DEPLOYING PRIVATE CAPITAL TO ACCELERATE THE GREEN TRANSITION

Green solutions in ports, waterways and coastal projects have increasingly become available thanks to many years of research and pioneering efforts in practice. These sustainable and/or nature-based solutions have shown to be good alternatives for classic solutions, but application is far from mainstream yet. One of the major hurdles is the lack of access of private capital to finance these kinds of solutions despite the strong interest of capital markets in green infrastructure opportunities. Identifying the hurdles and paving a way forward to overcome these hurdles could therefore help to increase the uptake of those green solutions.

A promising perspective

Although state-of-the-art sustainable and nature-based solutions have proven to be effective in practice, application at scale is certainly not the case. A major hurdle is that these types of solutions almost entirely rely on direct public investment and the willingness of governmental bodies around the world to take such a step. This limits the uptake and scaling of such solutions.

From the investment side, limitations in public budgets mean there is a bigger role for private capital to play to finance such projects. Moreover, increasingly this private capital is seeking such green opportunities. This increase is driven by fiscal regimes, regulations and reputational drivers. This capital is deployed, for instance, in wind parks, solar fields, electrification of railways, but seeks further diversification in the infrastructure sector. Deploying private capital to accelerate the uptake of green solutions for ports, waterways and coastal projects is therefore a promising perspective.

This particular issue came to table in discussions with the Swiss based MAVA foundation in 2019. This foundation aims to push sustainable development in a wide sense. Leveraging the force of capital markets to make real-world impact is a key pillar of their approach. The discussion led to the idea to build an initiative around the topic of financing green infrastructure in and around ports, waterways and coastal areas. This idea quickly took shape in a cooperation between Vital Ports (a Dutch NGO dedicated to this topic), B Capital Partners AG (Swiss-based Infrastructure Investment House), Swiss Re (Re-insurance Company), IADC (International Association of Dredging Companies) and CEDA (Central Dredging Association).
Financial partners

The Swiss Re Group is one of the world’s leading providers of reinsurance, insurance, and other forms of insurance-based risk transfer, working to make the world more resilient. B Capital Partners, an independent investment house established in 2003 in Zurich. They work with, and for, international institutional investors and large family offices often in close co-operation with developers in a broader sense. Switzerland’s position is itself as a world capital for green finance. Linking these Swiss networks to the networks of the dredging community in large therefore seemed a promising way forward.

A promising perspective however is not something that will unfold itself to deliver its fruits as soon as became quite clear. To find the synergy a roundtable was organised in Zurich at the Swiss Re Centre for Global Dialogue. The roundtable, with representatives of all involved organisations and their constituents, took place in February 2020 before the COVID-19 pandemic restricted travel worldwide.

The roundtable clarified a few points. The first being that the financial world and the world of dredging and designing companies speak different languages. The financial specialists were very unfamiliar with vocabulary, project types and activities of the dredging community. And vice versa. The landscape of financial concepts, specialist definitions and way of working was a lot to digest for the dredging community. Secondly, it was clear both communities aim for the same goal: green infrastructure projects, which is in line with the ambitions of all individual companies.

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At the table, it was clear that progress can only be made when mutual understanding is further increased.

A joint study

The roundtable was asked for a practical step to gather current understanding and knowledge about green projects and financial structures in a dedicated report. Such a report could be used to support further conversation with a wide variety of actors in the field. This led to the publication of the report “Financing of Sustainable Marine and Freshwater Infrastructure: A Joint study to explore financing of green coastal, river and port projects”. The report is based on the findings of a broad international team of experts.

The study provides six key lessons to enhance the uptake of green investment in this sector. In a later stage, these lessons have been summarised in an infographic. A series of webinars following the report publication, further learnings were gathered. This article discusses the key lessons, introduces the infographic and discusses the various reflections on the key lessons from a wider perspective. Conclusions and recommendations are also provided.

Green port and waterway infrastructure

Before diving deeper into the realm of private capital, it is useful to describe what is meant by green ports, waterways and coastal infrastructure and how this differs from classic solutions. (Note: terms such as “green” sustainable and nature-based solutions (NbS) are used interchangeably in this article. For specifics of definitions and associated solutions, reference is made to the PANIC and Ecolife 2019 publications of the EU, UN and other organisations.)

The collection of works at coasts, rivers, canals and ports areas are generally required to enable or provide flood protection, urban development, port development, navigable waterways and upgrade of recreational areas. Perhaps most telling is a summary of project types that describe the field. Classic examples, not necessarily green are:

- flood barriers
- seawalls
- breakwaters
- sand dunes restoration
- coastal protection
- integration of coastal zone management
- land reclamations
- dredging of navigable waterways
- port development
- breakwater construction

Green variants of these assets can be seen as ranging from “more sustainable than a classic solution”, up to “naturerelated solutions where benefits of natural processes from ecosystems help to deliver upon project needs. In general, the sustainable concepts are not only technically different, but also rely on early and extensive stakeholder involvement and execution methodologies with minimised ecological impact. Such green examples are:

- mangrove forestation
- coastal restoration
- coastal realisation, including habitat improvement and expansion
- circular use of materials, use of local materials
- eco-friendly river protection
- eco-friendly breakwaters
- flood barriers from natural materials
- integrated river system development

These green solutions are readily available to be applied on the precondition of a sustainable financial structure. It is important to mention that all these described concepts are mature solutions and have been applied in real-world situations. For many cases, monitoring and evaluations took place and showed the effectiveness both in terms of services provided as well as ecological quality.

Financing projects

In short, financing means that capital is provided. Different models exist where the developer or supplier receives direct payments (i.e. with taxpayers’ money) without involving financing. The responsible public authority will pay for project development expenses directly in accordance with the contractual arrangement with the developer/contractor. In contrast, financed projects have a capital cost. The government bears the costs of development with a payback mechanism kicking in after completion of the project. Two different types of financial projects can be distinguished on the basis of the cashflow for interest payments and loan repayments. These broadly fall into two categories based on the origin of those cashflows:

- Public service projects (e.g. coastal protection projects) where the government, each client, pays periodically after completion, where the payments may be based on performance or availability criterial (Figure 1). The report provides content for further dialogue to foster the uptake of green marine and freshwater concepts by private investors. This dialogue, including a webinar series, was part of, concentrates around the key lessons as identified in the report. These key lessons are:

1. To improve the availability of private capital in this segment, a joint screening by sponsors and private capital suppliers is strongly encouraged. Working jointly may avoid a few leading to, which may be attractive from a more construction Cad (e.g., capital expenditure) side but are unavailable for investors economically and/or sustainability wise. A joint selection effort based on sustainability and contractual solutions can focus scarce resources on the most promising opportunities with a snowball effect of projects’ private funding.

2. Since 2021, the European Commission requires institutional investors to include ESG (environmental, social, governance) considerations in their investment processes. New reporting requirements are underway.

4. Cross-border and international market frameworks still need to be built to capture some of the associated benefits that often overflowed as they are difficult to quantify particularly in relation to risk aversion.

5. The financial industry as a whole can be transformational in establishing a long-term investment framework. It can create new types of insurance offerings that make infrastructure projects more standardised, cashflows more predictable and more attractive to investors – thus unlocking financing.

6. Green solutions require a more holistic approach and greater coordination, and cooperation. They require need to be integrated into project development frameworks that increase their uptake and allow rerouting or unlocking new funds to support them.

Given the size and attractiveness of the sustainable infrastructure market – it is expected to approach $4 trillion by 2050 – and the growing appetite for sustainability and Sustainable Development Goals (SDGs) impact of their investments, it is expected that the financial world and the dredging community will open up to pursue the kind of projects featured in the report and more private capital can be put to work.

In a later stage, these lessons have been summarised in an infographic. A series of webinars following the report publication, further learnings were gathered. This article discusses the key lessons, introduces the infographic and discusses the various reflections on the key lessons from a wider perspective. Conclusions and recommendations are also provided.

FIGURE 1
Public service projects

FIGURE 2
Commercial projects
Green solutions might open up new ways of cost recovery as these solutions typically offer wider societal benefits.

In the MAVA foundation, it was decided to develop an infographic to help in spreading the message to a wider audience. As an infographic should be self-explanatory, it proved quite a task tailoring in all the elements. Projects involving dredging are a world apart. The meaning of nature-based solutions can fill bookshelves. The same is true of finance and cost recovery models. Bringing this all together for an audience specialised in one sector, but unfamiliar with others, was a challenging task. The resulting infographic (Figure 4) just like the report is free to use and distribute.

The infographic conveys the message of three steps: basic options and structures for green solutions; the key lessons learned; and the goal of accelerated uptake to be reached through these steps. The element at the left-hand side shows the key parts of a tailor-made puzzle. A desired solution needs to be embedded in a structure where the institutional setting, a cost recovery model and financing fit together.

Cost recovery models require particular attention. Green solutions might open up new ways of cost recovery as these solutions typically offer wider societal benefits.

This requires special effort to capture and monetise these societal benefits to ensure these can be of support for the project. Some examples of such models are selling carbon credits (either voluntary or compulsory markets); habitat banking, inclusion of sources supporting natural development or involve outside beneficiaries (tourism sector, fisheries) with an incentive to make the project happen. Figure 3 shows an example of this.

Further lessons from the webinar series

Following the launch of the report in September 2021 a series of three webinars were held to disseminate the results and stimulate mutual learning on the basis of the findings. These sessions were organised jointly with PIANC, CEDA and IADC and reached an audience of 350 people. The majority of the audience came from the public sector engineering firms, contractors, infrastructure finance/ investment sector and insurance industry. In all three sessions, the key lessons from the report were discussed and used to spur interaction with the public. The reflections from the audience have been anonymised, sorted and grouped together. These results are summarised below around three main questions.

Subsequent steps are needed to support the influx of private capital in order to accelerate the uptake of green solutions.
Society

12 13

SOCIO-ECONOMIC

carbon credits was seen as an important issue, as costs of nature-based solutions balance more towards NbS. Costs was also assessment of projects is lacking, resulting in counter discussions on higher costs. A holistic benefits of NbS should be made clear to knowledge is needed about NbS and the of green solutions. More transparency and

Many comments were made with regard to the report?

Question 1: Do you agree on the key lessons to address as mentioned in the report?

This question gave a wide variety of responses. The key lessons were generally recognised but triggered other reflections. Many comments were made with regard to determined awareness and uncertainty of the benefits of green solutions. More transparency and knowledge is needed about NbS and the benefits of NbS should be made clear to counter discussions on higher costs. A holistic assessment of projects is lacking, resulting in exclusion of externalities that would shift the balance more towards NbS. Costs was also an issue, as costs of nature-based solutions are perceived higher than traditional grey solutions. Uncertainty about the costs of carbon credits was seen as an important issue to resolve.

Certification and a common legal framework were also addressed. The legal framework is insufficiently developed to fit the needs of green projects. This expectation was that some of the hindrances around certification and the legal framework would diminish when the EU taxonomy is in place and becomes a familiar concept.

A lack of a proper business model for green infrastructure in the sector was one of the major talking points with the audience. Commercial investors need a proper business model which is often lacking in NbS projects. Revenue streams can be quantified easily for energy transitions projects such as windfarms, not so much for integrated coastal or river projects. Working with carbon credits and habitat banking is one of the potential solutions. Climate adaptation and coastal protection projects do not generate a cashflow, which is an important barrier for investors. Blended finance is presented as a potential solution in the report but it takes a long time to organise. This makes it less interesting for tendering parties.

Improving awareness was one of the additional issues that came forward. The financial world is often not aware of waterborne infrastructure projects. Or green alternatives in sectors are often considered to be more expensive than classic solutions, which is not necessarily the case. Very often, a green solution is no more expensive than anagony. The coastal protection project Hondsbossche and Pettemer Sea defence in the Netherlands was considered a clear example of such a case.

Question 2: How can the identified key lessons be put into practice?

The most important stepping stones from the audience were the need to build awareness, develop proper business models and strengthen policy incentives.

Awareness and communication are certainly issues at work. This counts for the broader public as well as specialised sectors, including the diversified group of investors and financiers. Currently many stakeholders are so called ‘sea blind’, meaning what happens outside our usual direct view as with what happens outside on the seas, does not feel very familiar. Activities of the dredging industry for instance, are well known in the sector itself but is lesser extend to the general public. Raising awareness of all the work that needs to be done, and which can be done, in a sustainable way was therefore seen as helpful.

Again, the absence of clear business models was a major talking point. A potential solution was seen in establishing support from international organisations to develop a classification certificate system to determine the value of a project. However, this was found to be a long-term exercise. Public-private partnerships could also be of help. As would realising a dialogue early in the process between private investors and public sector to give the private sector more detailed information. In addition, creating platforms where investors have access to positive externalities was considered helpful to support the sustainable variants of projects. Involvement of contractors on board at an early stage, without limiting them in tendering could also

Example of utilising the wider socio-economic benefits created by a mangrove restoration project.

**FIGURE 6**

Example of utilising the wider socio-economic benefits created by a mangrove restoration project.

<table>
<thead>
<tr>
<th>Project</th>
<th>Grey</th>
<th>Hybrid grey-green</th>
<th>Green</th>
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<tbody>
<tr>
<td>Land reclamation</td>
<td>Straightforward new land for desired purpose</td>
<td>Reclaiming land including habitat improvements or enlargements</td>
<td>Creation of polders using less material</td>
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<td>Combine land reclamation with protecting vulnerable low lying areas/ecosystems</td>
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<td>Use locally sourced materials and apply soil improvement</td>
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<td>Part development</td>
<td>Purpose built port infrastructure</td>
<td>Biodiverse breakwaters fostering marinelife</td>
<td>Natural harbour-ports</td>
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<td>Coastal protection</td>
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<td>Riverine flood risk reduction</td>
<td>Artificial levees, dykes, walls</td>
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<td>Wetland/Marshes restoration</td>
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<td>Navigational dredging</td>
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**TABLE 1**

Example solutions at various sustainability levels
The other group of comments related to all needs a voice. This question gave rise to a rich spectrum in this field? In terms of recommendations, it was supported by the wider audience and appeared to be strong and needed a positive outcome.

As the conclusions make clear, subsequent steps are needed to support the influx of private capital in order to accelerate the uptake of green solutions. Carving this path forward is the topic of a dedicated 11-day conference titled “Financing Sustainable Marine and Freshwater Infrastructure” organised by IADC in Dubai on 9 February 2023.

Acknowledgments

The author wishes to thank IADC, CEDA, Swiss Re, B Capital Partners AG and the MAVA Foundation for their support and participation in this building initiative. Particular thanks are due to all authors contributing to the report, which provided the basis for this article – Christine Schelske and Paolo Alemanni.

References


Summary

In the past decades, multitudes of sustainable and nature-based solutions have become available to apply in port, waterway and coastal projects. In practice, the application of such solutions is still far from mainstream. Meanwhile, public budgets for these projects are limited while private capital providers are seeking green infrastructure projects to put their money at work. Unfortunately, the specific field of green port, waterway, and coastal infrastructure is mostly overlooked with regard to deployment of private capital.

This topic was the focus of a joint study by Vital Ports, Central Dredging Association (CEDA), International Association of Dredging Companies (IADC), Swiss Re and B Capital Partners, which resulted in the report “Financing of Sustainable Marine and Freshwater Infrastructure”. The report provided six key lessons that can help to develop this market: 1) joint screening of projects by sponsors and private capital suppliers; 2) certification of projects; 3) standardised green bonds; 4) harmonised methods and reporting tools; 5) utilise insurance industry for de-risking projects; and 6) reinforced policy incentives in a series of webinars following the publication further learnings were gathered. This article discusses these six key lessons, as well as the further reflections on the key lessons from a wider audience.

IADC, CEDA, Vital Ports, Swiss Re and B Capital Partners (2021) Financing Sustainable Marine and Freshwater Infrastructure. A joint study to explore financing of green coastal, river and port projects


Contact persons at financial institutions are often unknown because they do not talk to commercial stakeholders. This might enable the provision of tailor-made solutions for a subset of projects (e.g. ports), could help to develop the private capital sector is to be strengthened. Particularly strengthening outreach to the private capital segment is helpful. A dedicated programme and taskforce to keep building such awareness was seen as useful.

Developing further instrumentation was another reflection on the report. Proper instrumentation to assess the wider societal benefits of sustainable infrastructure was mentioned in this light. The transactional nature of the entire sector, both developers and investors alike, calls for fitting frameworks and agreements.

In general, the webinars achieving one of the key issues discussed in the report, provided further nuanced insights for the sector. The topic of deploying water capital to accelerate the green transition in this sector has gotten more visible on the agenda of major players in development and financing of such projects. In many aspects, it remains a long journey but support and progress appeared to be strong and needs a positive outlook.

As the conclusions make clear, subsequent steps are needed to support the influx of private capital in order to accelerate the uptake of green solutions. Carving this path forward is the topic of a dedicated 11-day conference titled “Financing Sustainable Marine and Freshwater Infrastructure” organised by IADC in Dubai on 9 February 2023.

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References


For more information

The full report, which is free to download, can be found at www.financing-smafi.org along with an infographic and other background information. Contact the author at arjan.hijdra@vitalports.org.

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