.

Multi-criteria analysis of the project's geographical suitability (source: Cirrus environnement)

	Project selected Extension of the port of Galisbay and creation of a multi-purpose commercial-cruise quay	Creation of a port in Grand-Case	Creation of a port in Cul de Sac	Creation of a port in Oyster Pound	Creation of a port in pointe du Bleuf
Road access	Existing road access	Very complex access	Very complex access	Very complex access	Very complex access
Deepening the channel	Channel deepened by 2 meters	Channel deepened by 6 meters	Channel deepened by 8 meters	No need t o deepen the channel	Deepening the channel by 7 meters at the harbor level and 2 meters on the channel
Cost of work	€ Existing dike and platform	€€€ Non-existing dike and platform	€€€ Non-existing dike and platform	€€ Non-existing dike and platform	€€€ Non-existing dike and platform
Biodiversity and water uses	Near water plant drinking water, near seagrass beds, outside the nature reserve perimeter	Near seagrass beds, swimming area, outside nature reserve perimeter	Near coral reefs, nature reserve perimeter, swimming area	Near coral reefs, close to nature reserve	Proximity to coral and seagrass beds
Economic and social impact	Industrial zone, not tourist activity nearby, presence o f activities with the port	Densely populated area and tourist activities, close to Hope Estate and airport	Dense residential, tourist and far from any economic hub	Dense residential, tourist and far from any economic hub	Uncultivated area away From any economic hub. Potential for developing a tourist hub
Natural hazards	Well-preserved area	Zone highly exposed to cyclonic risk	Zone highly exposed to cyclonic risk	Zone highly exposed to cyclonic risk	Area moderately exposed to cyclonic risk

Fig.13. Location of alternative projects (source: Cirrus Environnement)

5.2.3. Relocation of cruise activity

In 2015, a development project for Marigot Bay was launched by the territorial council to increase both maritime capacity (creation of new berths for medium and possibly large cruises) and land capacity (creation of a hotel, business center, etc.).

The project was abandoned due, on the one hand, to the financial imbalance of the operation linked to thehigh cost of dredging and the construction of a protective dyke and, on the other hand, to the environmental impacts in addition to those of the commercial port extension project, notably on the seagrass beds.

Today, the port extension includes a multi-purpose quay to accommodate both cruise and commercial traffic. This multi-purpose quay is estimated to cost 19 million euros.

An alternative scenario envisages not building a multi-purpose quay, but retaining only a cargo dock at Galisbay and locating a cruise port in Marigot Bay. This scenario would entail deepening the channel by 4 meters in Marigot Bay, as well as creating a protective dike and a quay in Marigot. The financing of such work would

appear to be far more substantial than financing the multi-purpose quay using existing infrastructure at Galisbay.

Given the projected increase in cruise traffic (30 calls per year) and the cost of the works, the multi-purpose quay solution appears to be the most appropriate.

6. SUMMARY OF THE PROJECT PROPOSAL ENVISAGED BY THE CONTRACTING AUTHORITY

The expansion project of the Galisbay port is a project of major importance addressing various economic, social, and sovereignty challenges. Primarily, it aims to rebalance domestic flows between Sint Maarten and Saint Martin, promoting the economic development of the French part of the island. The port should also secure access to larger ships that can guarantee the supply in case of natural disasters. Thus, the project enhances the strategic autonomy of the French part and reduces dependence on the Dutch part.

The project has several environmental impacts, especially on seagrasses, marine mammals, and corals during the construction phase. In response to these impacts, measures following the "Avoid, Reduce, Compensate" (ERC) sequence are planned to limit and offset them. The total cost of these measures is estimated at 11 million euros, demonstrating the port's commitment to promoting the economic development of the island while preserving its environment to the maximum extent.

Indeed, the current scenario chosen is an intermediate development scenario, significant enough to ensure supply security and economic development for the island but minimal to limit the cost of this extension and its environmental impact. The consultation opens the debate on several alternative scenarios: the sizing of the port, its geographical positioning, and the relocation of cruise activities.

The project could create opportunities in terms of employment, during the construction and operation phases, with the ambition to limit the additional cost paid by the French part on goods coming from the port of Philipsburg due to the "road tax" (road tax paid on Dutch roads). It is a project stemming from a development strategy for the French part of the island for the coming decades.

7. APPENDICES

To better understand some of the project's impacts and the measures planned to avoid, reduce, or compensate for them, three thematic fact sheets have been produced.
They cover :

- Details of "Avoiding, Reducing, Compensating" (ERC) measures
- Details of the project's impact on drinking water supply
- Details of the impact of the work on the population

THEMATIC SHEET 1: ERC MEASURES

Reminder of the objectives and content of an environmental impact assessment (EIA)

An environmental impact assessment, or EIA, is a document governed by the French Environment Code and its article R122-5. In particular, this defines its content, which must be "...proportionate to the environmental sensitivity of the area likely to be affected by the project, to the scale and nature of the planned works, installations, structures or other interventions in the natural environment or landscape and to their foreseeable impact on the environment or human health."

The EIA will comprise several parts, including :

- Explaining the project
- The initial state of the environment in 4 main parts: the physical, biological or biodiversity environment, the landscape, cultural and living environment, and finally the human environment and socio-economic activities.
- Impact assessment
- Avoidance, Reduction and Compensation measures, known as "ERC measures", for the negative effects of the project on the environment
- Follow-up measures

It should be noted that the impacts expressed are, in the first instance, the predicted gross impacts, i.e. **before reduction linked to a measure**, where applicable (avoidance and reduction measures are presented afterwards and applied). Once the avoidance or reduction measure has been applied, **the residual net impact is established.** If this residual net impact remains **significant** (medium or high), then a compensation measure will be applied.

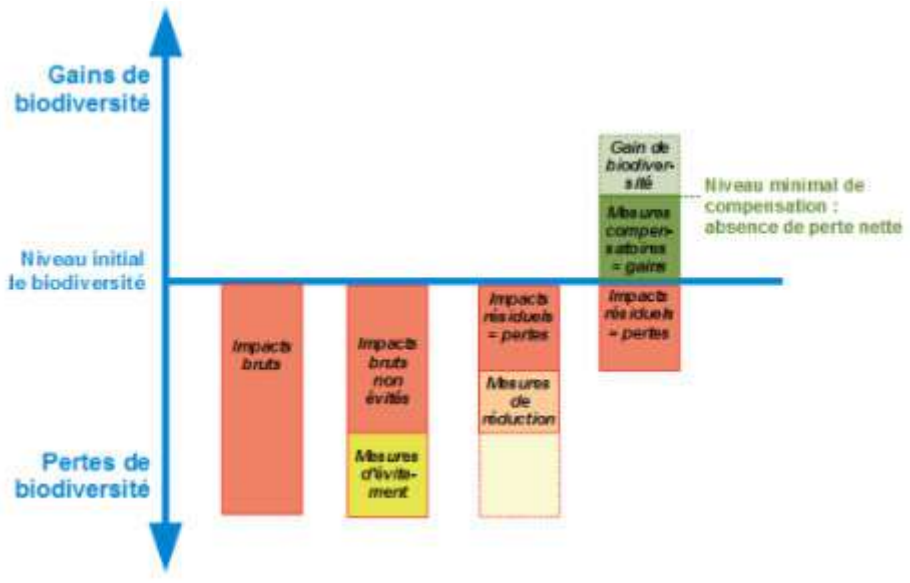


Figure 1 : Impact and ERC measures chart (Source: CGDD 2018, p.38)

A distinction must be made between several types of measures (according to the Avoiding, Reducing and Compensating doctrine - ERC in French):

- **Suppression** measures make it possible to avoid a potential impact of the project right from the design stage.
- **Reduction** measures are designed to reduce the overall impact of the project.
- **Compensation** measures are designed to offset the residual net negative impacts of the project in order to maintain the overall initial value of the environments (reforestation of plots to maintain the quality of the afforestation when clearing is necessary, purchase of plots for natural heritage management, measures to safeguard species or natural environments, etc.).

Compensation makes it possible to avoid a net loss for the environment or compartment concerned, as required by the Biodiversity Act. It therefore eliminates the residual net impact. ERC measures are described in a separate sheet, including monitoring procedures and financial estimates.

The Avoiding, Reducing and Compensating (ERC in French) measures in the Environmental Impact Study

Proposed avoidance measures

According to the French Ministry of Ecological Transition, an avoidance measure is "a measure that modifies a project in order to eliminate an identified negative impact that this project or action would generate".

At the current stage of the EIA, the proposed avoidance measures (ME in French) are as follows:

	Measures	Project phase	Environment concerned	
ME01	Pile-driving operations are prohibited in **March and April** (peak season for humpback whales)	Work	Physical (Noise)	Biological (marine mammals)
ME02	Noisy work (ramming, drilling, and vibratory hammering) will not be carried out at **night.**	Work	Living environment (Airborne noise)	
ME03	Maintenance dredging work will not be carried out in **March or April** of each year	Operation	Physical (Noise)	Biological (marine mammals)
ME04	Reducing the length and depth of channels and trenches	Design		

Table 1: Avoidance measures envisaged at the current stage of the EIA (source Gaïa - Terre bleue)

Planned reduction measures

A reduction measure is a "measure defined after avoidance and aimed at reducing the permanent or temporary negative impacts of a project on the environment, during the construction or operating phase."

The reduction measure can have several effects on the identified impact. It may reduce the duration of the impact, its intensity, its extent, or a combination of several of these elements, using the best available techniques (least impact at a reasonable cost). All impact categories are covered: direct, indirect, permanent, temporary, and cumulative. Mitigation measures for the construction phase are not limited to temporary impacts; permanent impacts may also be affected.

At the current stage of the EIA, the proposed mitigation measures (MR in French) are as follows:

	Measures	Project phase	Environment	
MR01	Installation of an **anti-suspended matter curtain** around the dredging workshop, the drinking water intake and the forward dike construction area to reduce the spread of a turbid cloud beyond the work area and protect the water intake.	Work	Physical (water quality)	
MR02	Installation of a **large bubble curtain** (BBC) around the pile-driving, drilling and vibrofusion workshops and soft-start procedure to reduce noise propagation into the sea	Work	Physical (Noise)	Biological (marine mammals)
MR03	Recovery of **corals from the current dike** (with or without boulders)	Work	Biological (dike corals)	
MR04	Implementation of a **Greenhouse Gas Emissions Reduction Plan (EGES)**	Work	Physical (Air quality)	
MR05	**Continuity of** port operations plan to be drawn up with the construction company and the prime contractor	Work	Socio-economic activities (port)	
MR06	A plan for use of the water will be drawn up and updated. A "Watchdog" vessel will be deployed. An "anti-pollution" plan will be drawn up and equipment made available by the company for deployment in the event of an emergency.	Work	Socio-economic activities (navigation)	
MR07	**The quay lights** will be adapted and a procedure for ships at quay will be defined.	Operation	Physics (light)	
MR08	Implementation of a **management plan for anchorage areas** and area bans	Operation	Biological (soft bottoms, seagrass beds)	
MR09	IMO measure on **radiated noise reduction** merchant ships (Glonoise project)	Operation	Physical (Noise)	Biological (marine mammals)
MR10	A **concerted approach to road traffic management** to be carried out in conjunction with CTSM	Operation	Living environment (road traffic)	

MR11	**Waste management plan** to be updated	Operation	
MR12	Implementation of a **plan to reduce greenhouse gas emissions**	Operation	Living environment (Air quality)
MR13	Updating the PPRN on the perimeter of the new median strip	Operation	Living environment (RN)
MR14	Updating the PPRI on the port perimeter	Operation	Living environment (R1)
MR15	A concerted management system for pleasure boat moorings will have to be established with the CTSM.	Operation	Socioeconomics (yachting, navigation)

Table 2: Reduction measures envisaged at the current stage of the EIA (source Gaïa - Terre bleue)

Proposed compensation measures

Despite the implementation of the above-mentioned Avoidance and Mitigation Measures, there are three impacts that remain significant after implementation of these measures. It is therefore necessary to compensate for them. This is why 2 specific Compensation Measures will be implemented.

Components	Nature	Gross impact	Avoidance measures	Reduction measures	Net impact	Compensation measure
Sandy seabed (project area)	16.5 ha of soft bottom will be destroyed	**Strong**	ME04 : Reduction length and depth the channel and dredged areas		**F**	MC1: Installation of fixed moorings for commercial vessels and yachts (< 100 m), creation of 3 organized mooring zones (Marigot, Grand-Case and Cul de Bag) for and setting up mooring locker (200 m vessel)
meadow (project area)	24.5 ha of meadow will be destroyed	**Strong**	ME04 : Reduction of the length and Depth of the channel and dredged areas		**F**	
Turtles	Destroyed meadow no longer provides ecological service to turtles	**Strong**	ME04 : Reduction of the length and		**F**	MC2: Rehabilitation of Marigot pond (reduction of macro-waste and contaminants)

Table 3: Significant net impact of the project

Accompanying measures planned

Accompanying measures play an important and complementary role to ERC measures. They often make it possible to take greater account of biodiversity in the broadest sense of the term in development projects and, when properly identified, to ensure or contribute to the success of other measures at different levels. Although the proposal of accompanying measures in the application file remains optional, their transposition into a prescription in the authorization act (prefectoral order) commits the contracting authority to their implementation.

The accompanying measures (AM) envisaged, at the current stage of the EIA, are as follows:

N°	Measures	Project phase	Environment concerned
MA01	Establishment of a **Natural Habitat Protection Order** (APHN) for the entire Médée Bank site, including a diving management system (fixed mooring).	Work	Biology (Médée corals)
MA02	Installation of artificial riprap to receive corals recovered within the APHN perimeter.	Work	Biology (Dyke corals)
MA03	Setting up a **Local Information and Monitoring Committee** (CLIS) to monitor ERCA measures	Construction and Operation	Biology
MA04	Setting up a **Scientific Advisory Board** (CCS) for monitoring ERCA measures	Construction and Operation	Biology
MA05	Setting up a monitoring system for the dredge disposal area (camera + benthos)	Construction and Operation	Biology
MA06	Installation of information panels, creation of a 200-metre-long educational deck on the Pond of Galisbay.	Operation	Living environment

Table 4: Accompanying measures envisaged at the current stage of the EIA (source Gaïa - Terre bleue)

Follow-up measures to ERCA measures envisaged

For each ERCA measure, specific monitoring will be implemented to measure the effectiveness of the proposed measure over time, and to enable an annual assessment to be drawn up.

For the time being, the follow-ups have not been fully defined. They will be finalized during the 2024 quarter, however, the budget envelopes for these follow-ups have been defined.

Estimated cost of proposed ERCA measures

The cost of ERCA measures has been estimated at €11.2m (excluding VAT) for the entire project. They break down as follows

In €excl. tax	Cost of the Measure	Follow-up costs	Total
Avoidance measures	154 000	0	**154 000**
Reduction measures	900 000	1 155 000	**2 055 000**
Compensation measures	6 770 000	521 000	**7 291 000**
Accompanying measures	1 380 000	339 000	**1 719 000**
Total	**9 204 000**	**2 015 000**	**11 219 000**

THEMATIC SHEET 2: IMPACTS OF THE PROJECT ON DRINKING WATER PRODUCTION

The Saint-Martin drinking water plant

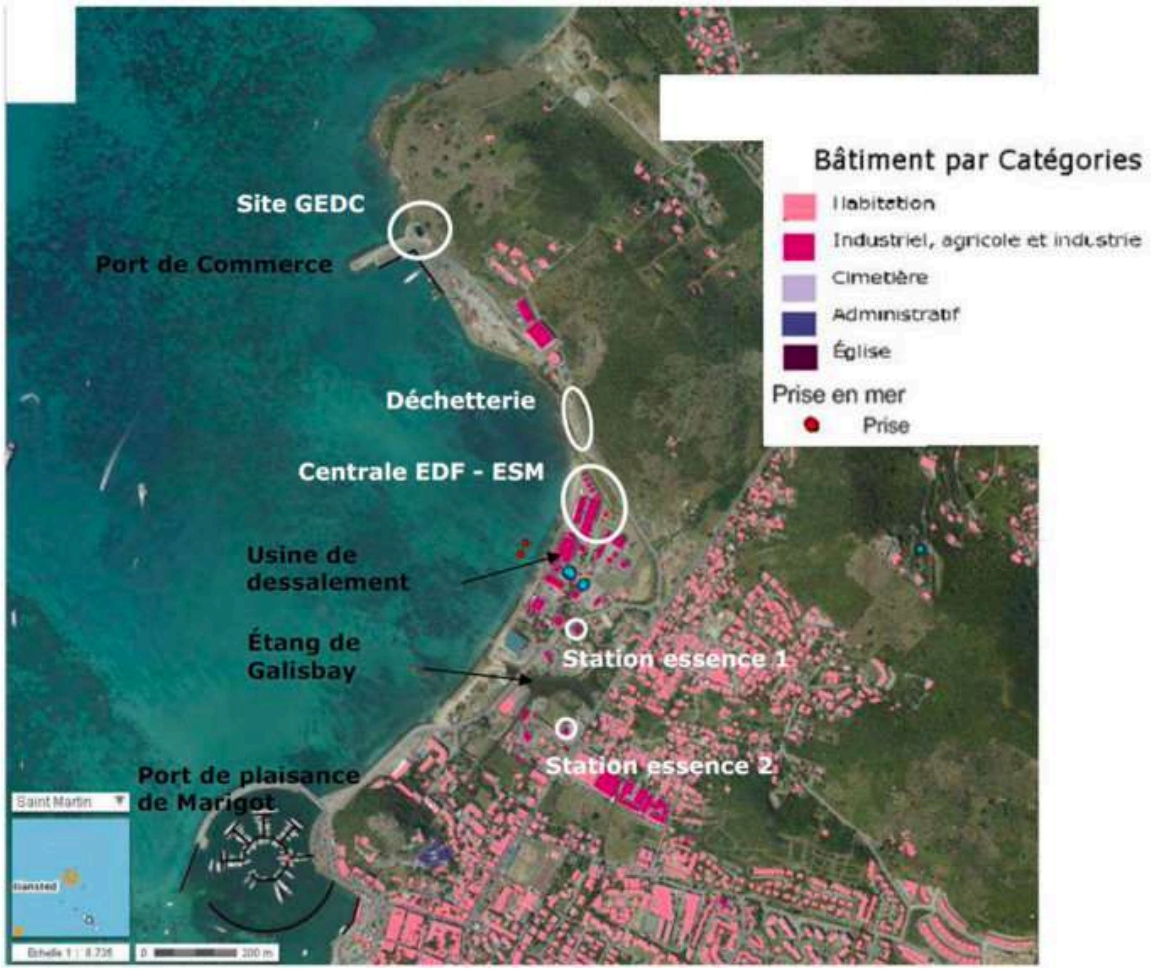


Figure 2 : Facilities and equipment in the vicinity of the port (source Egis, 2017)

Saint-Martin is supplied with drinking water by the Water and Sanitation Authority of Saint- Martin (Établissement des Eaux et de l'Assainissement de Saint- Martin - EEASM) from the Galisbay desalination plant, which provides reverse osmosis treatment of seawater. The plant has been operated by the French drinking and waste water management company SAUR since December 1st, 2018.

In addition, a historic cooperation agreement was signed on Tuesday December 5, 2023 between Saint-Martin and Sint Maarten, opening up the possibility of supplying the French side with drinking water from the Dutch side's drinking water distribution network in the event of a production shortfall (at the drinking water plant of Galisbay).

Figure 3 : Aerial view of the plant. Only one of the two pumping lines is operational (source: Safege, 2014).

Currently, the plant pumps around 19,200 m3 /d of seawater (800 m3 /h) to produce a maximum of 7,200m3 /d of drinking water (peak tourist season) and 6,300 m3 /d for routine use (low season).

Seawater is pumped approximately 50 m from the coast via a 600 mm diameter pipe laid directly on the seabed. The seawater sampled undergoes multiple analyses, including turbidity measurement, which is a good indicator. Turbidity ranges from 0.5 NTU[5] to 20 NTU (maximum after storms and major terrigenous inputs).

The pumped seawater is then directed to sand filters, then to microfilters (wool filters) and finally to reverse osmosis membranes that retain chlorides and other molecules. The treatment removes all suspended matter. The fresh water is then remineralized and stored in 2 tanks of 5,000 m3 each in the plant. After disinfection, the water is injected into the distribution network.

Figure 4 : The 3 reverse osmosis units (source: Gaïa, 2020)

[5]NTU or Nephelomteric Turbidity Unit is the standard optical unit for measuring turbidity.

Vulnerability

At present, the desalination plant has little tolerance for variations in seawater quality, particularly with regard to concentrations of suspended solids (SS). In fact, seawater treatment is stopped when turbidity (which correlates with suspended solids concentration) exceeds 20 NTU, and is disrupted when turbidity exceeds 5 NTU.

When strong gales or storms increase seawater turbidity, water production can be stopped. This is becoming increasingly frequent.

Estimated project impacts

Construction work generates suspended solids

During construction of the project, two phases are likely to generate a resuspension of fine particles and thus an increase in the turbidity of the seawater drawn by the drinking water production plant: dredging and dike construction.

During dredging, a mechanical shovel is used on a floating pontoon. As the shovel bucket moves up the marine material (towards a barge), it can release fine particles (between 1 and 5% of it's load).

Figure 5 : Example of mechanical dredging (source: Océlian - VCMF)

When building the dikes, it will be necessary to bring in materials of varying sizes (from the quarry) to build the core of the dike and finally to install the shell (large blocks of rock or concrete). The core of the dike is built from quarried material made up of crushed rock, with "grains" weighing between 1 and 500 kg. This material may also contain fine particles resulting from the crushing of the rocks used to manufacture it. The proportion is small, well below 1%, but when they are placed on the seabed by trucks, these fine particles can be resuspended and increase the turbidity of the water.

Impact assessment

To assess the project's impact on the marine environment, a numerical hydrosedimentary model was built and used, calibrated on the basis of an offshore current measurement campaign. Using "supercomputers", currents, swell fields, and the transport of particles in suspension in the sea were modeled, taking into account a range of meteorological and oceanological conditions observed in Saint-Martin. The effects of the work on water quality were also simulated.

Without implementing mitigation measures, the simulations showed that during the 11 months of dredging, there could be between 70.5 days when suspended solids concentrations in the seawater column at the drinking water plant intake would exceed 2 mg/L (i.e. > approx. 5 NTU) and approx. 26.4 days when they would exceed 5 mg/L (> approx. 5 NTU). For safety reasons, the simulations are conservative, i.e. the calculated effects are deliberately increased to compensate for the uncertainty margins

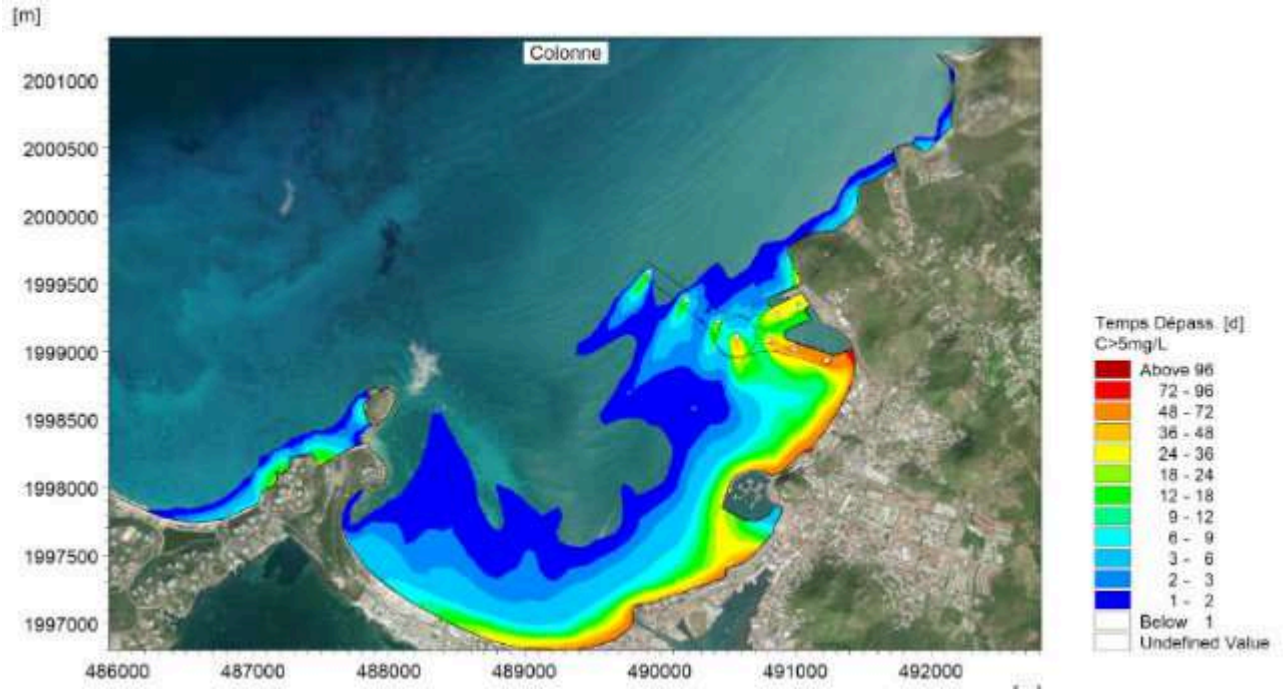


Figure 6 : Simulation results for the 11.5 months of construction work to calculate the time required to exceed the 5mg/L concentration of TSS in the water co lu m n (source DHI) Implementation of ERC measures

To reduce impacts on water quality, mitigation measures will be implemented.

The first "ME04" reduction measure (see Thematic Sheet 1 - ERC measures) is the choice of seabed dredging technique. Hydraulic" dredging techniques, which have the advantage of being particularly rapid, have been ruled out in view of the significant increase in seawater turbidity that this technique generates. Mechanical dredging, the chosen solution, reduces the effects of dredging on water turbidity.

It is also proposed to install anti-turbidity screens or anti-suspended matter curtains around the dredging workshop, but also around the water intake and finally at the end of the dike under construction.

This is a kind of large tarpaulin forming a "sleeve" that is deployed vertically from the bottom to the surface and held in place by anchor lines and floats on the surface. The curtain forms an effective physical barrier, reducing turbidity by over 80%.

These curtains have been used in many shipyards over the last ten years, and have proved highly effective.

Figure 7 : Illustrations of the installation of an anti-suspended matter curtain in a dredging workshop (Web source)

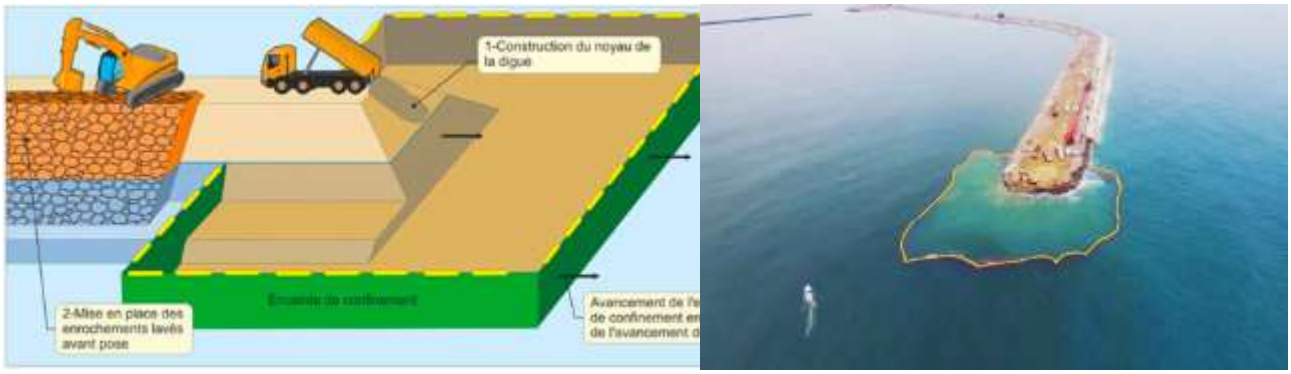


Figure 8 : Illustrations of the installation of an anti-suspended matter curtain (Web source)

Point	Seuil (mg/L)	Sans écrans	Avec écrans
Prise d'eau	2	70,5 jours (21,8%)	37,3 jours (11,5%)
	5	26,4 jours (8,2%)	13,2 jours (4,1%)

The numerical simulations were repeated with the screens in place. At the water intake, over the simulated period of 11.5 months, the exceedance times for the 2 mg/L concentration were reduced to 37.3 days, and for 5 mg/L to 13.2 days. The abatement rate or effectiveness of the screens is of the order of 50% in terms of exceedance times.

Point	threshold	Without screens	With screens
hydrant	2	70,5 days 21,8%	37,3 days 11,5%
	5	26,4 days 8,2%	13,3 days 4,1%

Figure 9: Results with and without exceedance time screen for 2 TSS thresholds (source DHI)

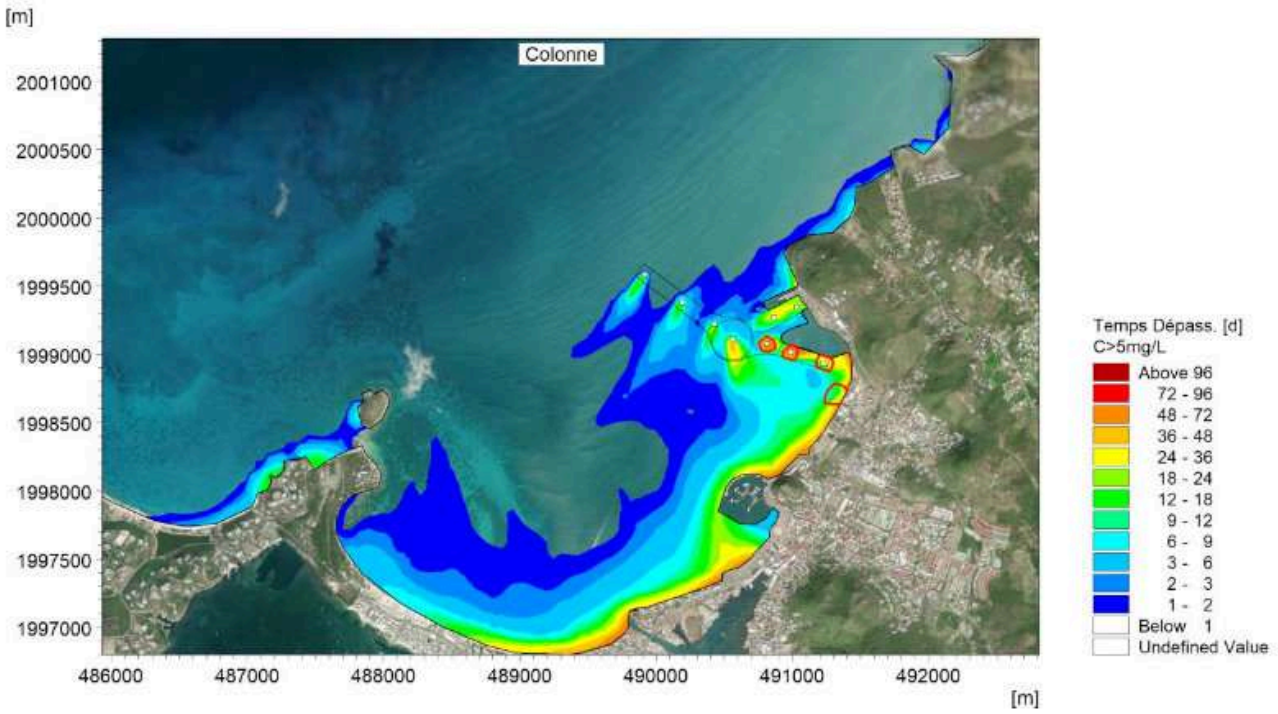


Figure 10 : Simulation results for the 11.5 months of work to calculate the time taken to exceed the 5 mg/L TSS concentration in the water co lu mn with the installation of an anti-suspended matter curtain (source DHI).

Finally, during the construction phase, real-time monitoring of water quality in Galisbay Bay and at the seawater intake of the seawater treatment plant is planned, including turbidity monitoring. Should turbidity exceed a threshold deemed critical for the proper operation of the drinking water plant, work will be halted until weather conditions return to more clement levels.

Final impact assessment

	Nature	Gross impact	Avoidance measures	Reduction measures	Net impact	Accompanying measure
The physical environment						
Sedimentary nature, water quality	Increased turbidity with an export of around 1% of the dredged mass into and out of Grand Baie	**Strong**	-	MR01: Installation of an anti-Suspended matter curtain around the dredging workshop, the drinking water intake, and the forward dike construction area.	**Low**	

Table 10 : Impact assessment with the implementation of measure MR01 (source: Gaïa Terre bleue)

The measure to implement anti-suspended matter curtains has been named MR01 **(see note on ERC measures)** and thus reduces the risk of disruption to drinking water production from high to low.

Future developments

The Water and Sanitation Authority of Saint-Martin (Établissement des Eaux et de l'Assainissement - EEASM) is well aware of the current fragility of the plant's drinking water intake. It has undertaken a major study to modify this intake, which could lead to the creation of a real drilled well to pump through the sedimentary layer, thus eliminating any risk linked to suspended solids. The work could be carried out over the next 5 years.

THEMATIC SHEET 3: IMPACT OF THE WORKS ON THE POPULATION

Definition of the works

Deepening maritime access (dredging operation): In order to accommodate ships with a greater draught, it is necessary to deepen the existing channel. This marine material extraction operation, known as "dredging", aims to extract a volume of over 718,000 m3 of sediment from the seabed, of which 441,000 m3 will be reused for the construction of the quay. The remaining material, i.e. 277,000 m3. Will be discharged into the sea by dredging.

To define the most appropriate dredge disposal area, a multi-criteria analysis was carried out on the basis of oceanographic studies in 2021 and 2022, taking into account :

- The distance of the area to the west, while remaining within French territorial waters, at depths of approximately 500 m and limiting the distance to the port to about 20 km.
- The dispersion capacity of the site.
- Absence of sensitive or remarkable species (especially deep-sea corals)
- The absence of use of the area (low traffic, no fishing, no telecommunication cables).

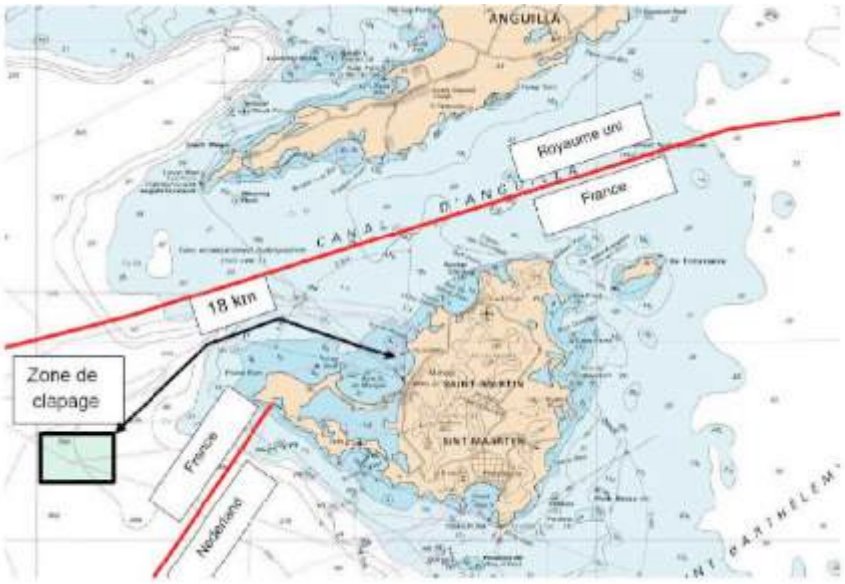


Figure 11 : Location of clamming area (source: EGIS, 2017)

Creation of a 10-hectare platform: The platform will be formed by constructing an enclosure dike inside of which the dredged materials will be stored. A covering will then be applied over the entire surface of the platform.

Quay construction: 1 m-diameter steel piles and sheet piling will be anchored into the seabed. Reinforced concrete structures will then be masoned onto the piles to form the quays.

Construction of a multi-purpose quay (cruise + commercial): The project calls for the creation of a new quay along the breakwater, dedicated to accommodating commercial and cruise ships of up to 200m in length.

Extension of the breakwater: Rockfill will be installed in the extension of the existing breakwater to lengthen it by 200 meters and increase the protection of future port infrastructures against swells.

Site materials management

Designation	Unit	Origin	Destination
Dredged sand	441 000 m^3	Channel and turning circle	Platform enhancement
Dredged sand	154 262 m^3		On-site dredge disposal
Clay	122 666 m^3	Turning circle	On-site dredge disposal
Riprap (0.5/1 T)	1 000 m^3	Quarry	Embankment at Multi-purpose quay
Purged sand	35 000 m^3	New embankment multi-purpose quay	Upgrading multi-purpose quay
TVC dam core (1-500 Kg)	32 000 m^3	Quarry	Multi-purpose quay
Filter 40-200 Kg	30 000 m^3	Quarry	Multi-purpose quay
Underlay 0.5/1T	18 000 m^3	Quarry	Multi-purpose quay
Acropods	25 000 m^3	Quarry aggregates, imported cement	Multi-purpose quay
Steel piles	6 300 T	Import	Multipurpose Quay, Commercial Quay, RoRo Quay
Sheet piling	764 T	Import	Multipurpose Quay, Commercial Quay, RoRo Quay
Reinforced concrete	21 300 m^3	Quarry aggregates, imported cement	Multipurpose Quay, Commercial Quay, RoRo Quay, Platform
TVC dyke core (1-500 kg)	109 900 m^3	Quarry	Platform
Filter (100-500 Kg)	7 400 m^3	Quarry	Platform
Underlay (0.5-1 T)	13 300 m^3	Quarry	Platform
Shell (1-2 T)	39 100 m^3	Quarry	Platform
Shell (4-6 T)	10 800 m^3	Quarry	Platform
Shell (8-12 T)	19 300 m^3	Quarry	Platform

Table 1 : Balance of materials used (source: Setec, 2023)

For quarry materials and concrete, local supplies will be favored

Work schedule

The work schedule is 37 months (excluding the supply and removal of equipment). It can be broken down as follows:

- Dredging work 12 months
- Construction of temporary dike 10 months
- Construction of the final dike 12 months
- Treatment of the platform 13 months
- Construction of the multi-purpose quay 19 months
- Building the RoRo quay 6 months
- Building the Commerce quay 13months

Space organization on the future platform

The current project only involves an 8-hectare extension reclaimed from the sea, the remainder being a redevelopment of the existing port area. This means that only 8 ha will be reclaimed from the sea.

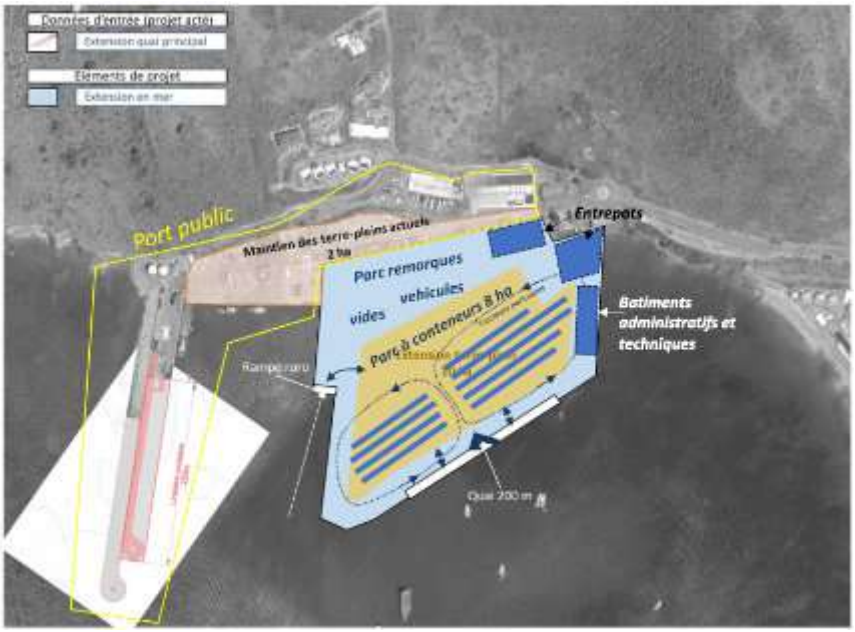


Figure 12 : Land use (source SEE'UP, 2023)

Main impact of the site on the population

Impact on traffic

Construction work will require trucks to bring building materials from the quarry to the site. Truck trafic is estimated at 1 truck every ten minutes for 37 months, or around 60 trucks/day (duration: 10 hours). According to traffic counts carried out on RN 7 in 2022 (ARTELIA), average daily traffic on the national road (RN) between Grand-Case and Marigot is around 10,000 vehicles per day in each direction. Truck traffic generated by the construction site will lead to a 0.6% increase in traffic on the national road RN7.

Figure 13 : Truck route from quarry to port

Impacts on the sound environment

In July 2023, VENATHEC, a consulting firm specializing in acoustics, modeled the impact of the various phases of the project on ambient noise.

As a first step, noise measurements were carried out at 10 points in the vicinity of the port and in Marigot.

Several simulations of noise propagation during construction were then carried out, based on 5 scenarios (see table). Each scenario corresponds to the use of one or more noisy construction machines.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Période règlementaire étudiée	Diurne et nocturne	Diurne et nocturne	Diurne et nocturne	Diurne uniquement	Diurne uniquement
Dragage zone A	X			X	
Dragage zone B		X			
Dragage zone C			X		
Grue sur ponton pour construction digue quai commerce [1]	X			X	
Bateaux entre drague et terreplein	X	X	X	X	
Engins de chantier au niveau du terreplein		X	X		
Battage pieux et palplanches quai croisière [1]				X	
Battage pieux et palplanches quais commerce [1]					X
Traffic routier	X			X	

Table 2 : Description of scenarios and sound sources (source Venathec)

Noise regulations: The various regulatory texts do not specify noise limit values to be adhered to for i nfrastructure construction projects. Therefore, in order to assess the acoustic impact of these works on the neighborhood, it has been decided to compare the results of the simulations with the thresholds of the "Noise Disturbance" regulations. Details are outlined in articles R 1336-6 and R 1336-7 of the Public Health Code.

	Émergence maximale admissible [dBA]		Durée cumulée d'apparition du bruit particulier
	Jour (07h - 22h)	Nuit (22h - 07h)	
Code de la santé publique Art. R.1336-7	5 dBA	3 dBA	Supérieure à 8 h
	6 dBA	4 dBA	Comprise entre 4 et 8 h
	7 dBA	5 dBA	Comprise entre 2 et 4 h
	8 dBA	6 dBA	Comprise entre 20 min et 2 h

Tableau 3 : Neighborhood noise regulation thresholds (source: Légifrance)

Results: The tables below summarize the increases in noise levels (A) compared with the current situation at the points studied, according to the scenarios, on the basis of major assumptions:

Figure 14 : Location of the 10 measuring stations (source: Venathec)

Période diurne										
Scenario de travaux	Point 1	Point 2	Point 2bis	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9
Scenario 1	6.5	0,5	1.5	0,5	0.0	1,5	3,5	0,0	0.0	0.0
Scenario 1bis	7.0	0,5	0,5	0,5	0.0	1,5	3,5	0,5	0,0	0,0
Scenario 2	14,5	7.0	14,5	0,0	1.0	0.0	0,5	8.0	4,5	0,0
Scenario 3	14,5	7.0	14,5	0,0	1,0	0,0	0,5	8.5	4,5	0,0
Scenario 4	7.5	15,0	21,0	0,5	1,0	2,0	3,5	14,5	10,0	0,5
Scenario 4bis	8.0	15,0	20,5	0,5	1,0	2,0	3,5	14,5	10,0	0,5
Scenario 4ter	8.0	19,0	23,5	0,5	2,0	2,0	3,5	15,0	9.5	0,5
Scenario 4quater	8.0	18,5	23,5	0,5	2,0	2,0	4,0	15,0	9.0	0,5
Scenario 5	8.0	21,0	29,0	0,0	3,5	1,0	2,0	18,0	11,0	0,5
Scenario 5bis	22,5	18,0	25,0	0,5	5.5	2,5	3,0	23,0	17,0	2,0

Vert : A < 5dBA ; Orange : 5dBA < A < 10dBA ; Rouge : A > 10dBA

Table 4 : Sound level increases (A) at daytime stations by scenario (source: Venathec)

Période Nocturne										
Scenario de travaux	Point 1	Point 2	Point 2bis	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9
Scenario 1	7,0	0,0	0,5	0,5	0,0	2,5	5,0	0,5	0,0	0,0
Scenario 1bis	7,5	0,0	0,5	1,0	0,0	2,5	5,0	0,5	0,0	0,0
Scenario 2	15,0	4,0	10,5	0,0	1,5	0,0	0,5	9,0	5,0	0,5
Scenario 3	15,0	4,0	10,5	0,0	1,5	0,5	0,5	9,0	5,0	0,5

Table 5 : Noise level increases (A) at night stations by scenario (source: Venathec)

Conclusions: The points most affected correspond to the nearest points (Points 1, 2, 2bis, 7). Of these, only points 2 and 2bis correspond to residential areas. Point 1 corresponds to the port's business zone, where offices are located. Point 7 corresponds to the Galisbay business park. The noisiest scenarios are those involving site machinery working on the median strip (scenarios 2 and 3) and those involving pile driving and sheet piling (scenarios 4 to 5bis).

Avoidance measure ME02 (see Thematic Sheet 1 - ERC measures) prohibits the noisiest work (ramming, vibratory hammering, drilling) at night.

Impacts on water quality

The impact of dredging and dike construction work is described in detail in "Fact sheet 2 - Impacts of the project on drinking water production".

Impacts on drinking water and energy resources

The impact on drinking water resources is limited to :

- Drinking water consumption for the living quarters housing all site personnel,
- The production of concrete for the quays and acropods requires an estimated 9,000 m3 of water over a 24-month period, i.e. an average of almost 20 m3 per day. This corresponds to 0.3% of the plant's daily water production.

In terms of electricity consumption, all our site machinery runs on diesel.

8. GLOSSARY

Draft

Vertical distance between a vessel's waterline and the lowest point of its submerged hull. This measurement indicates the minimum depth of water required for the vessel to navigate without coming into contact with the seabed.

Ro-Ro

Also abbreviated as RoRo, it is an English expression used in logistics that refers to roll-on/roll-off traffic, meaning the transportation of trucks or trailers by special ships called "roll-on/roll-off vessels." It primarily relates to the handling technique.

Lo-lo

Also abbreviated as LoLo, it is an English expression used in logistics that refers to the loading and unloading that must be done with the help of a crane or gantry, as opposed to Ro-Ro, which is accessible to wagons or trucks via a ramp.

Transshipment

The process of transferring goods from one ship to another ship, and more generally, from one vehicle or transport vehicle to another.

TEU

Twenty-foot Equivalent Unit: A unit of measurement for container traffic. There are primarily two standard sizes of containers.

Hub

A major logistics center where various goods are gathered to be distributed to other destinations. The port can act as a hub for the transit of goods.

Mooring

The act of securing a boat or ship using means such as an anchor, ropes, or other mooring devices, and the location where this action is performed.

Temporary anchorage

Temporary anchorage in open water, using anchors and without fixed equipment such as buoys.

Permanent mooring

Mooring with permanent installations, such as buoys or piles, to secure vessels.

ZMEL

Acronym for "Zone de Mouillages et d'Équipements Légers" in French, or "Zone of Moorings and Light Equipment", a delimited area where light facilities for boat mooring are allowed.

Dredging / rock removal

The action of removing sediments, rocks, or other materials from the bottom of a body of water. The objective, in the context of the extension of the port of Galisbay, is to increase the depth of the water to accommodate larger vessels.

Dredge disposal

The offshore discharge of dredged materials, usually in a specifically designated area and under certain conditions.

Immersion zone

An area where dredged materials or other substances are deposited on the seabed, often after undergoing toxicity testing.

Turbidity

A measure of water clarity, influenced by the presence of suspended particles such as sediments, organic matter, and microorganisms.

Seagrass

Marine seagrasses are underwater meadows that grow in most seas globally, in strictly saline environments. They consist of flowering plants (marine angiosperms) rather than algae. These plants belong to one of the following four families.

Piling

The action of hammering or striking piles, sheet piles, or other structural elements into the seabed for the construction of docks or piers.

Drilling

“Drilling" is an action that involves digging holes in the ground, in the case of port expansion, the seabed, especially for the foundations of port structures, piles, or anchors.

Vibro-driving

Vibro-driving is a construction method that uses vibrations to drive piles or sheet piles into the ground. The vibrations help reduce soil resistance, making it easier to drive the piles.

Anti-suspended matter

A device designed to prevent the spread of particles or suspended matter in the air or in a liquid. It acts as a barrier or filter to trap these particles, preventing them from further dispersion.

Bubble curtain

A barrier created by injecting air bubbles into the water. It is used for various applications, including preventing the spread of pollutants, diverting fish away from hazardous areas, or isolating underwater zones for construction work.

CO2

CO2 is the abbreviation for carbon dioxide, a greenhouse gas that contributes to climate change when it accumulates in the atmosphere.

Mooring buoys

Permanent mooring system used to secure boats or ships in open water or near the coast. It consists of a heavy weight (typically a concrete block) or a special anchor fixed to the seabed, connected by a chain or cable to a floating buoy on the surface. Boats can moor to it by attaching their own ropes or chains to the buoy, providing a stable and secure mooring.

Fines

Aggregate made up of very small-sized elements.

Marine interface

Contact zone between sea and land.