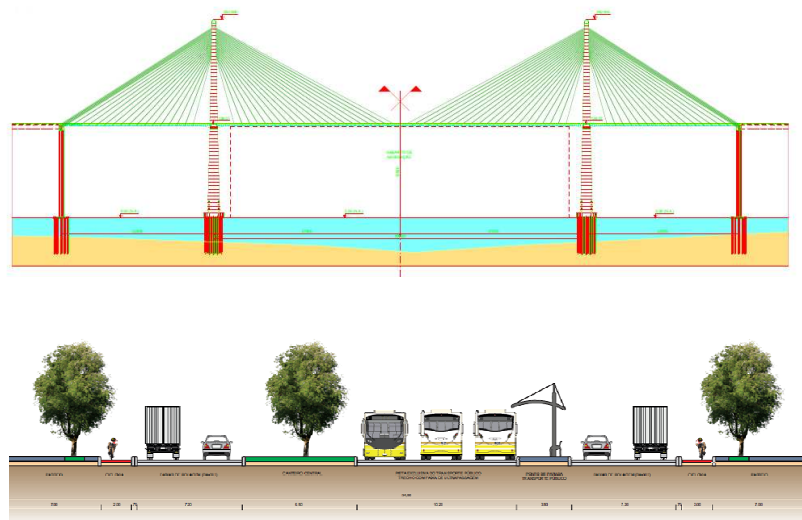




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IAIA 2015

EIA ALTERNATIVE ANALYSIS: CASE STUDIES



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1. INTRODUCTION

Alternative Analysis – key issue of EIA

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- Successful cases of **EIA Alternatives Analysis** demonstrate that this effort, when serious and profound, **has very positive effects**
- **Two examples** of good practise in this matter are:

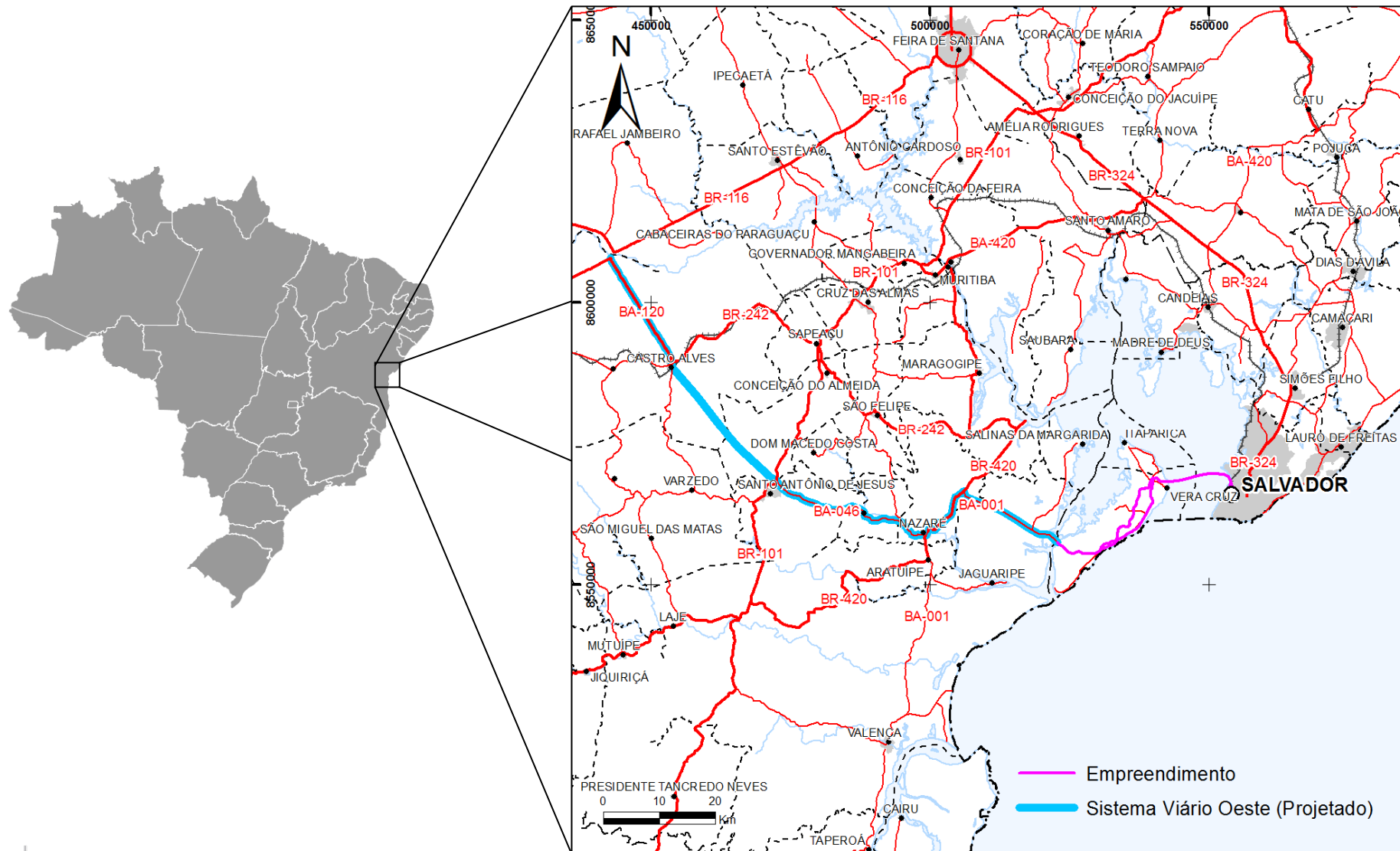
- EIA of Western Bahia Motorway System (Brazil)
- EIA of Mira Estuary Dredging Works (Portugal)

- Following the case studies presentation, a discussion is shown

2. Case Study I: Western Bahia Motorway System

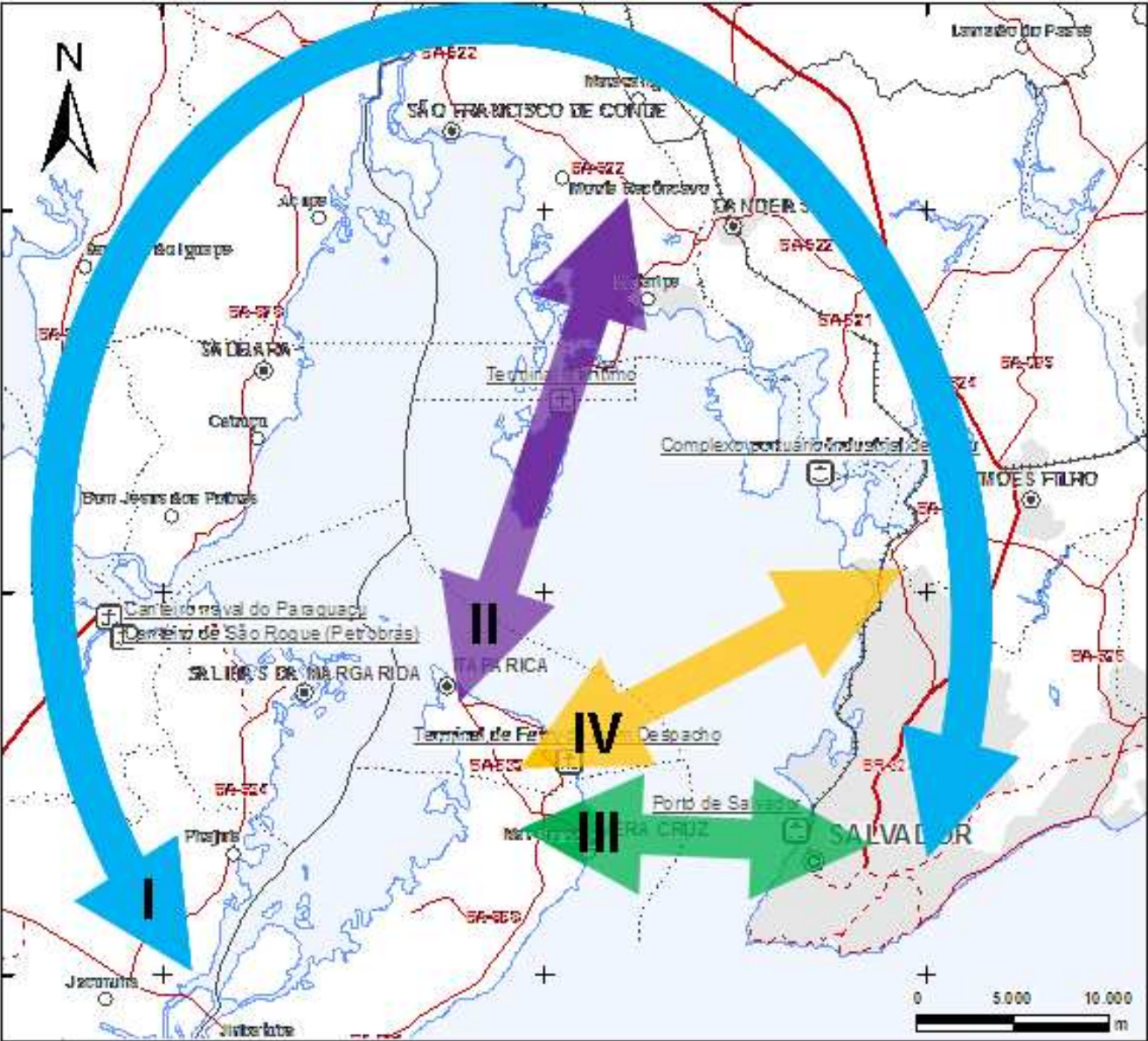
(Brazil)

Location of Bahia West Road System

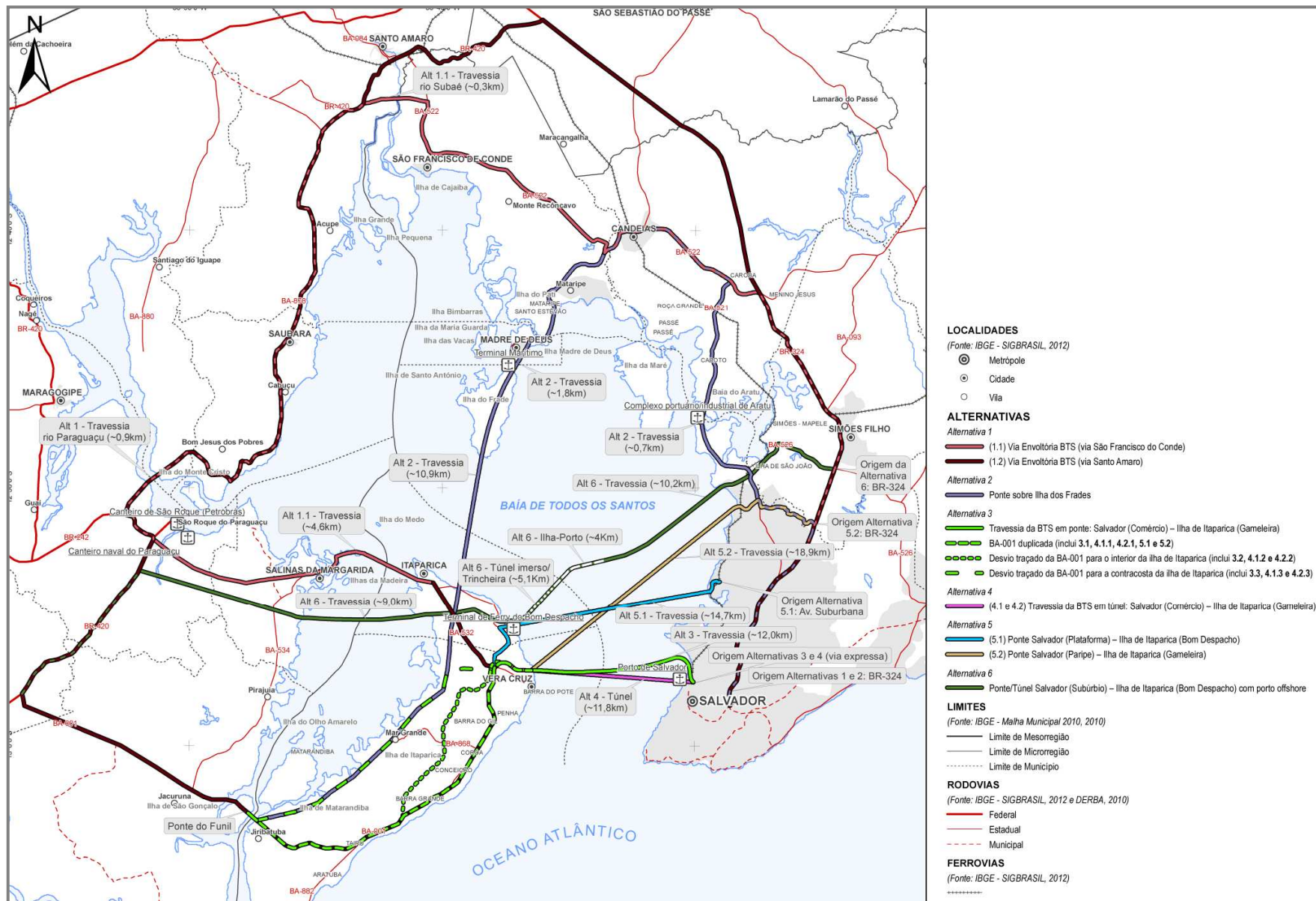


Definition of four Alternative Corridors

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Definition of 15 Locational / Technical Alternatives nemus



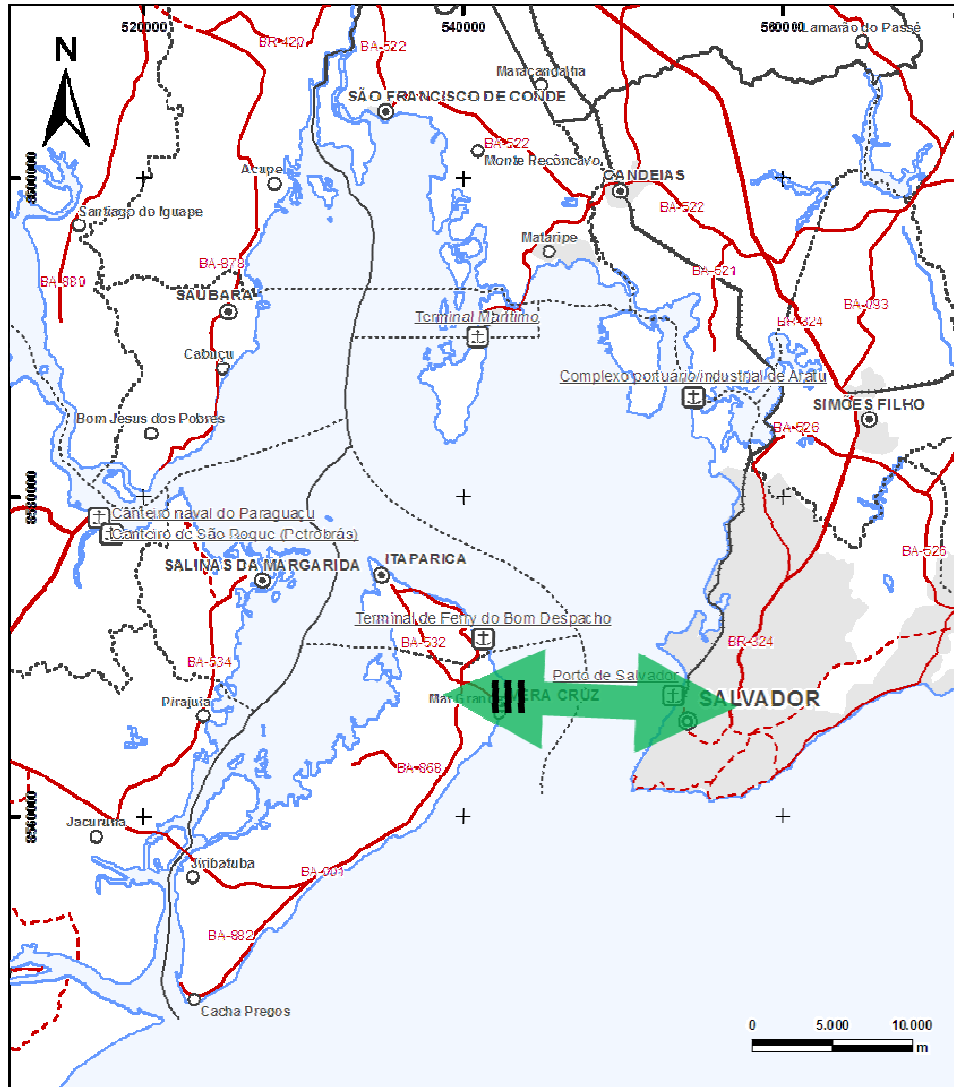
Multi-criteria selection of Corridors and Alternatives nemus ●

Corridor III

| Domain | Environmental factor | Alt. 1.1 | Alt. 1.2 | Alt. 2 | Alt. 3 | Alt. 4.1 | Alt. 4.2 | Alt. 5.1 | Alt. 5.2 | Alt. 6 |
|------------|------------------------------|----------|----------|--------|----------------------|----------|----------------|----------------|----------|--------|
| Physical | Air and Noise | | | | 3.3 | | | | | |
| | Geol./Geot. | | | | | | | | | |
| | Geomorphology | | | | 3.1 | | 4.2.1 | | | |
| | Soils | | | | 3.1 | | 4.1.1 or 4.2.1 | | | |
| | Seismicity | | | | | | | | | |
| | Surface water (quantitative) | | | | 3.1 | | 4.1.1 or 4.2.1 | | | |
| | Surface water (qualitative) | | | | | | 4.2.1 | | | |
| | Groundwater | | | | | | | | | |
| | Sediments | | | | | | | | | |
| Biological | Oceanography | | | | Alts. w/ bridge | | | Alt. w/ bridge | | |
| | Land Flora | | | | 3.1 | 4.1.1 | 4.2.1 | | | |
| | Land Fauna | | | | 3.1 | 4.1.1 | 4.2.1 | | | |
| | Aquatic Biota | | | | 3.1 (Alt. w/ bridge) | | 4.2.1 | | | |
| | Conservation Areas | | | | | | 4.2.1 | | | |
| Social | Socioeconomy | | | | 3.2 | 4.1.2 | 4.2.2 | | | |

Note: Green color indicates the preferential alternative(s) for each factor

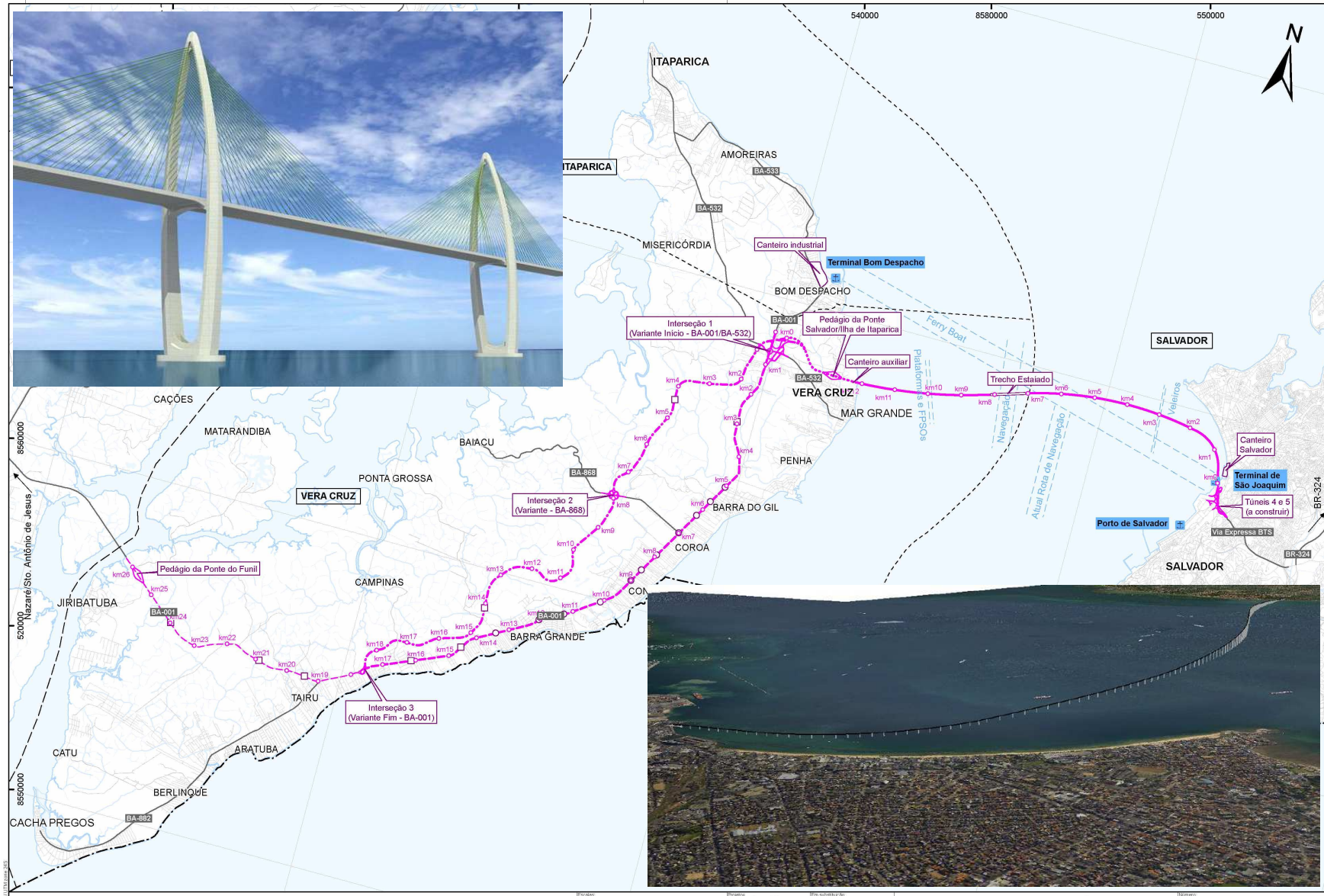
Refined Seletion of Alternatives



| Alternatives | Domain | | |
|--------------|----------------|----------------|----------------|
| | Physical | Biological | Social |
| 3.1 | Preferential | Preferential | Less favorable |
| 3.2 | Less favorable | Less favorable | Preferential |
| 3.3 | Preferential | Not advisable | Not advisable |
| 4.1.1 | Preferential | Not advisable | Not advisable |
| 4.1.2 | Preferential | Not advisable | Not advisable |
| 4.1.3 | Preferential | Not advisable | Not advisable |
| 4.2.1 | Preferential | Not advisable | Not advisable |
| 4.2.2 | Preferential | Not advisable | Not advisable |



Final configuration

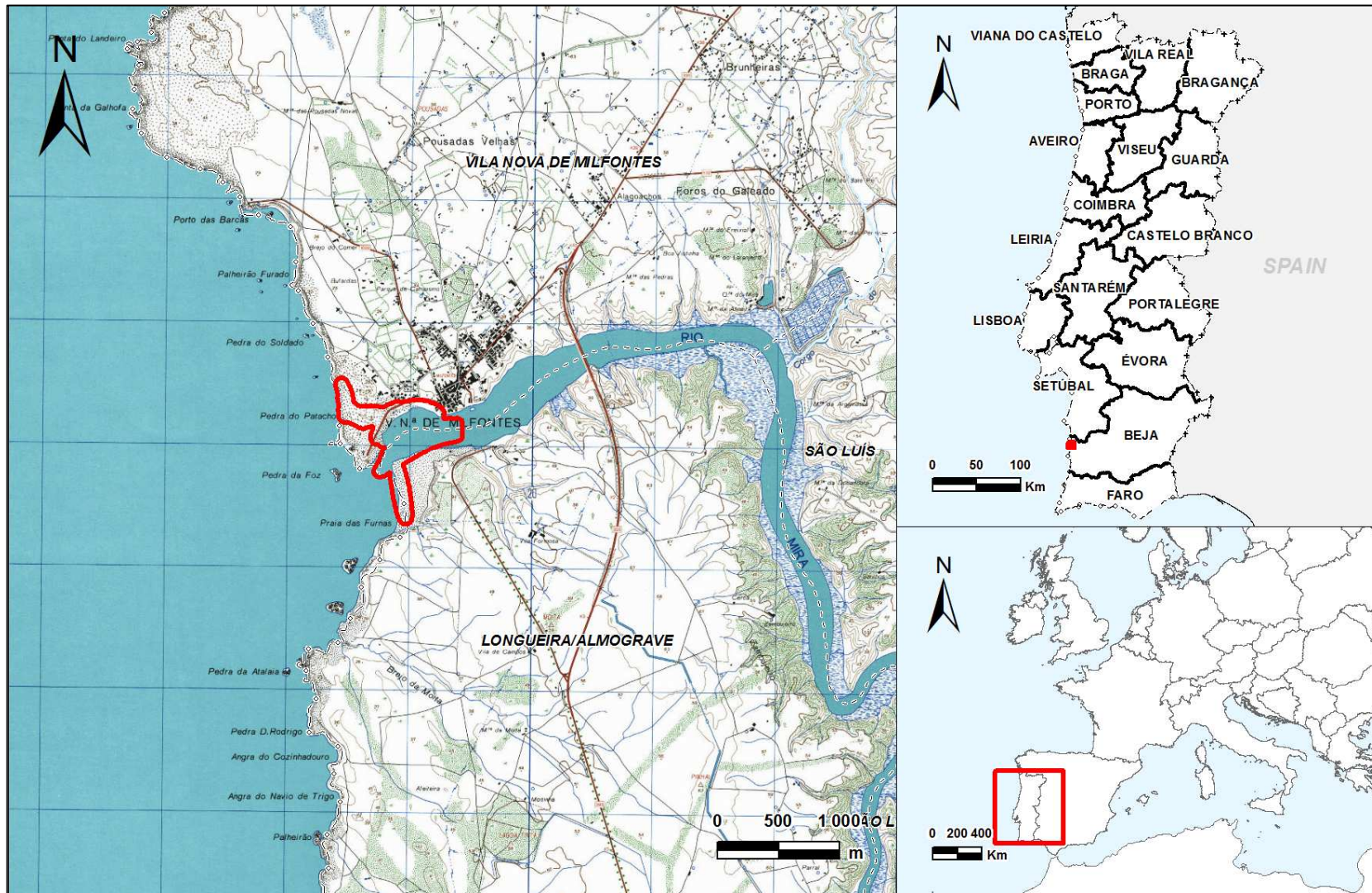


3. Case Study II: Mira Estuary Dredging Works

(Portugal)

Location of Mira River Estuary

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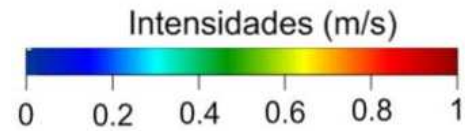
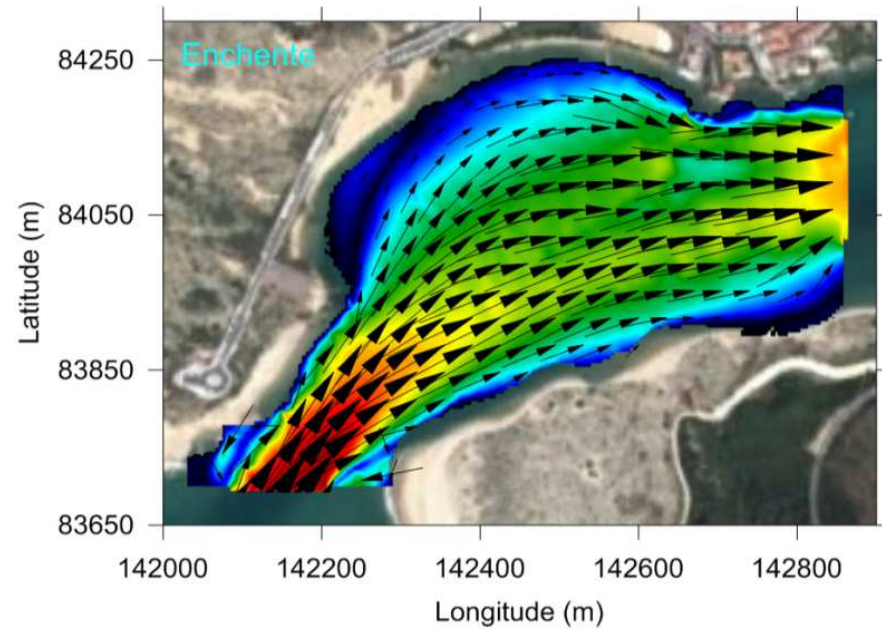
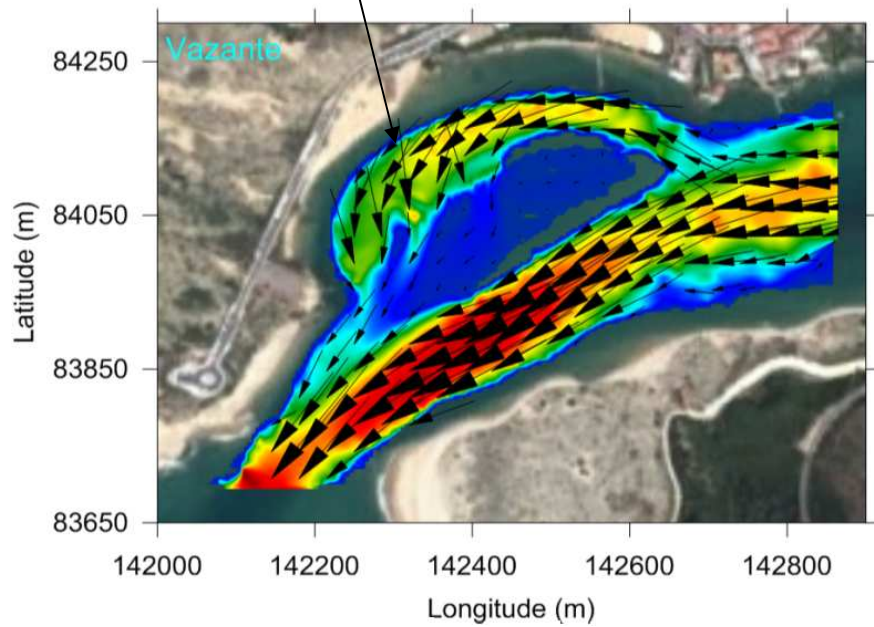
The main problem: Erosion and dune degradation nemus ●



Understanding the causes of the problem

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Strong outflow currents



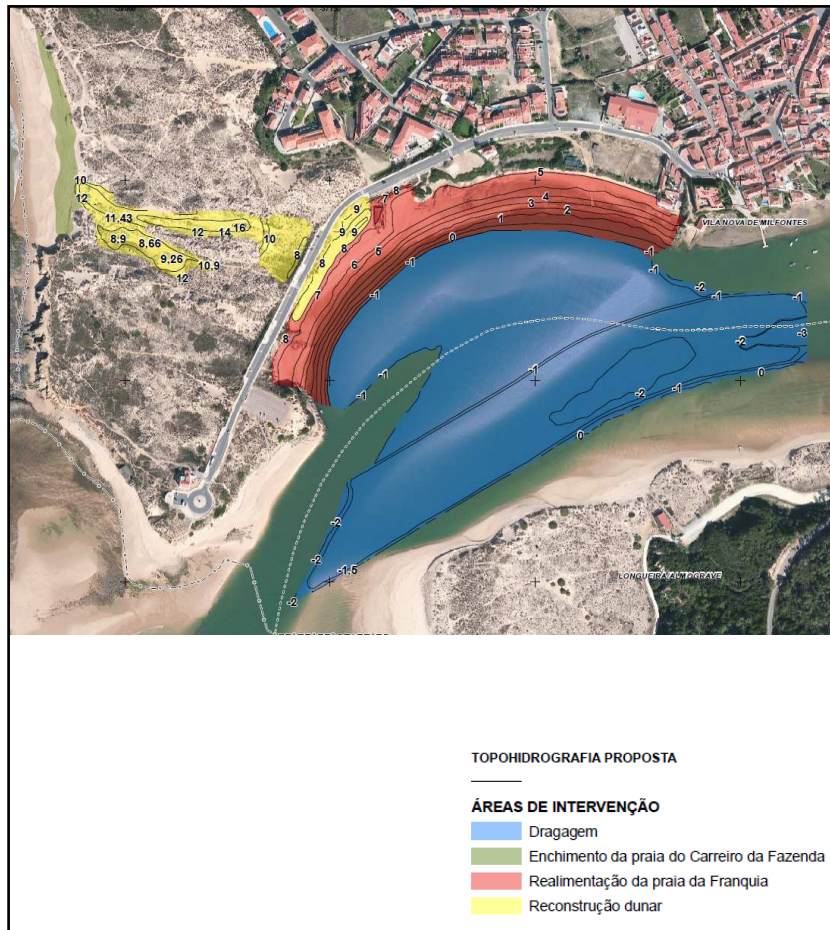
Alternative A: Dredging Works and beach rehabilitation

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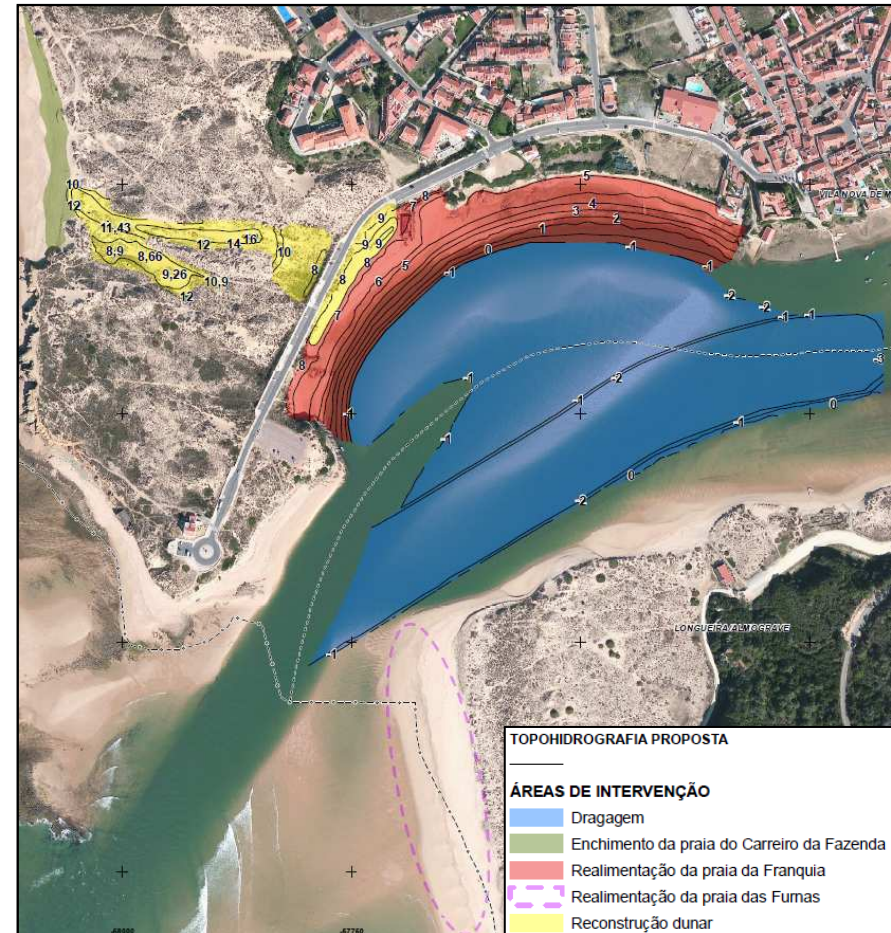


A

Alternatives B and C: Dredging Works / beach and dune rehabilitation

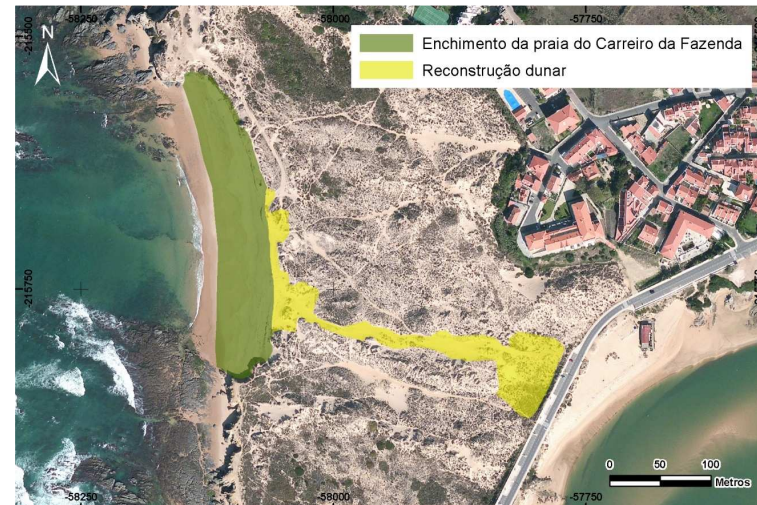


B



C

Multi-criteria analysis for the dunes rehabilitation nemus



4. Discussion

Successful cases – The exception

The shown cases demonstrate how **EIA Alternative Analysis** can:

- **minimize negative impacts**
- **maximize benefits**

However:

successful cases of detailed and participative EIA Alternative Analysis **are**, unfortunately, an **exception**

In most cases EIA Alternative Analysis is simply **not done** or is done **improperly**

Growing challenges in a world of accelerating development

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- In many countries, a **very rapid development** is observed
- The **best practise in EIA are often not followed**, particularly on Alternative Analysis
- Nemus' experience in Africa and South America has allowed to take consciousness that significant social and environmental impacts have been produced



Despite EIA process, **the best technical and locational options for most interventions are not chosen**

Need for new approaches in the future

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- National governments
- Multinational organizations and
- Financial institutions

Should give more attention to the process of **Alternative Analysis** as a **critical tool** in the EIA process



THANK YOU!

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