

SUMMARY

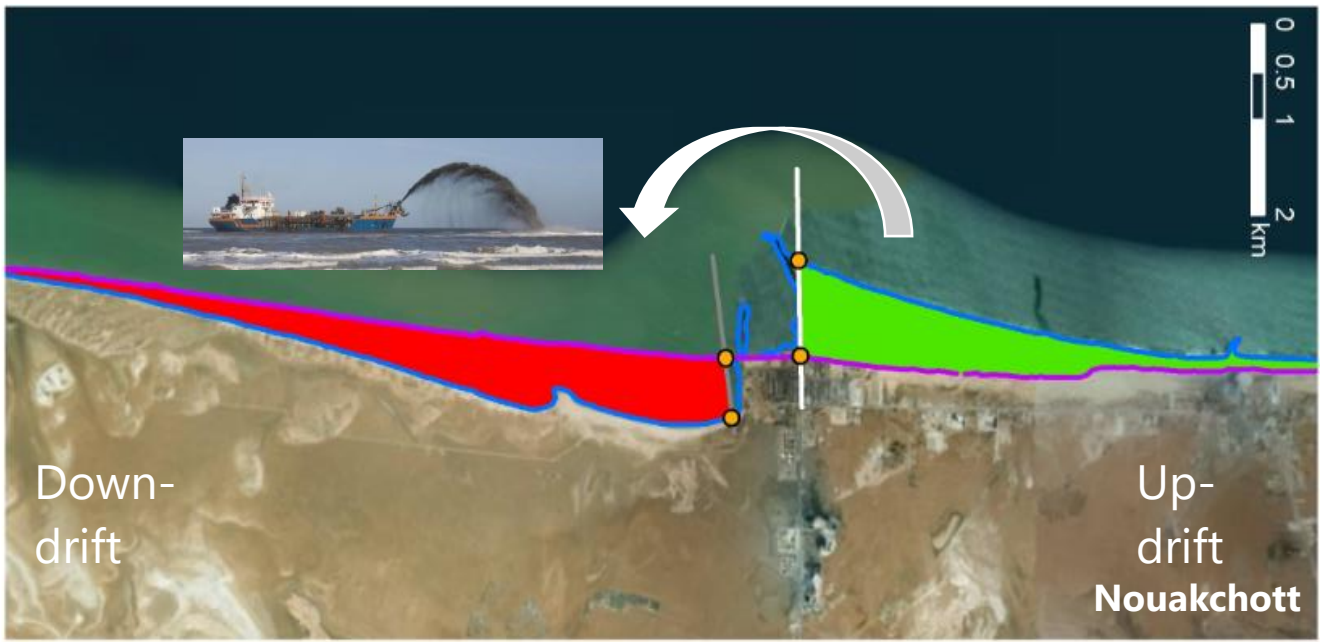
TRANS-SAND: A TRANSNATIONAL BY-PASSING SCHEME FUNDED BY A PUBLIC-PRIVATE DREDGING FUND

In order to tackle coastal erosion adjacent to seaports in West Africa, we propose to **restore the sand balance** through the implementation of a **sand bypassing scheme**. This solution, based on proven technology, will have direct benefits for the ports (less sedimentation) and coastal communities (less erosion). The solution is scalable to multiple West African seaports, experiencing erosion problems. The innovative aspect of this solution is to capture scale benefits by means of a **regional cooperation** between countries and ports by operating combined dredging capacity in a **public-private dredging consortium**. This operation will be principally funded through a **public-private pooled dredging fund** financed by port operators/authorities and other stakeholders. Reduced maintenance dredging costs for the ports will be used to finance sand nourishments to mitigate coastal erosion. If additional funding is required to complete a bypassing scheme, a compensation mechanism will be applied, following the "polluter pays principle" to the amount that the erosion mitigation cannot be funded by other beneficiaries. Key for the success of the solution is the setting up of a robust, independent and regularly evaluated governance regulated by an international institution.

We estimate the preliminary costs of the solution between 63-66.8 M€ compared to 81.1 M€ if nothing is done (due to erosion damage) and 125 M€ for a conventional dredging and sand nourishment approach for each port individually. Our solution becomes more attractive when more ports/countries participate and with growing sediment volumes that are expected in the future for climate change adaptation. As a pilot it seems logical to select 2-3 ports that are relatively close to each other, for example Lomé, Cotonou and Lagos.

The highlights of our solution are:

- **Innovation:** a transnational sand bypass and the proposed governance/financial setup is unprecedented as it aims at applying the "polluter pays principle" for coastal erosion in a mitigated and acceptable way thanks to dredging costs mutualization and optimized coastal erosion management.
- **Feasibility:** sand bypass is a robust, proven technology. Although setting up the transnational dredging consortium is more challenging, successful national benchmarks confirm its expediency: expected cost savings will create the necessary interest to attract local partners.
- **Impact:** sand bypass will have direct results through reduced erosion and port sedimentation. By taking the morphological system as a starting point instead of local ad-hoc 'fixes', we believe that our solution will also have a **long-term positive impact** on coastal dynamics with the restoration of the natural sediment budget.
- **Co-benefits:** cost savings will be achieved through a shared interest between ports and easier access to state-of-the-art dredging technology. Additional co-benefits are involvement of local communities in the implementation of the project, natural habitat restoration and sustainable knowledge transfer.
- **Implementation Readiness:** being based on robust and proven technology with a track record in other countries, the solution is implementation ready. It is scalable in time for upscaling to climate change and in space for including gradually more ports and/or increasing the size of the sand nourishments, which allows the governance structure to be gradually developed within 3-5 years.



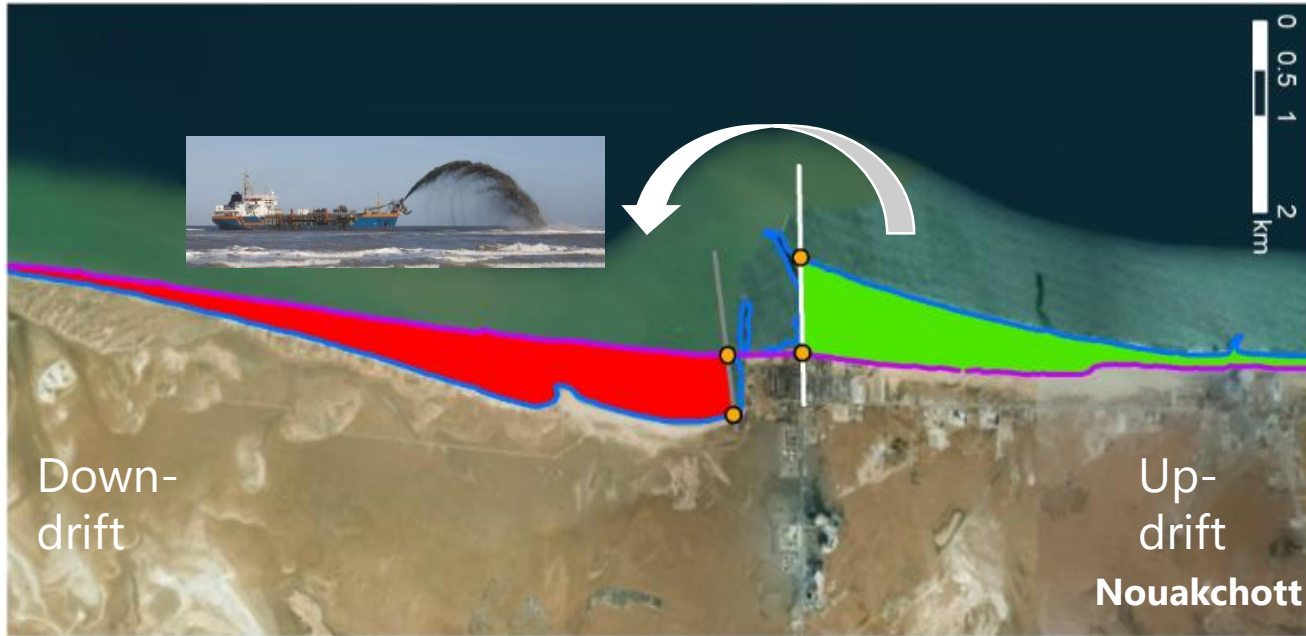
DAY 1 FULL PRESENTATION

TRANS-SAND A SOLUTION TO TRANSCEND THE PORT AND NATIONAL BOUNDARIES

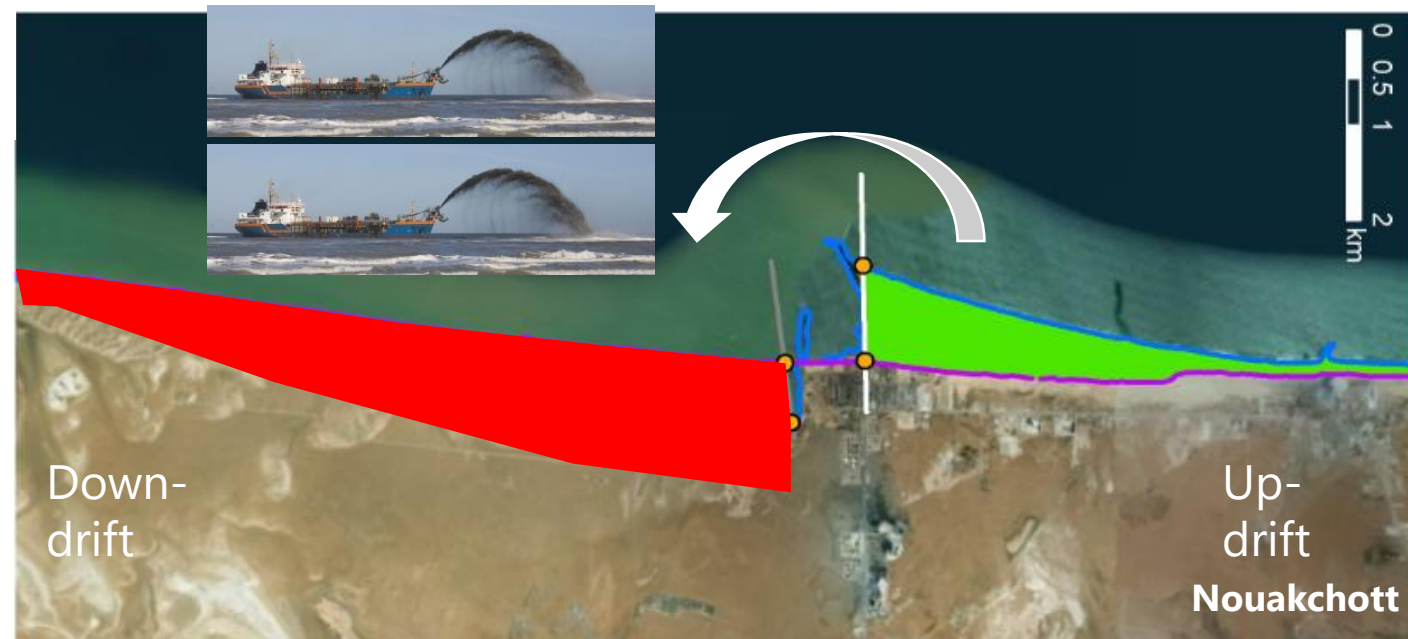
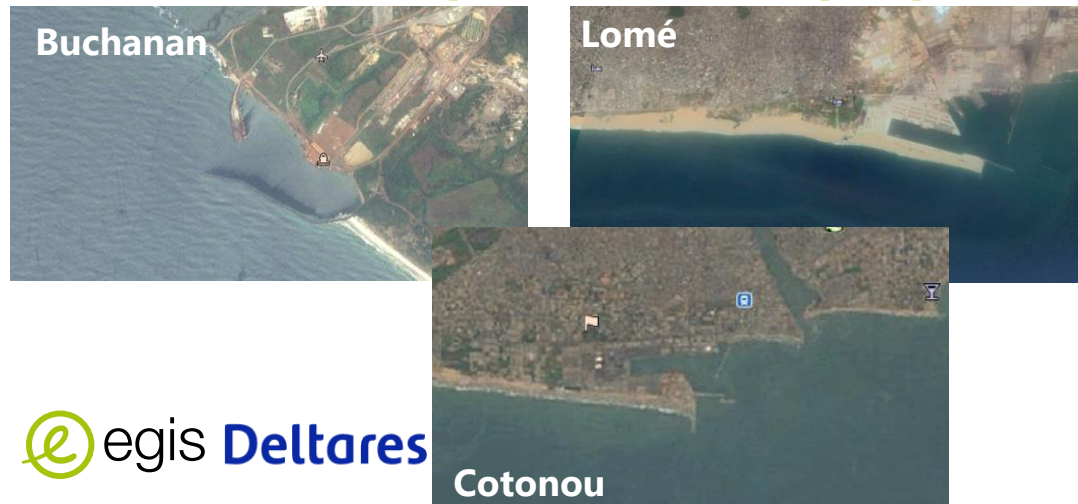
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WACA CALL FOR INNOVATION - 2020

A PROVEN & SCALABLE TECHNICAL SOLUTION...

Restore the sediment balance by a transnational by-passing scheme

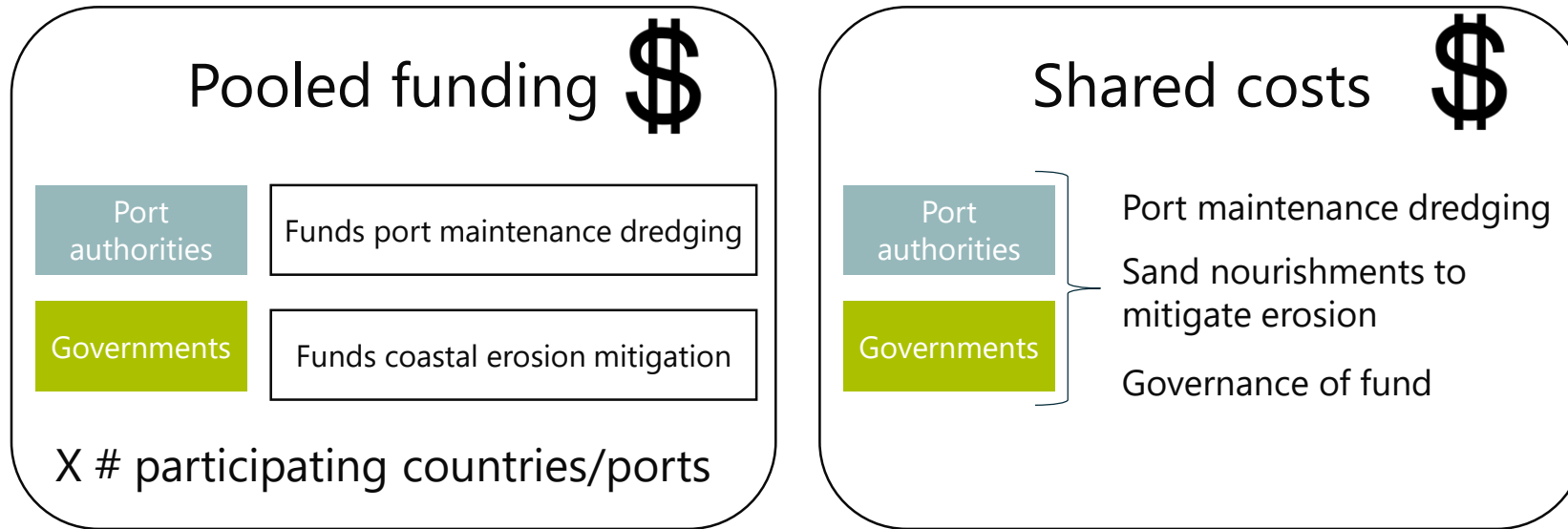


... with a solution scalable in time (sea level rise) and space (for multiple ports)

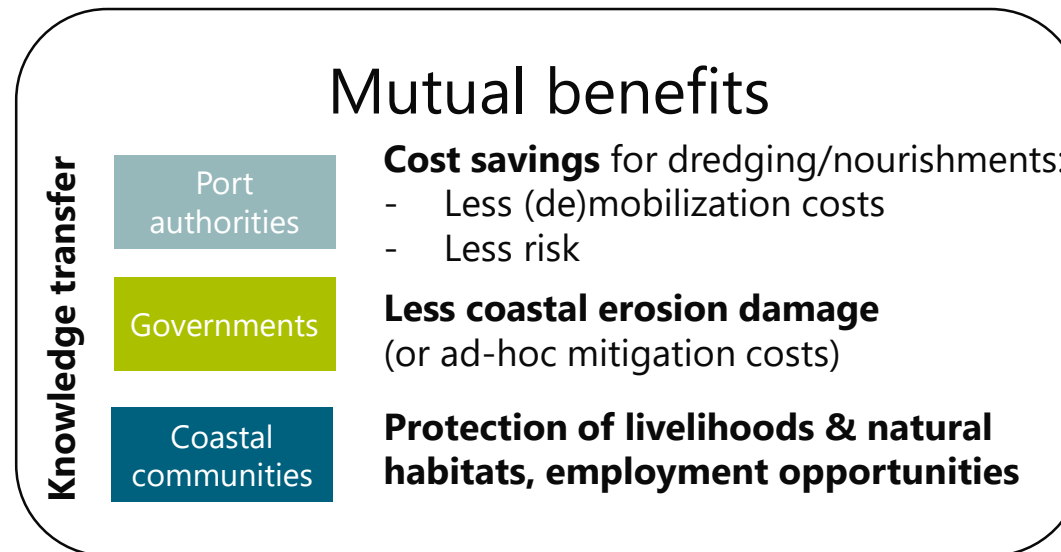


... BENEFITTING PORTS, GOVERNMENTS & COMMUNITIES

Setup



Impact



... WITH AN ATTRACTIVE FINANCIAL IMPACT

Comparison between 3 main scenarios

- **Scenario A:** 'Do Nothing' - classic port maintenance dredging (offshore) disposal, no sand nourishments
- **Scenario B:** 'Individual sand bypassing': each ports bypasses sand individually
- **Scenario C:** 'Regional sand bypassing': our solution (in house or sub-contracted)

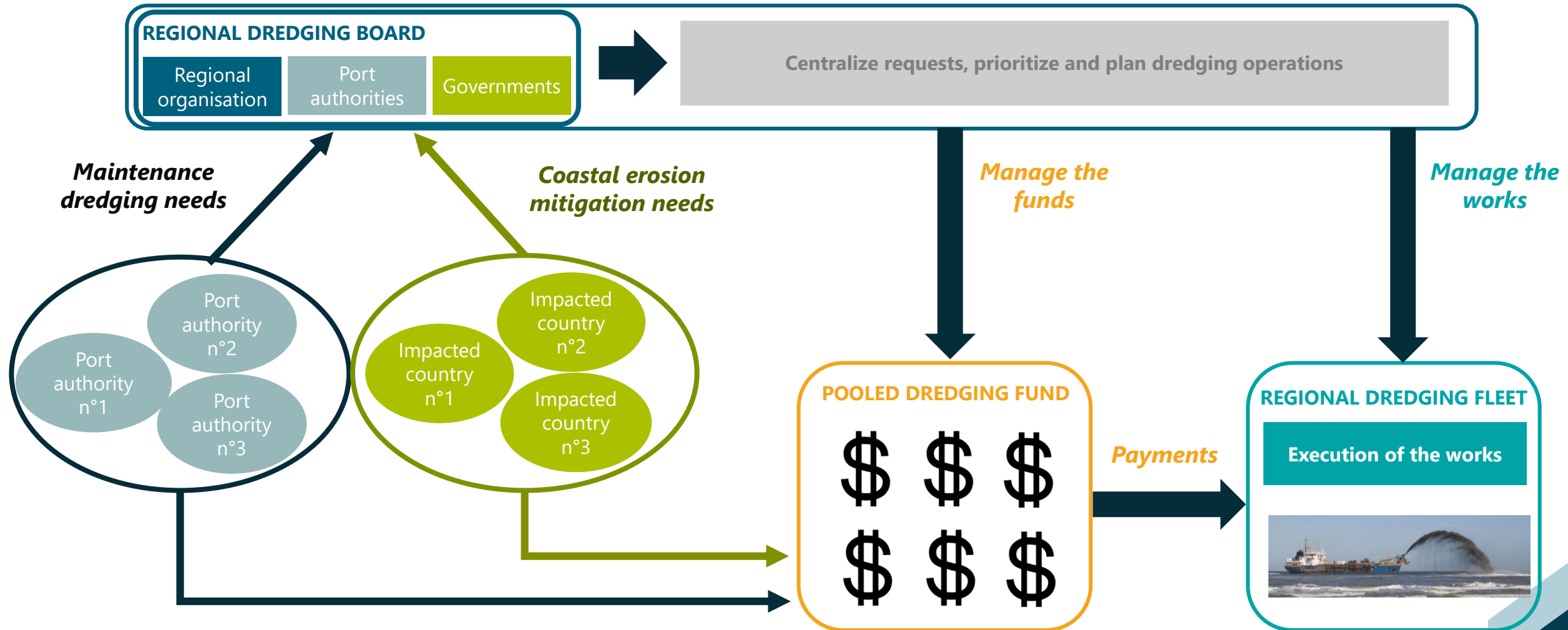
Description	A: Do nothing	B: Individual bypassing	C: Regional bypassing
	Total	Total	Total
DREDGING OPERATION COSTS	42 M€	125,0 M€	52,5 - 53,0 M€
CONSULTANCY/GOVERNANCE	0,0 M€	0,0 M€	10,0 M€
IN-HOUSE DREDGING FLEET (OPTIONAL)	0,0 M€	0,0 M€	0,0 – 4.3 M€
TOTAL	42,0 M€	125,0 M€	63,0 – 66,8 M€
COST OF ENVIRONMENTAL DEGRADATION (COED)	39,1 M€		
TOTAL INCLUDING COED	81,1 M€	125,0 M€	63,0 – 66,8 M€

Preliminary impacts:

- +15 to 20% cost savings compared to Scenario A
- Scale benefits due to regional approach: 50% cost savings compared to Scenario B

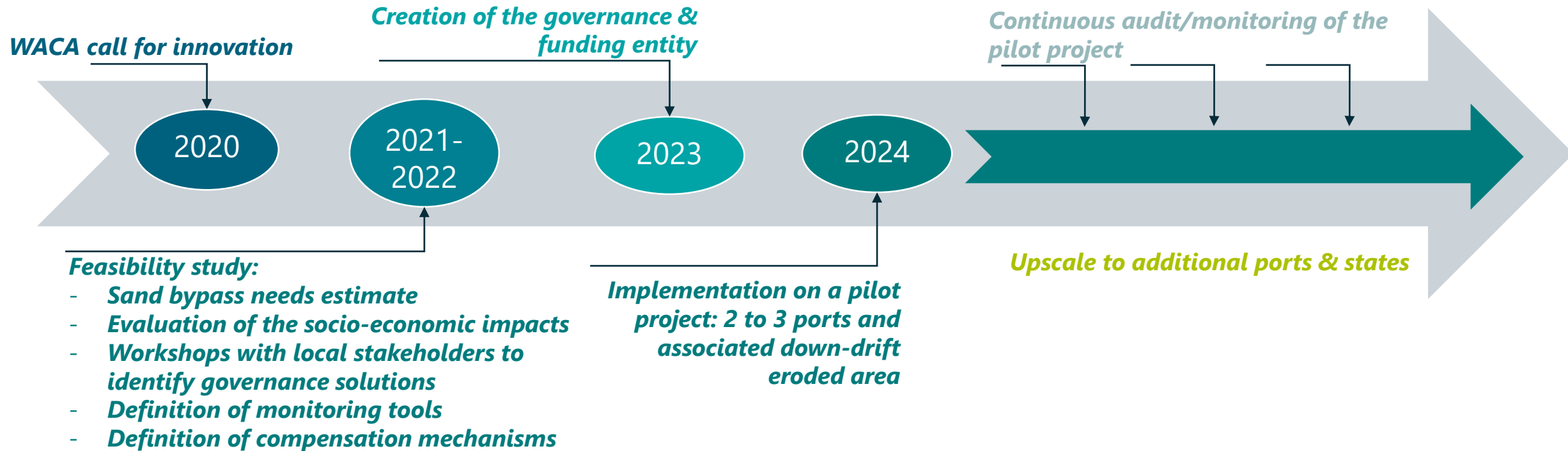
AN INNOVATIVE GOVERNANCE & FINANCING SCHEME

A regional governance benchmarked on the successful French Dredging GIE (Interest Economic Group)



TRANS-SAND: IMPLEMENTATION TIMELINE

A solution that can be developed gradually



TRANS-SAND: THE MAIN HIGHLIGHTS

A solution of “transnational By-Passing scheme funded by a Public-Private Dredging Fund” to transcend the port and national boundaries

- Our consortium has **strong experience in West African countries** and has developed key knowledge in **science, engineering and finance to address coastal erosion**
- An integrated **turnkey solution** financed by the proposed organisation
- Implication of **public and private partners** will stimulate increased exchange between all stakeholders

- **Innovation:** a **transnational solution** that proposes to solve the coastal erosion issue at a **regional level**
- **Feasibility:** technical solution based on **robust and proven technology** that can be implemented quickly with fast results
- **Impact: long-term positive impact** on coastal dynamics
- **Adaptation to national context:** solution **replicable for multiple ports** in WACA countries
- **Benefits:** a solution with **direct benefits** for ports and coastal communities and potential **co-benefits** with natural habitat restoration, increased knowledge of coastal erosion dynamics, etc.
- **Implementation readiness:** a solution that is **scalable in time** (to take into account climate change) and **in space** (to involve several countries)

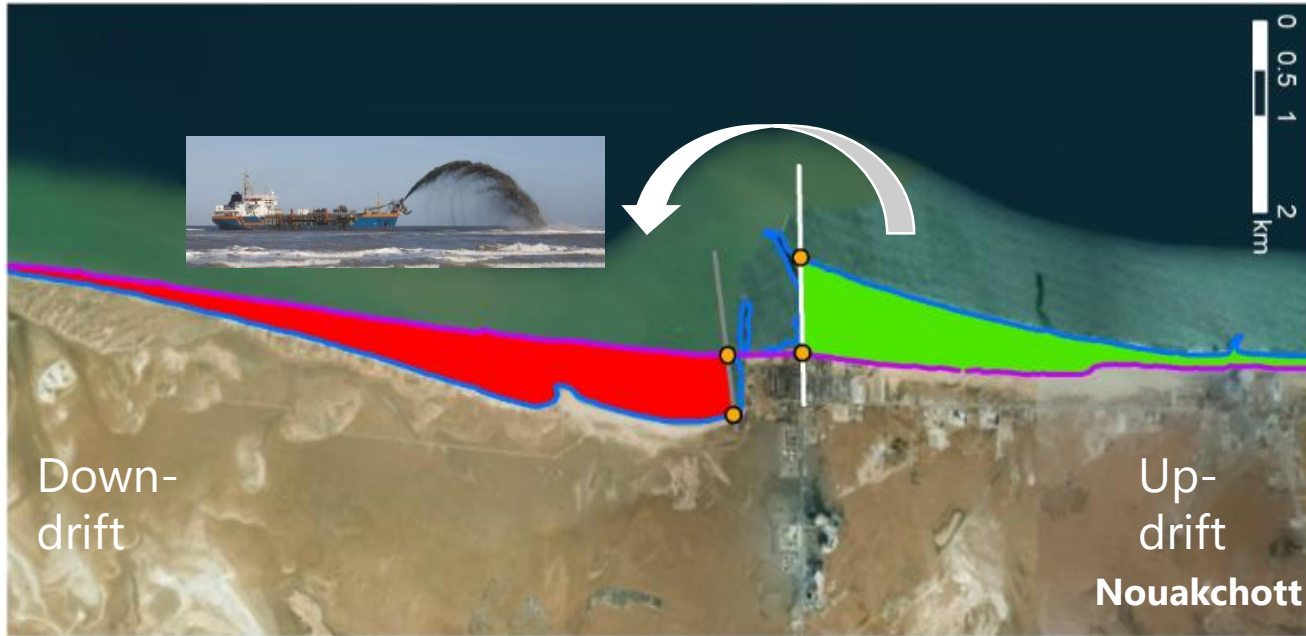
DAY 2 SHORT PRESENTATION

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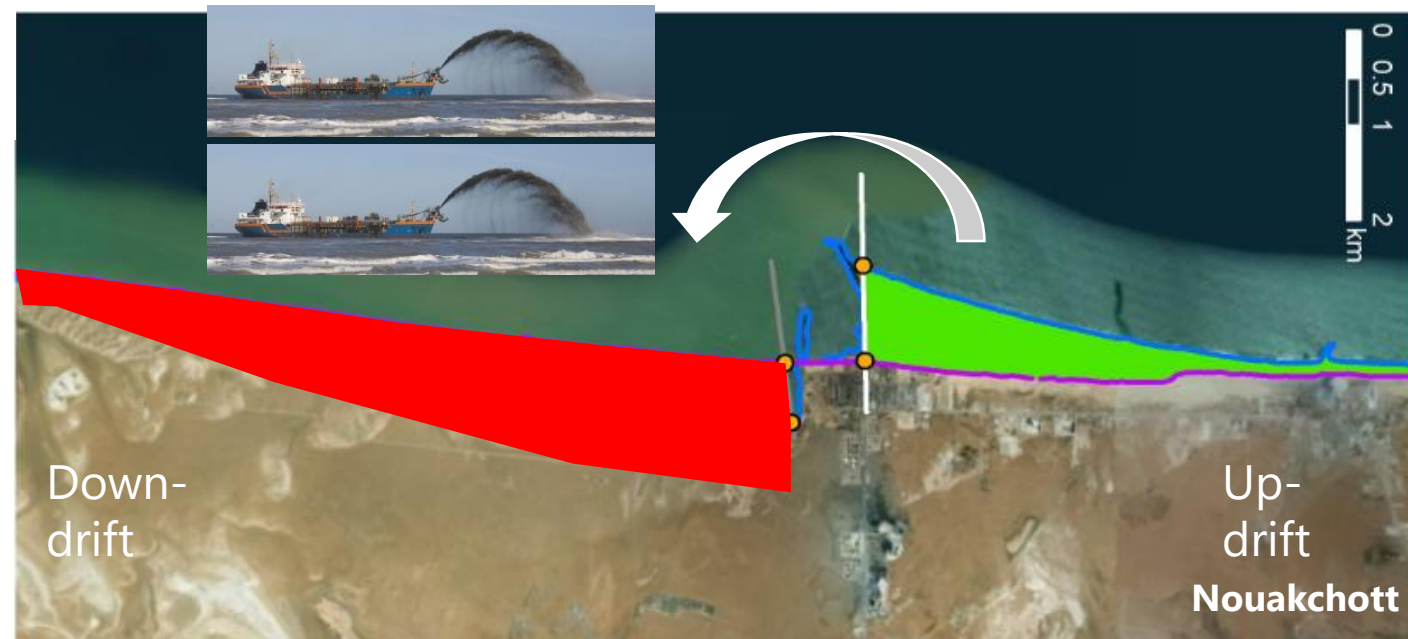
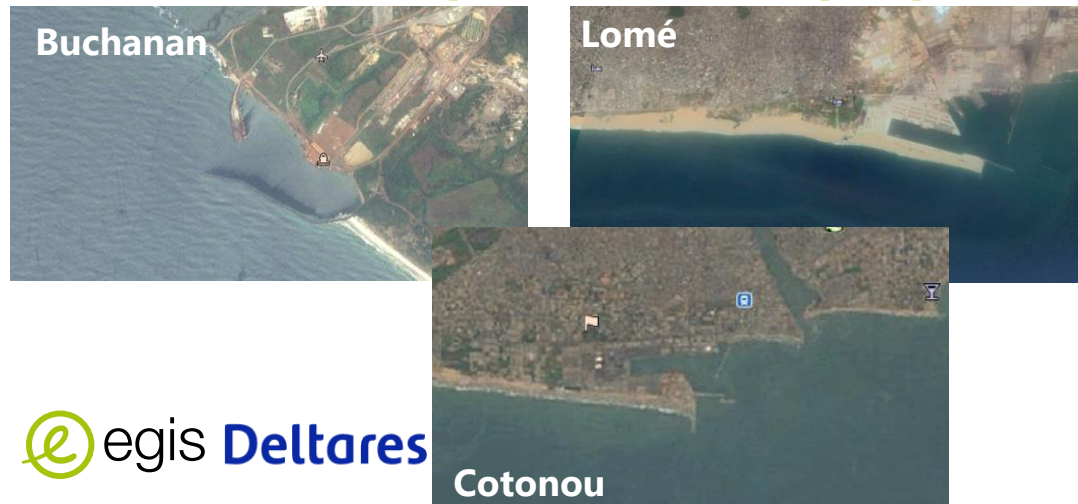
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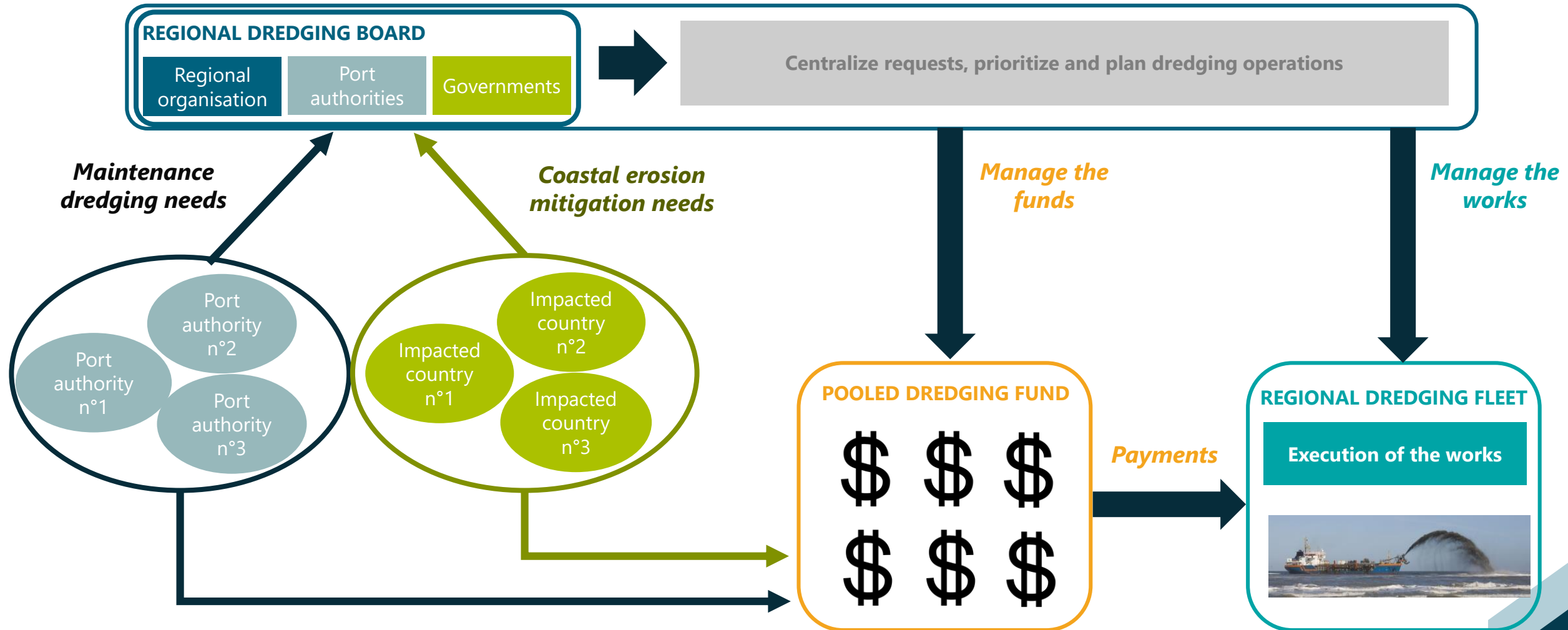


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AN INNOVATIVE GOVERNANCE & FINANCING SCHEME

...funded by a Public-Private Dredging Fund



ADDITIONAL INFORMATION

1. Video submitted during EOI phase

https://youtu.be/_MQFXlcu8Jw

2. Detailed proposal