

On the road to Biarritz and Liverpool

A guide for YPCC student cases

by

Robbert Misdorp

YPCC Initiator;

CCC Production: Initiator, Editor en Co-author;



A helping hand in seven steps

A guide for student cases on the road to Biarritz and Liverpool

1. LITTORAL 2016, Biarritz, France, 25-29 Oct.
2. Your case study area
3. Impacts of Global Changes
4. Analyses of impacts and risks
5. Adaptive response strategies: RAP
6. ICZM approaches
7. Examples of student cases 2012



1. LITTORAL 2016 - Website



The deadline of abstract submission is postponed to the **4th of April**
but please send your abstract as soon as possible to help the work of the scientific committee

We will accept abstracts **until the 4th of April** to take account of some late demands

Foreword

Littoral 2016 "The changing littoral. Anticipation and adaptation to climate change" is the 13th conference of the traditional biennial international event of the Coastal & Marine Union (EUCC). This NPO/NGO was founded in 1989 to promote coastal conservation and sustainable development. It wanted to bridge the gap between scientists, environmentalists, site managers, planners and policy makers. It is presently the largest network of coastal experts in Europe with 15 national branches and several regional offices (the last one "EUCC-Centre Atlantique" was created in 2015 in Biarritz). EUCC-France, the French branch, is proud to organize this conference in Biarritz.

Littoral 2016 will focus on the necessary adaptation and anticipation of coastal management to global change. It concerns the shoreline mobility but also the biodiversity response, in a context of increasing human pressure in coastal areas. It is important to anticipate the natural shoreline mobility in any management strategy. A "good" strategy considers the long term evolution and not the short term profitability, an idea somewhat difficult to impose not only to policy makers and managers but also to a wide part of the population.

In any case, the first step to choose the good management strategy in coastal areas is to have a good knowledge of natural processes and take into account the socio-economical and political context as well. Nothing can be done properly if the population does not feel concerned and is not correctly informed and aware of the main stakes. The goal of Littoral 2016 is to take stock of the current knowledge, new tools and approaches and also to emphasize the lack of knowledge in some cases and propose new research areas.

General info

[Foreword / Avant-propos](#)

[Deadlines and prices](#)

[Provisional programme](#)

[KeyNOTE speakers](#)

[Scientific committee](#)

[Partnership](#)

[Organizing board](#)

[Registration](#)

[Abstract submission](#)

Travel & Accommodation

[Biarritz tourisme](#)

Contact:

EUCC France /

LITTORAL-YPCC WORKSHOP SESSION

‘Preparing to Adapt’ with Young Professionals

Convenors:

Maria Ferreira, Robbert Misdorp, Andre Dijkstra

The coastal zones are subject to great and fast changes.

One of the messages of the ‘Climate of Coastal Cooperation’ production (www.coastalcooperation.net) is that sharing experiences and increased capacity building are essential in addressing these rapid changes.

This has led to the creation of the Young Professionals’ Coastal Community – the YPCC initiative, familiarising students with ICZM concepts and tools. Involving young professionals from Universities (of Applied Sciences) was successfully demonstrated during the Littoral 2012 and 2014 conferences (YPCC Brochures 2013 and 2015: www.ypcc.eu).

You are welcome to participate in the session ‘**Preparing to Adapt**’, where students from the North Sea, Wadden Sea and the Bay of Biscay will present their cases sharing their vision on the long term coastal development in ‘their’ particular coastal area.



2. Choose your case study area:

- **Several kilometres long and wide
on land and in the sea –
coinciding with administr. boundaries**
- **Several functional uses**
- **Susceptible to global change processes**



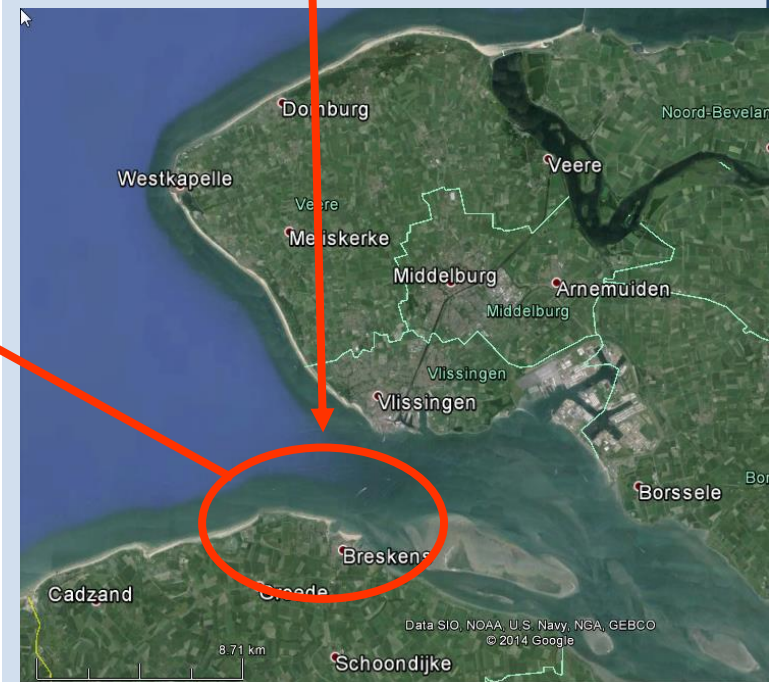
The choice of Vlissingen students

Waterdunen Plan area:

Coastal issues: coastal defence, nature, recreation



Waterdunen Spatial Plan, bureau VHP (commissioned by Province Zeeland), Rotterdam, 9 oktober 2009.



Leeuwarden students:

Ems-Dollard estuary coast:

Functional Uses: coastal protection, settlements, agriculture, gas production, nature recreation



Download the full student report from the YPCC website:

http://ypcc.eu/wp-content/uploads/2013/07/HKZ22_Report.pdf



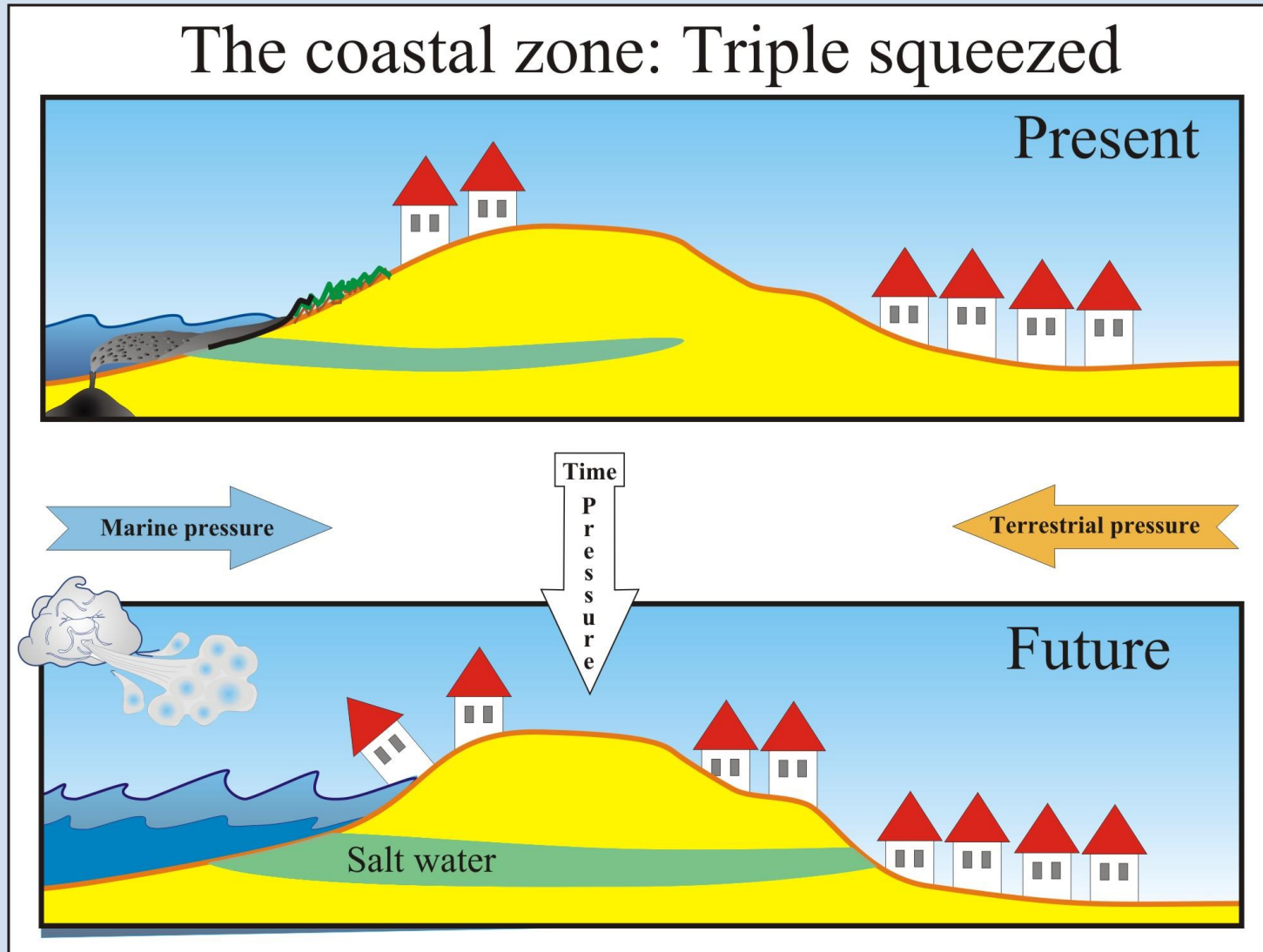
3. Three drivers of Global Changes

- **Population growth,**
- **Economic growth,**
- **Impacts of Climate Change:**
 - SLR/21th century: 0.3, and 1.5 m,**
 - 10% more storm surges**

**Analyse the coastal changes via
scenarios in
a coherent, integrated manner**



Pressures on the Coastal Zone



CCC Chapter III-1 PDF : <http://www.coastalcooperation.net/part-III/III-1.pdf>

4. Analyse impacts and risks

YPCC

Definition of Risk:

Risk of hazards = Frequency x Damages

Climate Change - SLR : increases flooding frequency

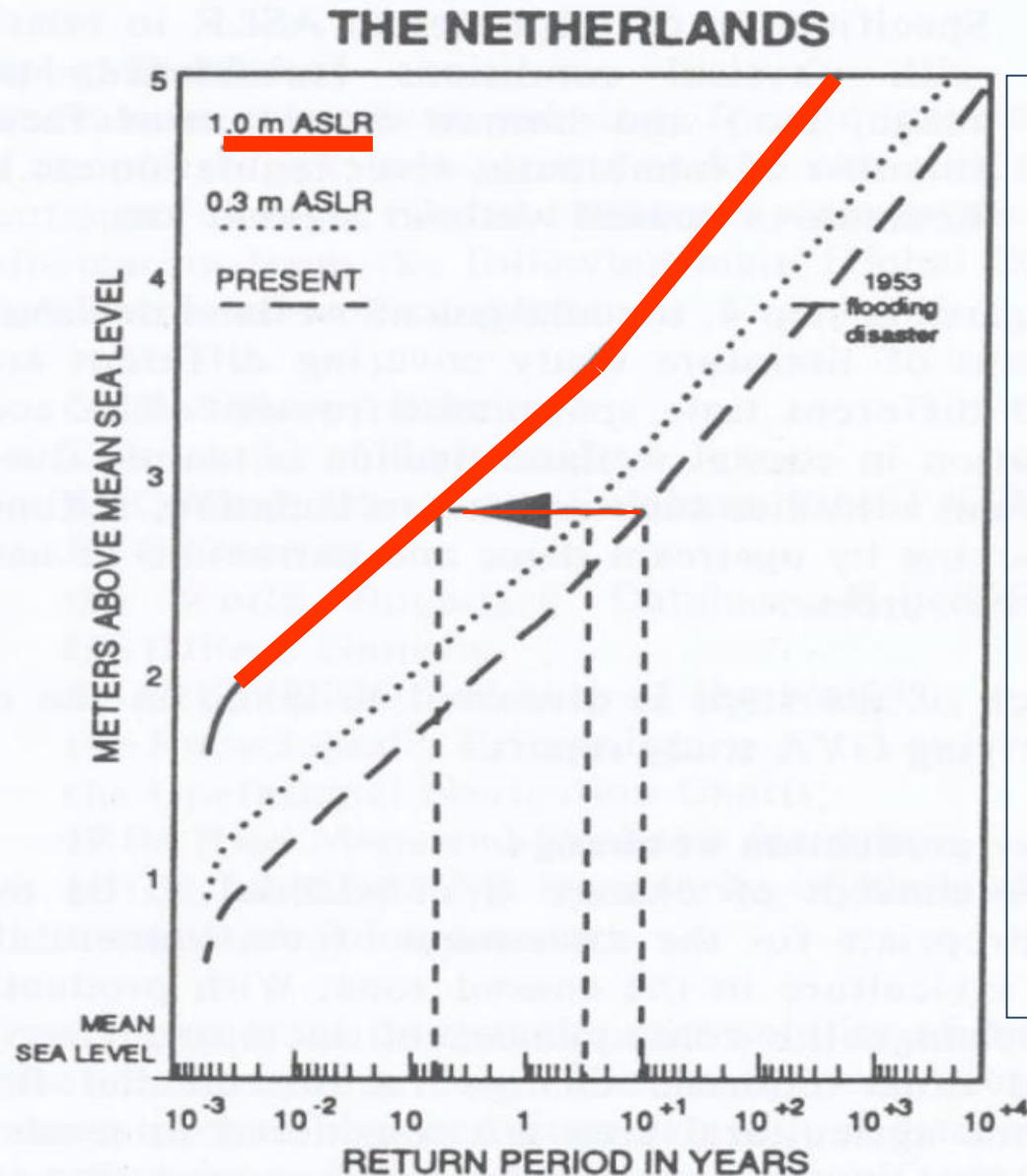
Population growth : increases potential loss of lives

GDP growth : increases capital investment at risk

Future risks of flooding will strongly grow



Frequency of the occurrence



SLR increases the Flooding frequency

2.9m Waterlevel occurrence:

- Present: once in 10 years
- 1.0 m SLR: 6 times per year

= a factor 60 increase

Risk equation term:

Damage and people at risk increase in time

In the Netherlands' coastal zone: 1951 - 2011

Population

Houses

Growth factor

1.6

3.6

Value of houses

GDP/capita

Growth factor : **16**

4.5

The capital investment amounts to **5 Trillion €** in Holland - 2010

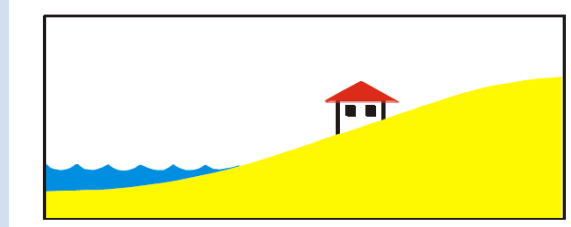
Conclusion :

The Damage term has increased enormously in the past and will continue in the future.

The Risk of flooding will increase in the future even
ccc much more**TIME FOR ADAPTATION!**

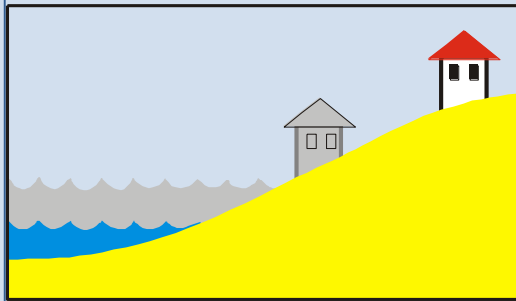
5. Three Coastal Adaptive Strategies:

R A P



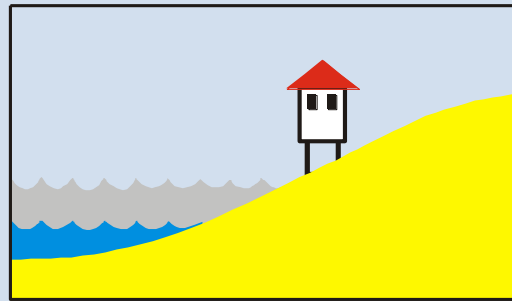
Current situation and sea level

RETREAT



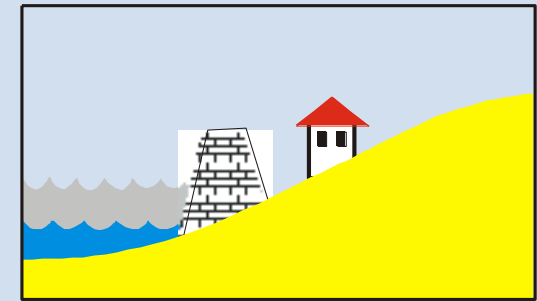
Establish building setback codes

ACCOMMODATE



Regulate building development

PROTECT



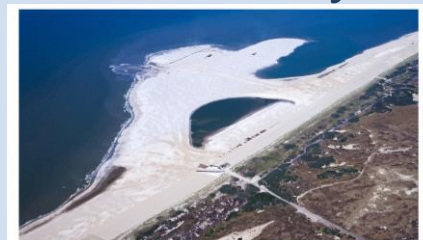
Protect coastal development

Future adaptive responses with sea level rise (IPCC, 1992)



Choose resilient, win-win, no-regret, adaptive coastal measures:

- Sand nourishments: yearly or once in 20 years?



- Conservation/rehabilitation of coastal vegetation:



increases:

Safety against flooding & erosion,
Income by tourism

Providing some more space for coastal and river dynamics



Room for the rivers: <http://www.ruimtevoorderivier.nl/meta-navigatie/english> ;

CCC: www.coastalcooperation.net ; Delta programme: <http://www.deltacommissaris.nl/english>



6. ICZM approaches:

- **Consider all three main drivers of Global Change**
- **Create win-win, sustainable solutions,**
- **Design no-regret, resilient, adaptive measures,**
- **Think long term: prepare coastal measures for
2050 and 2100,**
- **Think about legal and institutional arrangements.**



Characteristics of ICZM - Integrated Coastal Zone Management

ICZM aims to develop coastal resources in sustainable way

• ICZM is balancing and pays simultaneously attention to :

horizontal	<u>and</u>	vertical integration,
national	<u>and</u>	local levels,
governmental	<u>and</u>	NGO's interests,
science	<u>and</u>	policy,
development	<u>and</u>	environment,
short	<u>and</u>	long term processes.

ICZM programmes provide: **Eco**-nomic and **Eco**-logic benefits:

**ICZM creates sustainable win-win situations,
through integrated approach.**



7. Two examples of YPCC student cases

Quantitative analyses of impacts & identification of adaptive measures:

1. Eems-Dollard, VHL student case, 2012

2. Waterdunen, HZ student case, 2012



1.Eems-Dollard – Groninger coast

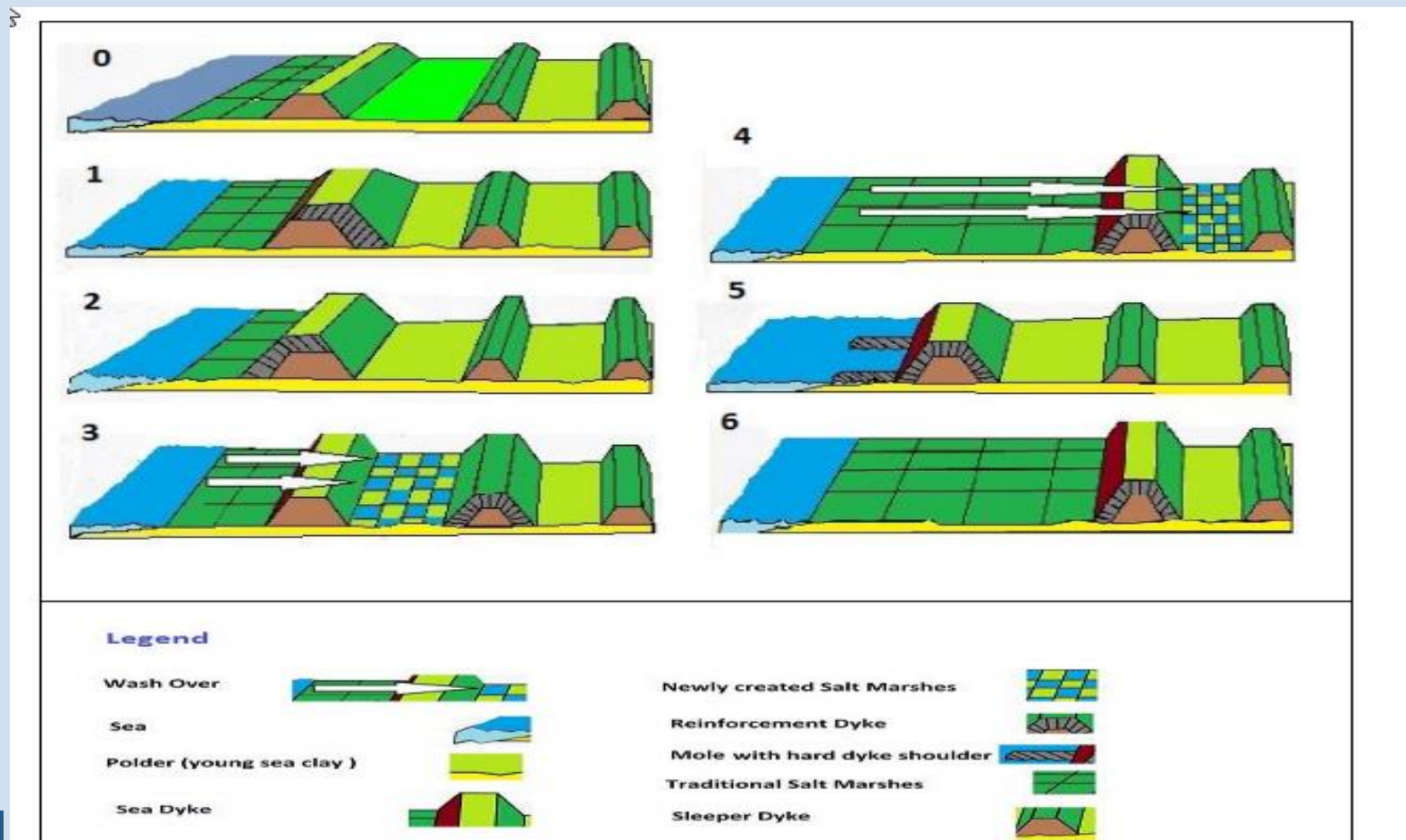
Issues:

Presence of one of world's largest natural gas reserve (2.800 billion m³),
Increased flooding risks will effect the
safety of inhabitants, gas, export, economic development, nature,
capital investment, agricultural production, ground water quality.



Eems-Dollard – Groninger coast

The VHL Students examined the level of **increased flooding risks** & identified series of **adaptive coastal protection** solutions:



Waterdunen, SW Netherlands

Issues:

Coastal reinforcement in integrated fashion:

Creating dunes strengthening the dikes, sea water intrusion, man-made intertidal areas, increasing natural & recreational values, protecting surrounding agricultural grounds from salt water !



What will be the future development of this innovative win-win solution?

Students made a fascinating role play highlighting their views on Waterdunen in the year 2030

Summarising Pointers for your case:

- **Choose a multiple-functional** coastal study area
- **Consider the three drivers of change:**
Economy, population and impacts of CC
- **Analyse the impacts** of these drivers as values at risk, change or at loss for 2050 and 2100
- **Choose the best strategy** for adaptation
- **Focus on integrated win-win approaches**



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Guidance: by your teachers, and Joop Marguenie,
Andre Dijkstra and me

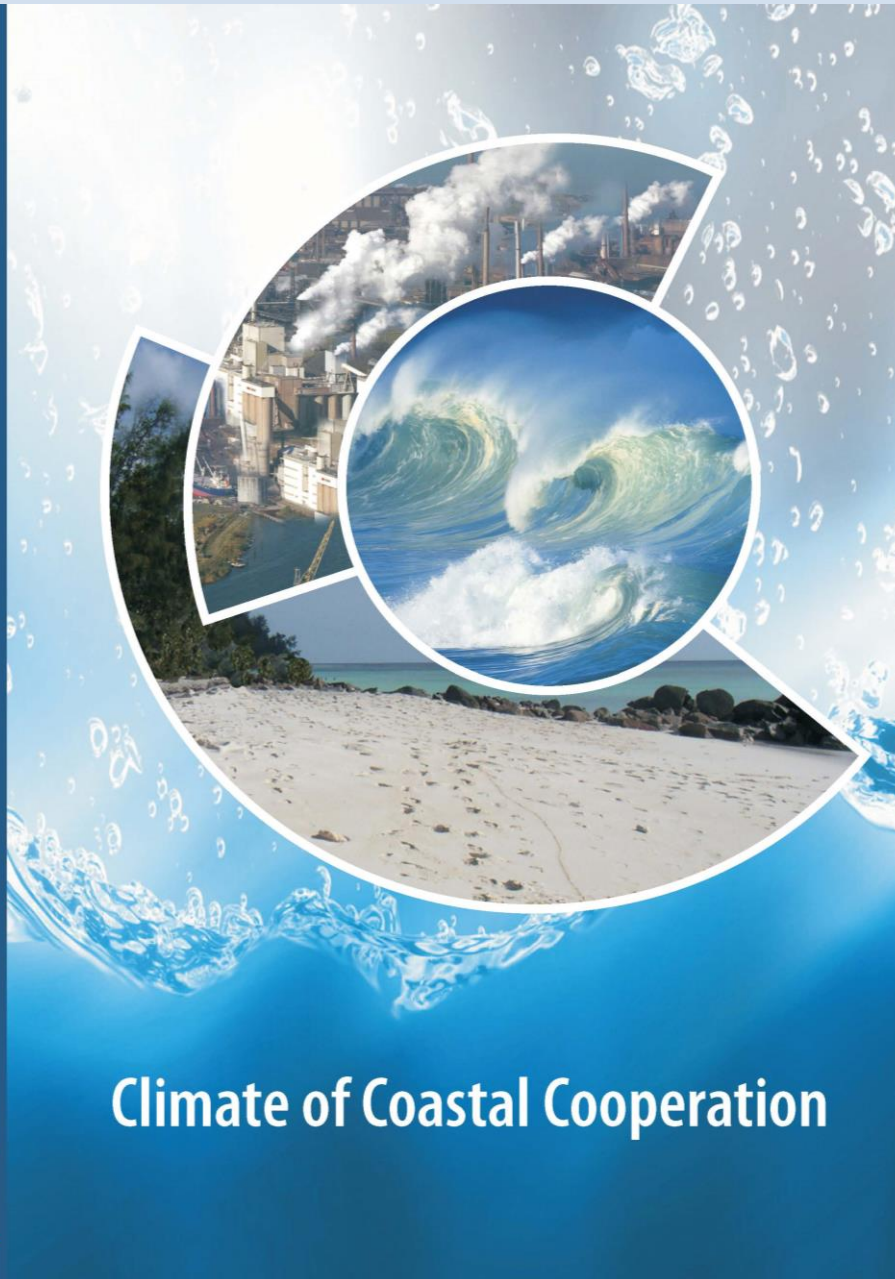
Contact: Rob Misdorp: climecoast@gmail.com

Look for examples of coastal adaptation in:

Climate of Coastal Cooperation: www.coastalcooperation.net
Young Professionals Coastal Community: www.yppc.eu
Dutch Delta Programme: www.deltaprogramm.nl

**Wishing you success and seeing some of you in
Biarritz, 25-29 October 2016 or in
Liverpool, September 2017**





Climate of Coastal Cooperation

CCC Production:

Book (208 p)

+

Internet Publication (> 900pages)

Intro's by high level executives;

33 Cases from Europe and Asia;

7 Interactive GIS based
Training Tools & Manuals;

8 Examples of innovative,
adaptive coastal measures;

101 International co-authors with their
e-mail Addresses.

