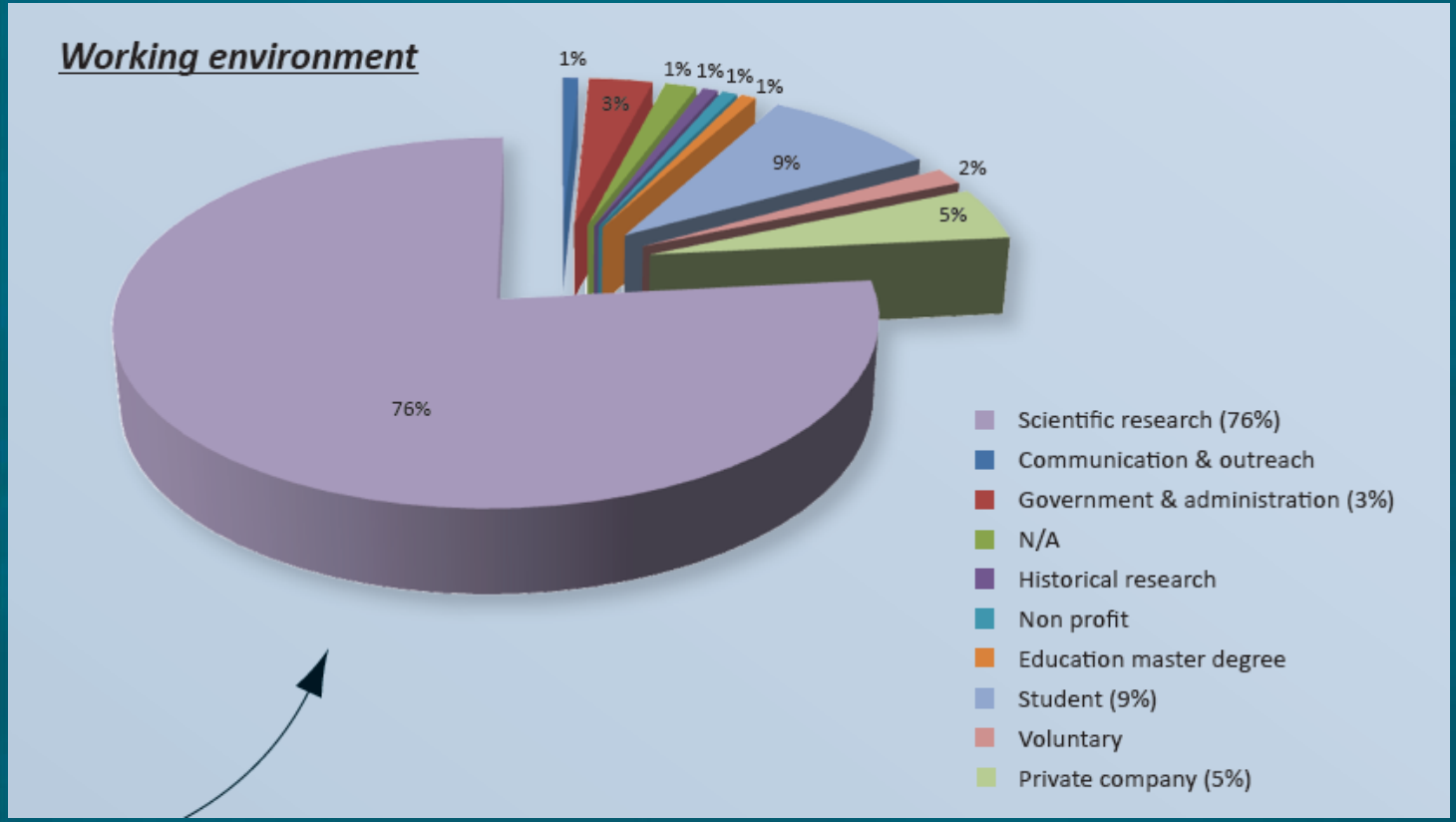
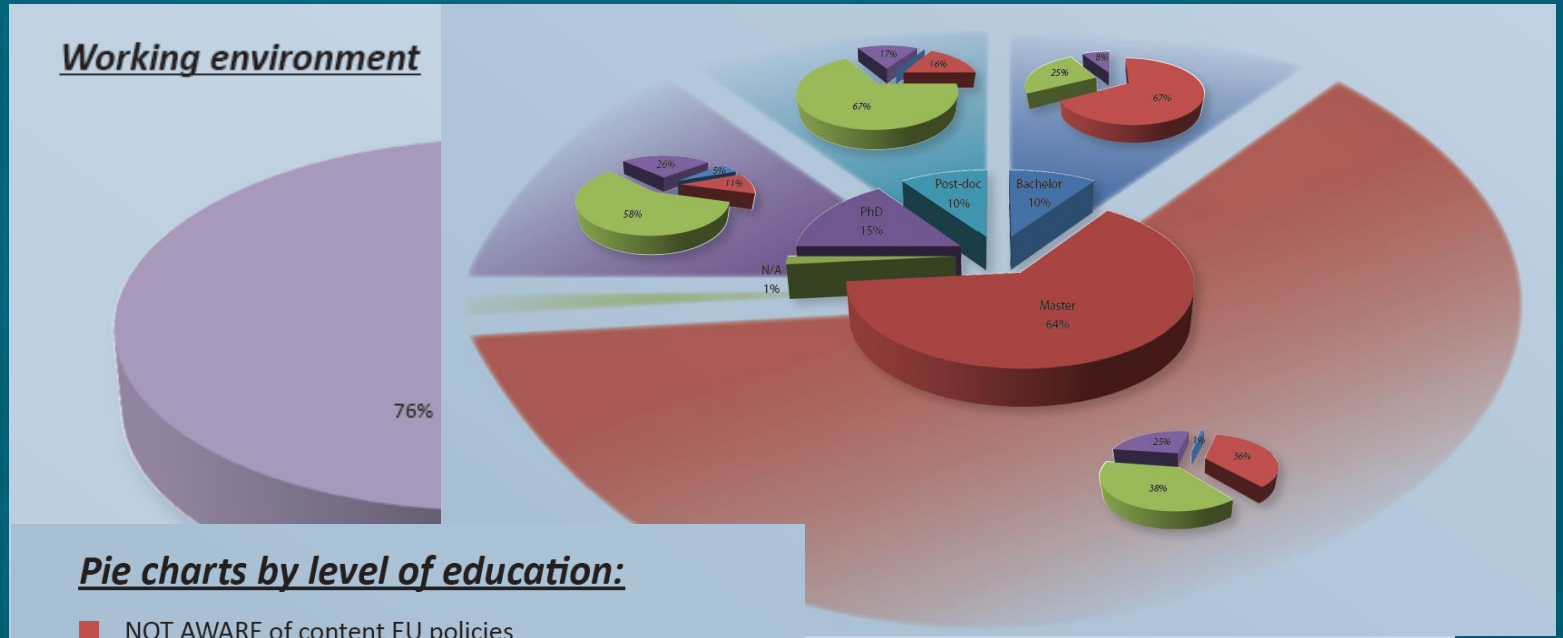
Compendium for Coast and Sea

Launched 14/11/2013 – Flemish Parliament

VLIZ Young Marine Scientists' Day 2012



VLIZ Young Marine Scientists' Day 2012



Pie charts by level of education:

- NOT AWARE of content EU policies
- YES, well aware of content EU policies and these have direct impact on my professional activities
- YES, well aware of content EU policies and these have no direct impact on my professional activities
- N/A

VLIZ Young Marine Scientists' Day 2014

Student: Looking for reliable information on broad range of marine/maritime fields for your thesis?

PhD student: Need an overview of the marine research in Belgium? Who does complementary research? Cooperation?

Post-doc: How can my research reach decision-taking level?

Young professional: Need quick access to updated & validated info services from multiple disciplines and sectors?

Compendium for Coast and Sea

An integrated knowledge document about the Coast and Sea in Flanders and Belgium

Integrating disperse information

Ecological information
(characteristics of coast and sea, impact on the environment, etc.)

Socio-economic figures
(use of the coast and sea, employment & turnover of marine sectors, etc.)

Institutional & legal information
(competent authorities, governance of coast and sea, policy instruments, etc.)

Overview Belgian Marine Research

VLIZ

Factsheet Compendium for Coast and Sea

Aim:

- Aggregate information & data Belgian marine research
- Increase visibility and accessibility of marine research

Focus:

Belgian part of North Sea, adjacent coastal zone & estuaries in international context

Target group:

Marine experts (policy, science, industry & innovation)

Factsheet Compendium for Coast and Sea

VLIZ

Compendium for Coast and Sea

Three building blocks:

1. Belgian marine research

2. Use of coast and sea

3. Marine science policy - interface

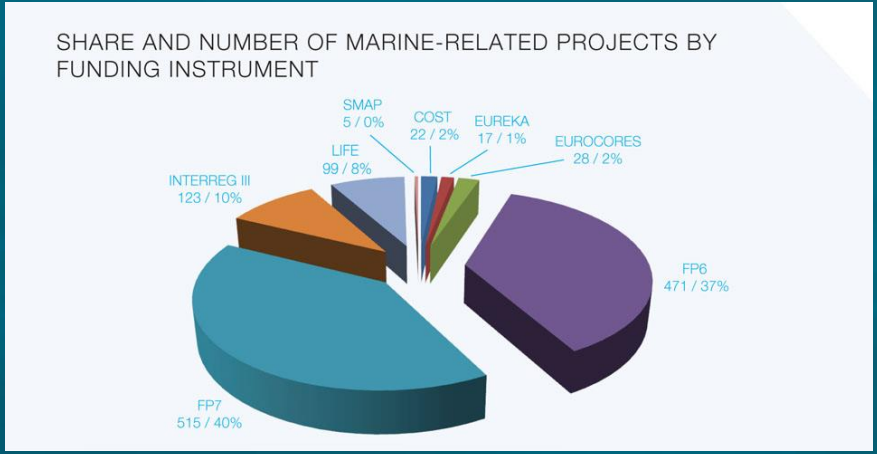
+ derived products & publications

1. Belgian Marine Research

Henk van der Meer 2006

1. Belgian Marine Research

- Policy context for research & innovation
- Overview of funding instruments for research
- *International, European & national level*



RESEARCH FUNDING AND FUNDING SOURCES

Funding by Universities

- *Bijzonder Onderzoeksfonds* (BOF), for the funding of fundamental scientific research
- Industrial Research Fund (IOF) for linking strategic fundamental research, technological innovation and industrial co-operation

International-European

- European Framework Programmes FPs and Horizon2020
- Programmes of the Directorates-General of the European Commission: EMFF, ERDF, EUREKA, etc.
- Flanders-UNESCO Science Trust Fund (FUST)
- International Foundation for Science (IFS)

Flanders

- Research Foundation Flanders (FWO)
- Agency for Innovation by Science and Technology (IWT)
- The Hercules Foundation for funding research infrastructure
- The Policy Research Centres - Flanders
- Institutional resources of the Flemish scientific institutes
- Department of Economy, Science and Innovation (EWI)
- The RV Simon Stevin (VLOOT)

Federal

- Belgian Science Policy (BELSPO)
- Research programmes (SSD, BRAIN-be, STEREO, Interuniveristary Attraction Poles (IAP))
- The RV Belgica (BELSPO)
- Other funding by the federal government

1. Belgian Marine Research

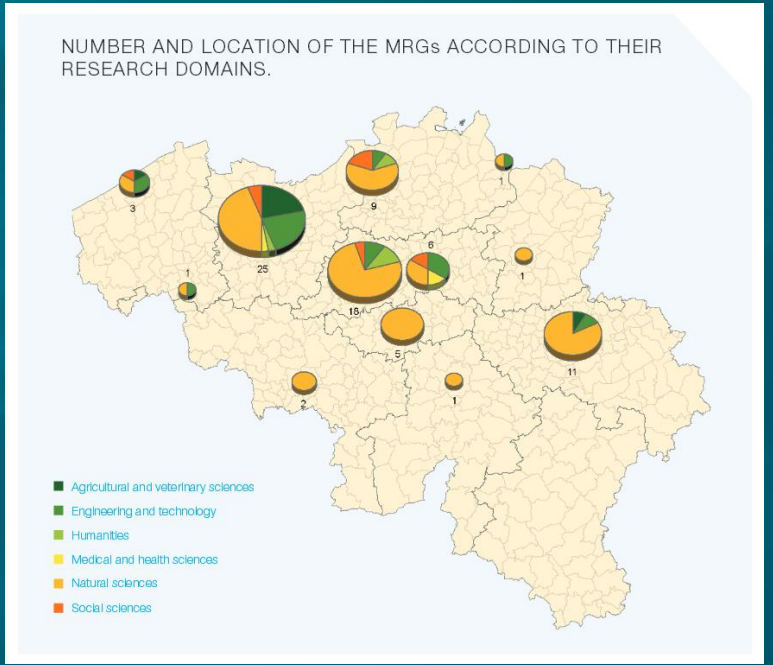
Marine Research in Flanders/Belgium

- History of marine research
- 82 marine research groups
- > 1.000 marine researchers
- Broad range of expertise
- Significant scientific output
- **International character**

1. Belgian Marine Research

Marine Research in Flanders/Belgium

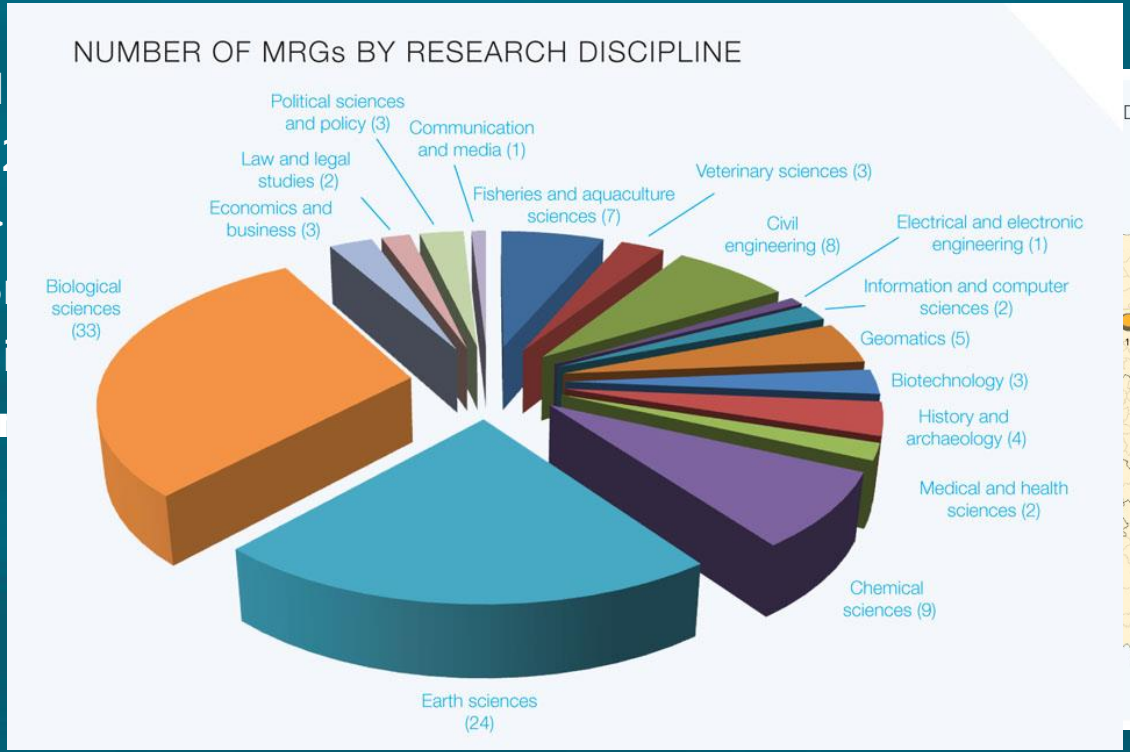
- History of marine research
- 82 marine research groups
- > 1.000 marine researchers
- Broad range of expertise
- Significant scientific output
- **International character**

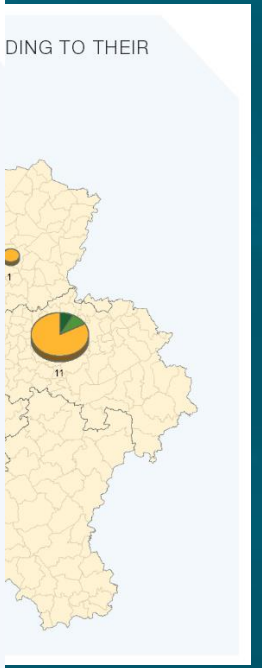


1. Belgian Marine Research

Marine Research in Flanders/Belgium

- H
- 8
- >
- B
- S
- **I**

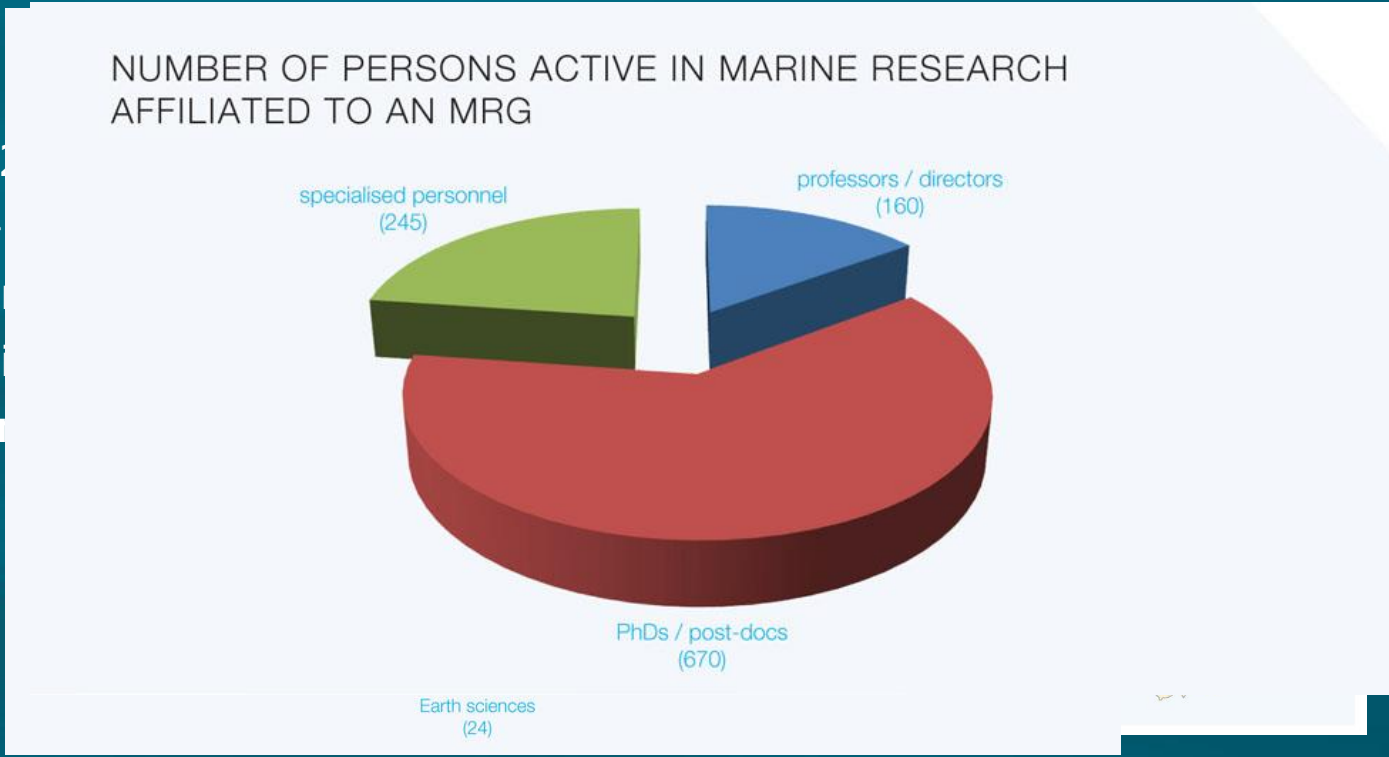




1. Belgian Marine Research

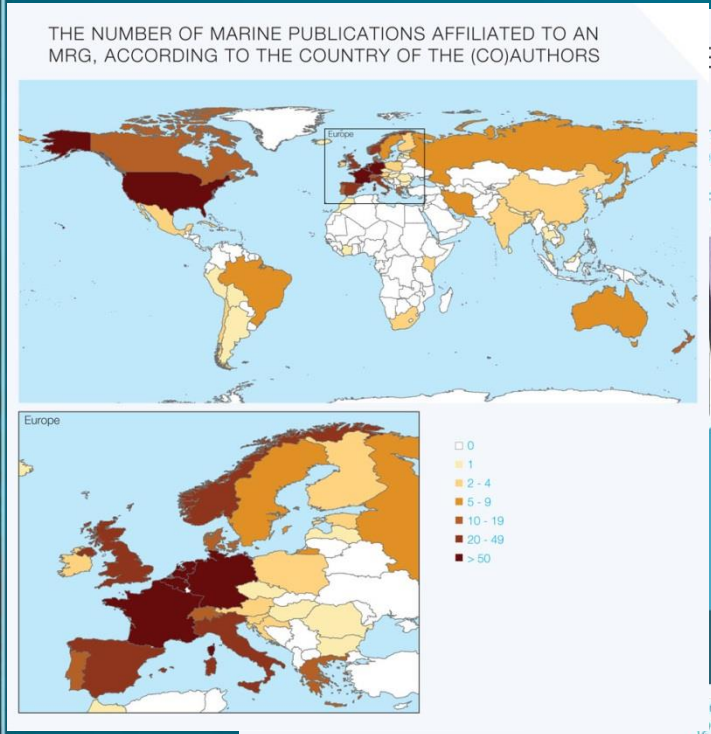
Marine Research in Flanders/Belgium

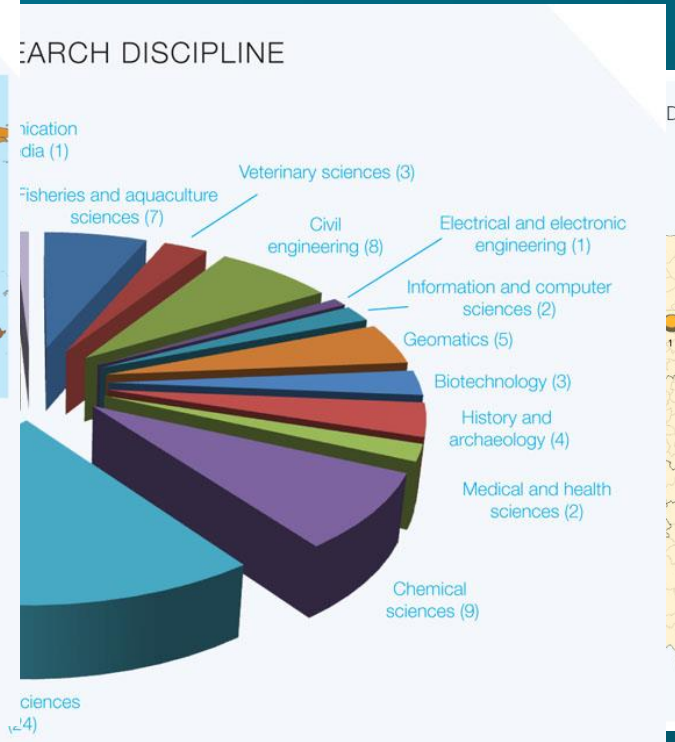
- H
- 8
- >
- B
- S
- **I**

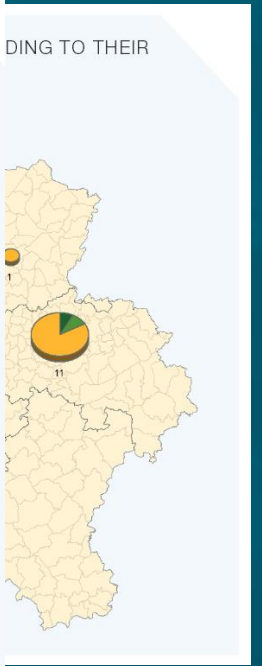


1. Belgian Marine Research

Marine Research in Flanders/Belgium



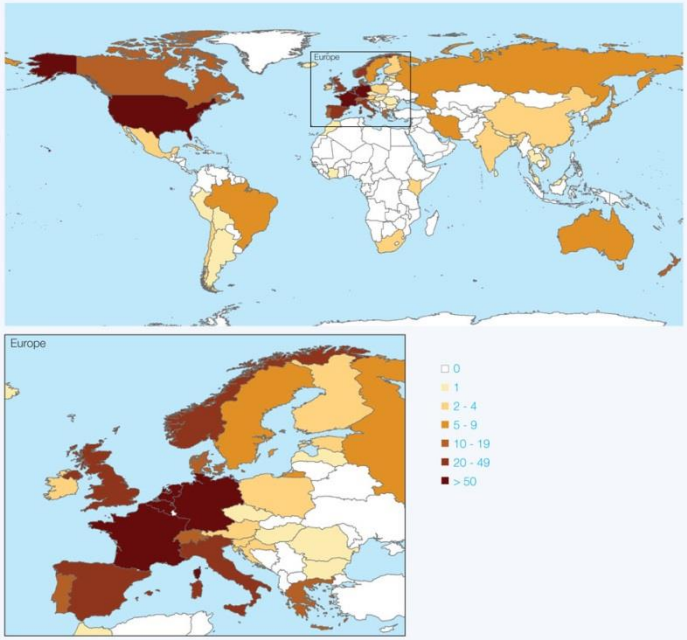




1. Belgian Marine Research

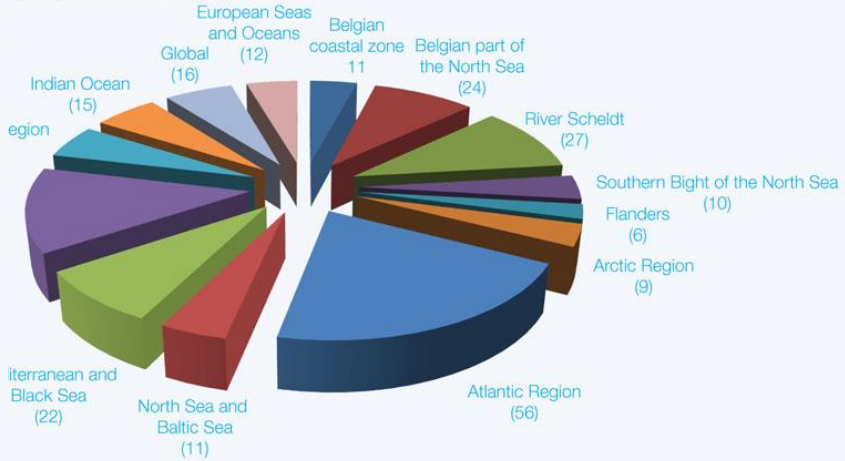
Marine Research in Flanders/Belgium

THE NUMBER OF MARINE PUBLICATIONS AFFILIATED TO AN MRG, ACCORDING TO THE COUNTRY OF THE (CO)AUTHORS



EVIEWED PUBLICATIONS IN THE BMB AND
WED PUBLICATIONS OF MRGs IN THE BMB

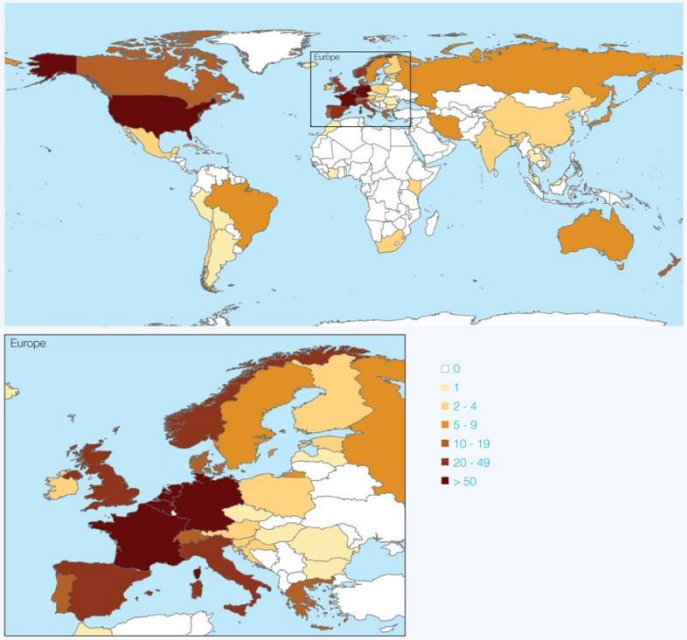
PEER-REVIEWED AND VABB PUBLICATIONS AFFILIATED
RG (2010) ACCORDING TO THE GEOGRAPHICAL LOCATION
STUDY AREA



1. Belgian Marine Research

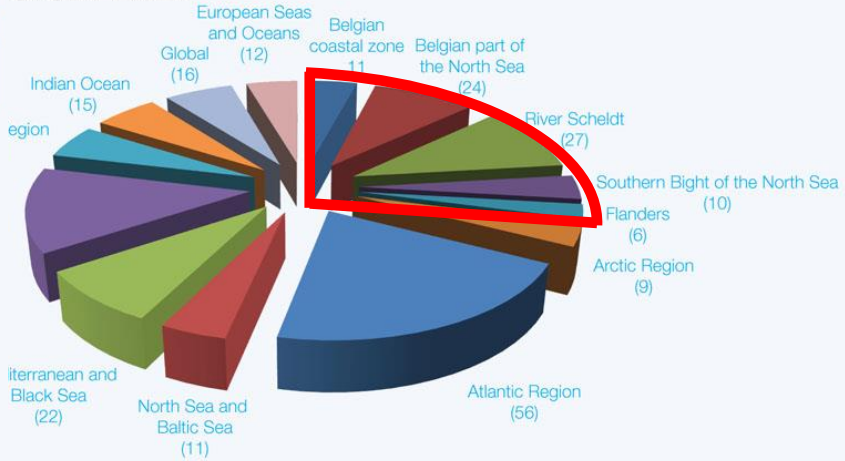
Marine Research in Flanders/Belgium

THE NUMBER OF MARINE PUBLICATIONS AFFILIATED TO AN MRG, ACCORDING TO THE COUNTRY OF THE (CO)AUTHORS



EVIEWED PUBLICATIONS IN THE BMB AND
WED PUBLICATIONS OF MRGs IN THE BMB

PEER-REVIEWED AND VABB PUBLICATIONS AFFILIATED
RG (2010) ACCORDING TO THE GEOGRAPHICAL LOCATION
STUDY AREA



1. Belgian Marine Research

Brochure: Belgian Marine Research – An overview

- Looking for certain expertise?
- Possibilities for cooperation?
- A suitable research group to start a PhD?

1. Belgian Marine Research

Brochure: Belgian Marine Research – An overview

- per
- rati
- oup

/ Research group **Analytical and Environmental Chemistry (VUB)**

www.vub.ac.be/ANCH

// institutional hierarchy
Faculty of Science and Bio-engineering Sciences
Department of Chemistry

// head of the group
Prof. dr. Willy Baeyens

// research domain and discipline
Natural sciences; Chemical sciences

// abstract

The research group Analytical and Environmental Chemistry (ANCH) of the Vrije Universiteit Brussel was founded in 1990, and originated from the research group Analytical Chemistry which in turn was founded in 1968. The group is involved in several topics regarding environmental research. The group focuses in particular on the development of analytical methods needed for the study of aquatic systems such as oceans, coastal ecosystems, estuaries, rivers and lakes, but also for the impact of the environment on human health or food quality.

In the marine field, the developments in analytical chemistry are closely connected to the study of biogeochemical processes, both of nutrients and pollutants. Within the field of analytical chemistry, the group focuses on the sampling of labile, bioavailable dissolved fractions of both nutritive and toxic trace elements; the determination of trace metals using HR-ICP-MS (high resolution inductive coupled plasma mass spectrometry); the determination of stable isotopes of carbon and nitrogen using IRMS (stable isotope mass spectrometry); high resolution 2-D visualisation of trace metals in sediments using laser technology coupled to ICP-MS; the determination of Th/U ratios in particles using a scintillation counter; and the measurement of persistent organic hydrocarbons (i.e. dioxins and PCBs) using genetically modified cell lines (CALUX). The research related to marine ecosystems focuses on the quantification of the productivity and export production in open oceans; the biogeochemical cycles of carbon, nitrogen and pollutants (inorganic and organic) in coastal ecosystems; metal fluxes and microbial diversity in contaminated marine sediments; and the accumulation of pollutants in marine organisms.

Future research will focus among others on the development of methods to refine export production fluxes, on the 3D visualisation of trace elements found in sediments and the development of 3D process models for the description of their behavior. The research group Analytical Chemistry participates in several national and international research projects and collaborates with renowned Belgian and foreign research institutes.

Some key events during the existence of this group are the publication of the first 2D tide and pollutant dispersion models of the Scheldt (1980), the development of a new analytical method to detect methylmercury in marine fish (1985) and a publication in the renowned journal Science describing the export production of carbon in the Southern Ocean, based on vertical Barium profiles (1992).

ANCH
Pleinlaan 2
B-1050 Brussels

67

VLIZ

2. Use of the Coast and Sea

Misjel Decleer 2006

2. Use of the Coast and Sea

One-stop-shop for reliable, scientifically underpinned, published information

Themes Chapter 2	
Nature and environment	Maritime and coastal heritage
Maritime transport, shipping and ports	Social and economic environment
Dredging and dumping	Tourism and recreation
Sand and gravel extraction	Safety against flooding
Energy (incl. cables and pipelines)	Military use
Fisheries	Scheldt Estuary
Aquaculture	Integrated Coastal Zone Management
Agriculture	Marine Spatial Planning

VLIZ

2. Use of the Coast and Sea

79 coauthors & reviewers from science, policy & civil society

Relevant facts, figures, scientific and legal information
Disclosed following template:

- Introduction & international benchmarking
- Policy context
- Spatial use
- Societal interest
- Impact
- Sustainable use

Neutral & Objective

2. Use of the Coast and Sea

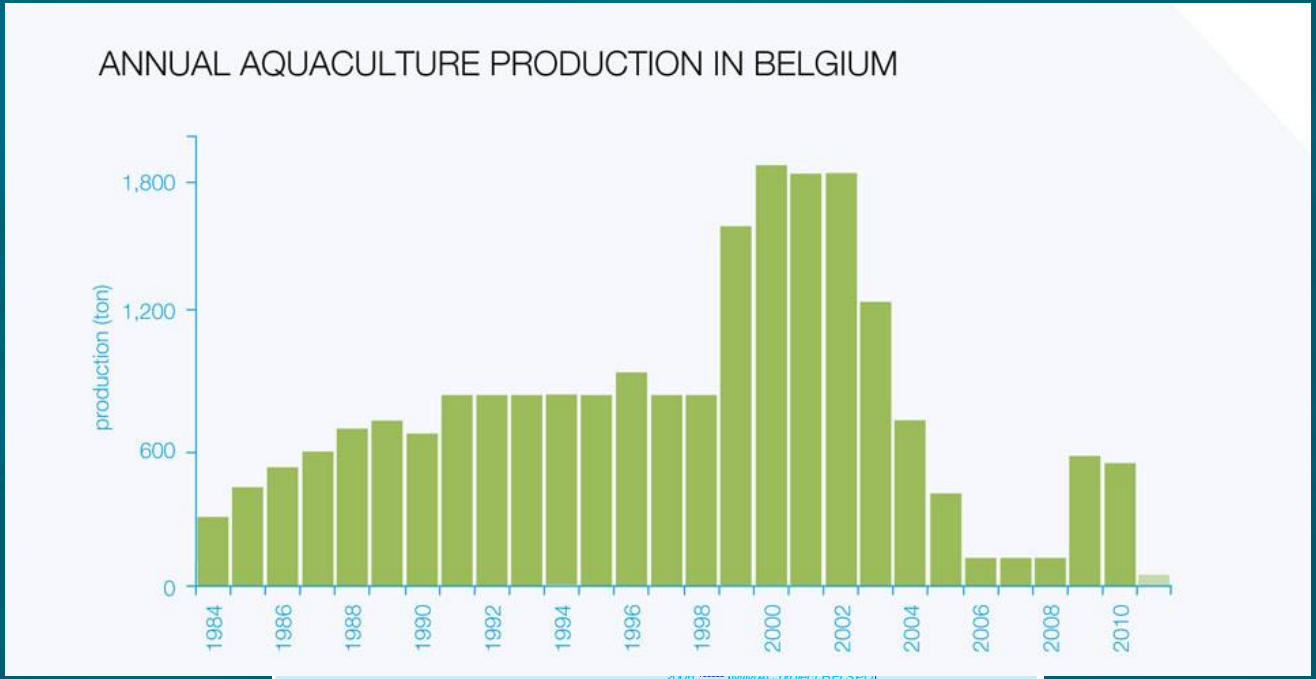
Large amount of information is summarized in tables, graphs, maps, flowcharts, etc.

IMPACT	LITERATURE
Oil pollution and pollution by other pollutants and toxic materials, due to accidental, operational or illegal discharge	*Schallier 2001* [24539], *Seys & Kerckhof 2003* [35234], *Maes et al. 2004* [70936] (*MARE-DASM project BELSPO*), *Seys 2004* [214644], *Schrijvers & Maes 2005* [76295] (*GAUFRE project BELSPO*), *Le Roy et al. 2006* [101056] (*RAMA project BELSPO*), *Lescrauwaet et al. 2006* [105200], *Volckaert et al. 2006* [103058] (*MIMAC project BELSPO*) , *Goffin et al. 2007* [114225], *Schallier et al. 2008* [213554], *OSPAR QSR 2010* [196817] *André et al. 2010* [200813], *Dittman et al. 2012* [219655], *Lagring et al. 2012* [213554], *Maebe et al. 2012* [221526]
Air pollution, caused by particles in the emissions of marine engines (NO_x, SO_x, CO_2, etc.)	*Maes et al. 2004* [70936] (*MARE-DASM project BELSPO*), *Schrijvers & Maes 2005* [76295] (*GAUFRE project BELSPO*), *Goffin et al. 2007* [114225], *Maes et al. 2007* [117045] (*ECOSONOS project BELSPO*), *Gommers et al. 2007* [214629] (*MOPSEA project BELSPO*), *OSPAR QSR 2010* [196817], *Bencs et al. 2012* [226554] (*SHIPFLUX project BELSPO*)
Waste dumping	*Schallier 2001* [24539], *Lescrauwaet et al. 2006* [105200], *Goffin et al. 2007* [114225], *Claessens et al. 2010* [197434], *OSPAR QSR 2010* [196817], *André et al. 2010* [200813], *Van Franeker et al. 2011* [209259], *AS-MADE project BELSPO*
Leaching of polluting anti-fouling substances (e.g. tributyltin (TBT))	*Maes et al. 2004* [70936] (*MARE-DASM project BELSPO*), *Schrijvers & Maes 2005* [76295] (*GAUFRE project BELSPO*), *Goffin et al. 2007* [114225], *OSPAR QSR 2010* [196817], *Claessens et al. 2010* [197434]
Introduction of non-indigenous species due to their attachment to the keel or the discharge of ballast water	*Maes et al. 2004* [70936] (*MARE-DASM project BELSPO*), *Schrijvers & Maes 2005* [76295] (*GAUFRE project BELSPO*), *Goffin et al. 2007* [114225], *OSPAR QSR 2010* [196817]
Pollution and physical impact due to the loss of ships or cargo	*Schallier 2001* [24539], *Seys & Kerckhof 2003* [35234], *Le Roy et al. 2006* [101056] (*RAMA project BELSPO*), *Goffin et al. 2007* [114225], *De Baere et al. 2010* [197436], *OSPAR QSR 2010* [196817]
Other physical impact, such as noise and collisions with marine mammals	*Maes et al. 2004* [70936] (*MARE-DASM project BELSPO*) [70936], *OSPAR QSR 2010* [196817], *André et al. 2010* [200813], *compilation national reports ASCOBANS*
Impact on other users (safety, spatial impact, etc.)	*Maes et al. 2004* [70936] (*MARE-DASM project BELSPO*), *Schrijvers & Maes 2005* [76295] (*GAUFRE project BELSPO*), *Le Roy et al. 2006* [101056] (*RAMA project BELSPO*), *Volckaert et al. 2006* [103058] (*MIMAC project BELSPO*)

VLIZ

2. Use of the Coast and Sea

Large amount of information is summarized in tables, graphs, maps, flowcharts, etc.

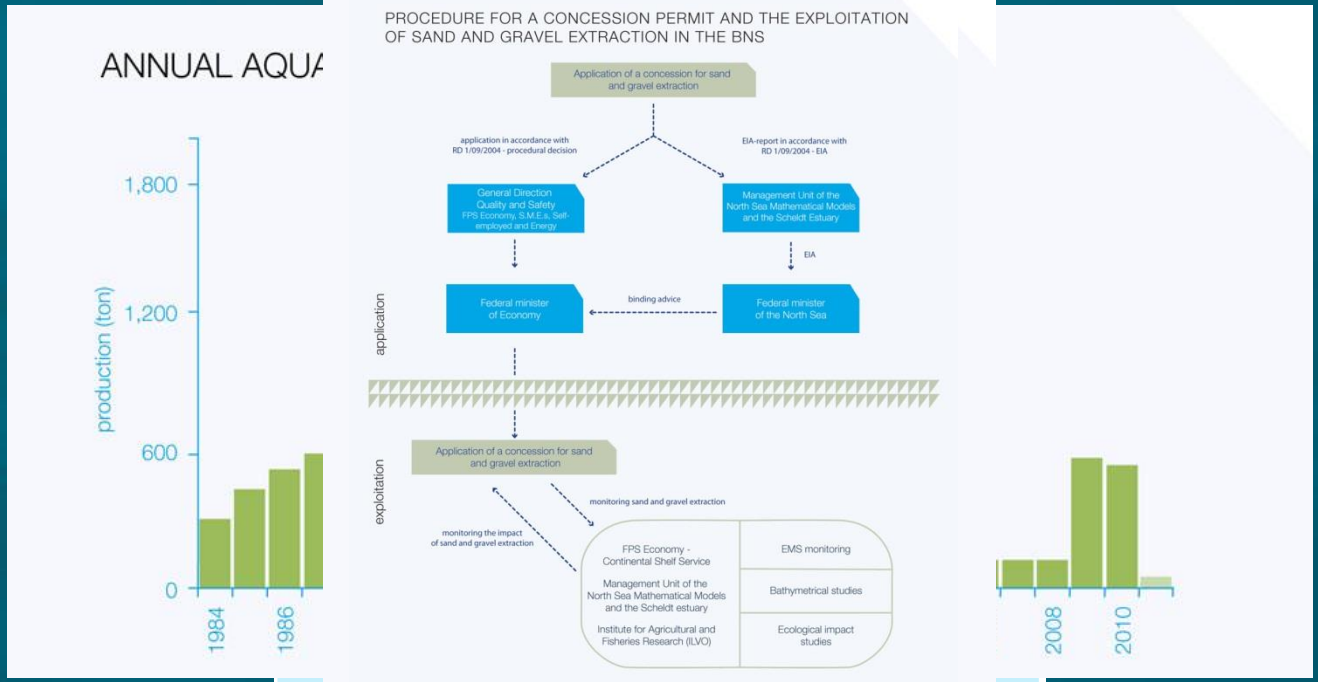


2. Use of the Coast and Sea

Large amount of information is summarized in tables, graphs, maps, flowcharts, etc.

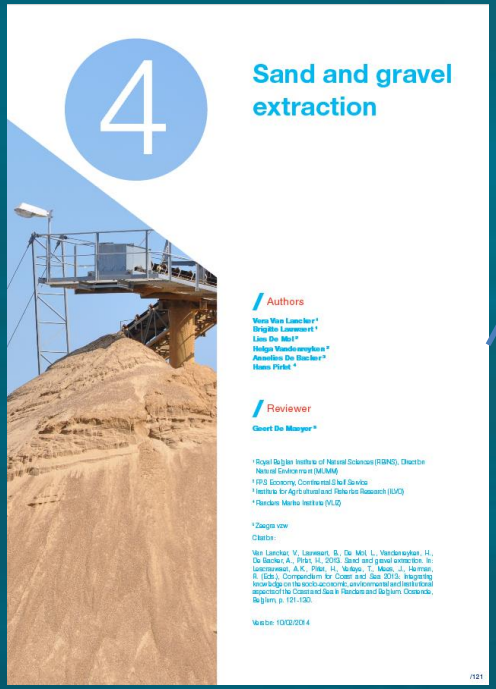
2. Use of the Coast and Sea

Large amount of information is summarized in tables, graphs, maps, flowcharts, etc.



2. Use of the coast and sea

Need information about the effect of sand extraction on ecosystem?



4

Sand and gravel extraction

Authors

Vera Van Lancker [1]
Brigitte Laeremans [1]
Lies De Mol [2]
Helga Vandenreyken [3]
Annelies De Backer [4]
Hans Pirlet [4]

Reviewer

Geert De Moerloose [5]

[1] Royal Belgian Institute of Natural Sciences (RBINS), Directie Natural Environment (MUMM)
[2] FPS Economy, Continental Shelf Service
[3] Institute for Agricultural and Fisheries Research (ILVO)
[4] Flanders Marine Institute (VLIZ)
[5] Zeegras vzw

Citation:

Van Lancker, V., Laeremans, B., De Mol, L., Vandenreyken, H., De Backer, A., Pirlet, H., 2013. Sand and gravel extraction. In: Laeremans, B.K. Pirlet, H., Verleye, T., Meuk, J., Hermans, R. (Eds.). Compendium for Coast and Sea 2013: Integrating knowledge on the socio-economic, environmental and institutional aspects of the Coast and Sea in Flanders and Belgium. Oostende, Belgium, p. 121-130.

Version: 10/02/2014

/121

4.4 Impact

The most commonly used vessel for sand extraction is the trailing suction hopper dredger, which makes channels of 1-3 m wide and 0.2-0.5 m deep in the seabed (*Degrendele et al. 2010* [205558]). The *Royal Decree of 1 September 2004 – EIA*, stipulates the different effects of sand extraction on the marine environment that need to be taken into account in the environmental assessment report (tables 3 and 4).

Table 3. An overview of the effects of sand extraction on the environment.

ENVIRONMENTAL IMPACT	LITERATURE
Seabed and water (changes in the bathymetry, sedimentology, sediment plumes, turbidity, hydro-dynamic regime, etc.)	*de Groot 1996* [29247], *Seys 2003* [36257], *Verfaillie et al. 2005* [78296] (*GAUFRE project BELSPO*), *MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101357], *Van Lancker et al. 2007* [126350] (*MAREBASSE project BELSPO*), *Vanaverbeke et al. 2007* [109297] (*SPEEK project BELSPO*), *Van den Eynde et al. 2008*, *Van Lancker et al. 2009* [211953] (*QUEST4D project BELSPO*), *Van den Eynde & Norro, 2009* [143265], *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214857], *Van Lancker et al. 2010* [205567], *Bellec et al. 2010* [205556], *Degrendele et al. 2010* [205558], *Van den Eynde et al. 2010* [205561], *Garel 2010* [205559], *Roche et al. 2011* [206561], *De Sutter & Mathys 2011* [205767]
Fauna, flora and biodiversity	*Seys 2003* [36257], *Verfaillie et al. 2005* [78296] (*GAUFRE project BELSPO*), *MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101357], *Vanaverbeke et al. 2007* [109297] (*SPEEK project BELSPO*), *Hostens et al. 2008*, *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214857], *De Backer et al. 2010* [214855], *Bellec 2010* [205556], *De Backer et al. 2011* [206690], *De Sutter & Mathys 2011* [205767]
Air quality and climate	*MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101357], *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214857], *De Sutter & Mathys 2011* [205767]
Noise and vibrations	*MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101357], *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214857], *De Sutter & Mathys 2011* [205767]

2. Use of the coast and sea

Need information about the effect of sand extraction on ecosystem?

4.4 Impact

The most commonly used vessel for sand extraction is the trailing suction hopper dredger, which makes channels of 1-3 m wide and 0.2-0.5 m deep in the seabed (*Degrendele et al. 2010* [205558]). The *Royal Decree of 1 September 2004 – EIA*, stipulates the different effects of sand extraction on the marine environment that need to be taken into account in the environmental assessment report (tables 3 and 4).

Table 3. An overview of the effects of sand extraction on the environment.

MER voor de extractie van mariene aggregaten in de exploratiezone van het Belgisch deel van de Noordzee

(2010). MER voor de extractie van mariene aggregaten in de exploratiezone van het Belgisch deel van de Noordzee. International Marine and Dredging Consultants: [s.l.]. 250 pp.

internal information

Available in

VLIZ: *Open access 234288* [download pdf]

Fauna, flora and biodiversity	*Seys 2003* [36257], *Verfaillie et al. 2005* [78296] (*GAUFRE project BELSPO*), *MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101367], *Vanaverbeke et al. 2007* [109297] (*SPEEK project BELSPO*), *Hostens et al. 2008*, *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214657], *De Backer et al. 2010* [214657], *Bonne 2010* [205558], *De Backer et al. 2011* [206690], *De Sutter & Mathys 2011* [205767]
Air quality and climate	*MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101367], *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214657], *De Sutter & Mathys 2011* [205767]
Noise and vibrations	*MER voor de extractie van mariene aggregaten op het BNZ, 2006* [101367], *MER voor de extractie van mariene aggregaten in de exploratiezone van het BNZ, 2010* [214657], *De Sutter & Mathys 2011* [205767]

2. Use of the coast and sea

Need information about the effect of sand extraction on ecosystem?

4

Sand and grave
extraction

Vlaamse Overheid
Agentschap voor Maritieme Dienstverlening en Kust
Afdeling Kust

AFDELING KUST

Maritieme Dienstverlening en Kust

MER voor de extractie van mariene aggregaten in de exploratiezone van het Belgisch deel van de Noordzee

Milieueffectrapport

IMDC

action is the trailing suction hopper dredger, which makes channels of
Degrendele et al. 2010 205558). The *Royal Decree of 1 September 2004*
traction on the marine environment that need to be taken into account
3 and 4).

ction on the environment.

MER voor de extractie van mariene ag

(2010). MER voor de extractie van mariene aggregater
[s.l.]. 250 pp.

Available in

VLIZ: *Open access 234288* [download pdf]

het Belgisch deel van de Noordzee

Noordzee. International Marine and Dredging Consultants:

internal information

faillie et al. 2005 76296 (GAUFRE project BELSPO), MER voor de extractie
aten op het BNZ, 2006 101367, Vanaverbeke et al. 2007 102287 (SPEEK project
t al. 2008, MER voor de extractie van mariene aggregaten in de exploratiezone
4657, De Backer et al. 2010 205559, De Backer et al. 2011 206690,
2011 206767

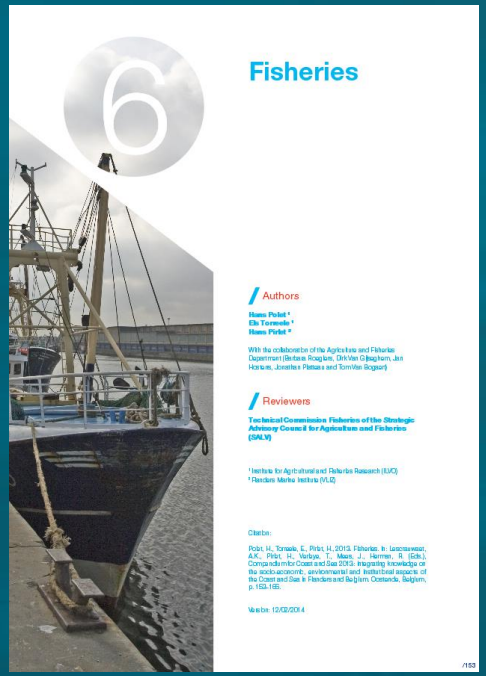
ie van mariene aggregaten op het BNZ, 2006 101367, MER voor de extractie van
in de exploratiezone van het BNZ, 2010 214657, De Sutter & Mathys 2011 205767

ie van mariene aggregaten op het BNZ, 2006 101367, MER voor de extractie van
in de exploratiezone van het BNZ, 2010 214657, De Sutter & Mathys 2011 205767

VLIZ

2. Use of the coast and sea

Want to know how much fish is landed in Belgian ports?



6

Fisheries

/ Authors

Hans Polet [1]
Els Torreele [1]
Hans Pirlet [2]

With the collaboration of the Agriculture and Fisheries Department (Barbara Roeglen, Dirk Van Gijsegem, Jan Hamers, Joachim Pieters and Tom Van Rogiers)

/ Reviewers

Technical Commission Fisheries of the Strategic Advisory Council for Agriculture and Fisheries (SALV)

[1] Institute for Agricultural and Fisheries Research (ILVO)
[2] Flanders Marine Institute (VLIZ)

Citation:

Polet, H., Torreele, E., Pirlet, H., 2013. Fisheries. In: Lescrauwaet, A.K., Pirlet, H., Verleye, T., Maes, J., Hermes, R. (Eds.), Compendium for Coast and Sea 2013: Integrating knowledge of the socio-economic, environmental and institutional aspects of the Coast and Sea in Flanders and Belgium. Oostende, Belgium, p. 153-165.

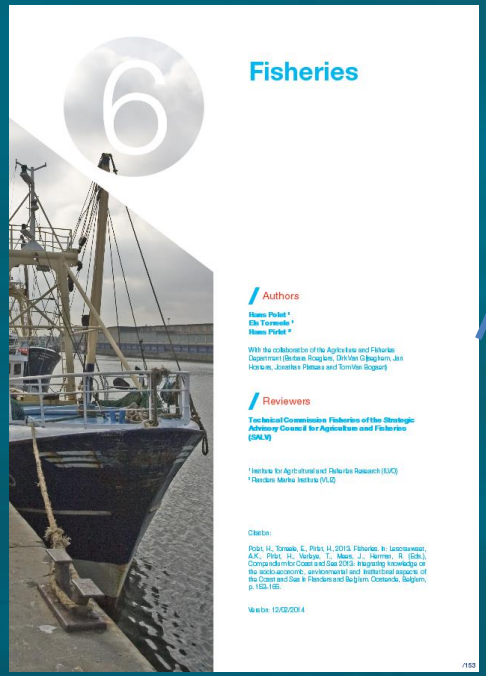
Version: 12/09/2014

/153

VLIZ

2. Use of the coast and sea

Want to know how much fish is landed in Belgian ports?



6

Fisheries

/ Authors

Hans Polet [1]
Els Torreele [1]
Hans Pirlet [2]

With the collaboration of the Agriculture and Fisheries Department (Barbara Roeglen, Dirk Van Gijsegem, Jan Hamers, Joseline Pieters and Tom Van Rogiers)

/ Reviewers

Technical Commission Fisheries of the Strategic Advisory Council for Agriculture and Fisheries (SALV)

[1] Institute for Agricultural and Fisheries Research (ILVO)
[2] Flanders Marine Institute (VLIZ)

Citation:

Polet, H., Torreele, E., Pirlet, H., 2013. Fisheries. In: Lescrauwaet, A.K., Pirlet, H., Verleye, T., Maes, J., Hermes, R. (Eds.), Compendium for Coast and Sea 2013: integrating knowledge on the socio-economic, environmental and institutional aspects of the Coast and Sea in Flanders and Belgium. Oostende, Belgium, p. 153-165.

Version: 12/02/2014

6.3 Societal interest

6.3.1 Employment

Employment in the fisheries sector has declined due to the crisis that has affected the fisheries sector (see **Sustainable use**). In 2012, the fisheries sector in Belgium consisted of 439 authorised sea fishermen. In addition, approximately 1,040 people worked in the fish-processing industry and 5,000 people in related sectors (*Visserijrapport (VIRA) (2012)* [225537]). The promotion of the attractiveness of the sector, especially towards the younger end of the workforce, remains one of the most important challenges. Efforts are made to improve the inflow of young persons into the sector, for example by means of the *Fund for young shippers* (*SALV advice 23 March 2012* [225542] and *advice of 20 March 2013* [225541]).

6.3.2 Belgian fishing fleet

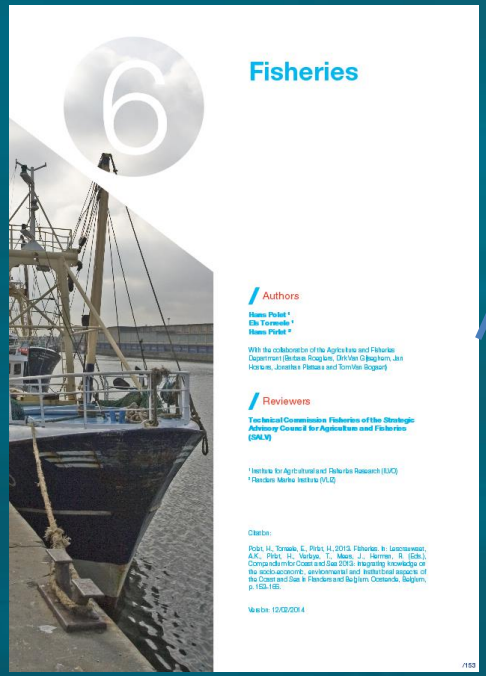
In the *Ministerial Decree of 16 December 2005*, the fishing fleet is divided into 3 segments:

- Large Fleet Segment: All fishing vessels with an engine power capacity between 221 kW and 1,200 kW;
- Small Fleet Segment: All fishing vessels with an engine power capacity of 221 kW or less, except for the coastal fleet segment;
- A Coastal Fleet Segment: All fishing vessels with an engine power capacity of 221 kW or less and a tonnage of maximum 70 GT, which take part in sea trips of maximum 48 hours with the start and end situated in a Belgian port. The affiliation to the coastal fleet segment takes place on a voluntary basis.

VLIZ

2. Use of the coas

Want to know how much fish i



6.3 Societal interest

6.3.1 Employment

Employment in the fisheries sector has dec
use. In 2012, the fisheries sector in Belgi
1,040 people worked in the fish-processin
). The promotion of the attractiveness
one of the most important challenges. Eff
example by means of the *Fund for young*
).

6.3.2 Belgian fishing fleet

In the *Ministerial Decree of 16 December*
- Large Fleet Segment: All fishing vess
- Small Fleet Segment: All fishing vess
fleet segment;
- A Coastal Fleet Segment: All fishing
maximum 70 GT, which take part in
port. The affiliation to the coastal flee

6.3.3 Landings and value

The landings of the Belgian sea fisheries vessels between 1929 and 1999 have been collected for each species and for each fishing area on the website '*A century of sea fisheries in Belgium*' of VLIZ (figure 3). Landings peaked after the Second World War, when more than 70,000 tons of fish was landed in the Belgian ports each year. Since then, the supply decreased constantly to about 20,000 tons in the past few years (*Tessens & Velghe 2013*). The evolution of the landings can be largely explained by a change in the species composition of the catch (*Visserijrapport (VIRA) 2012*), but the fuel crisis, declining fish stocks, the declining fishing fleet, limiting quota and the fishing effort limits also contribute to lower landing numbers (see **Sustainable use**). In 2012, the landing amounted to 21,894 tons of which 17,558 tons were landed in Belgian ports and 4,335 tons in foreign ports. In 2012, the port of Zeebrugge covered 63.8% of the landings in Belgian ports, Ostend 35.1% and Nieuwpoort 1.1%. Plaice, sole and ray remain the most important species in 2011 in terms of landing volume (*Tessens & Velghe 2013*).

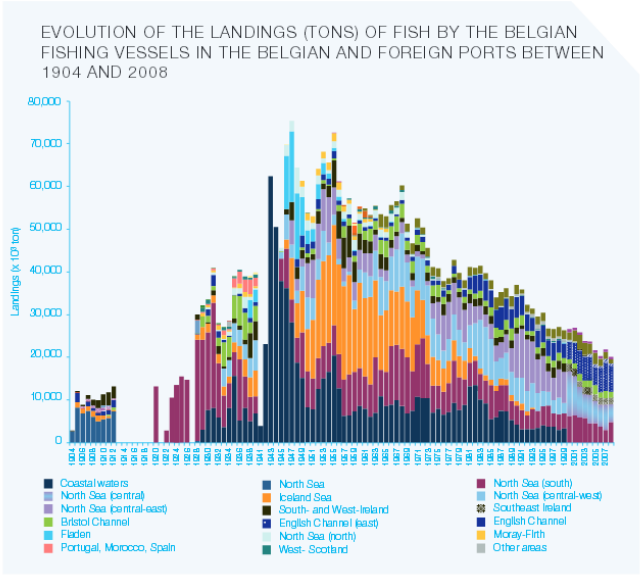
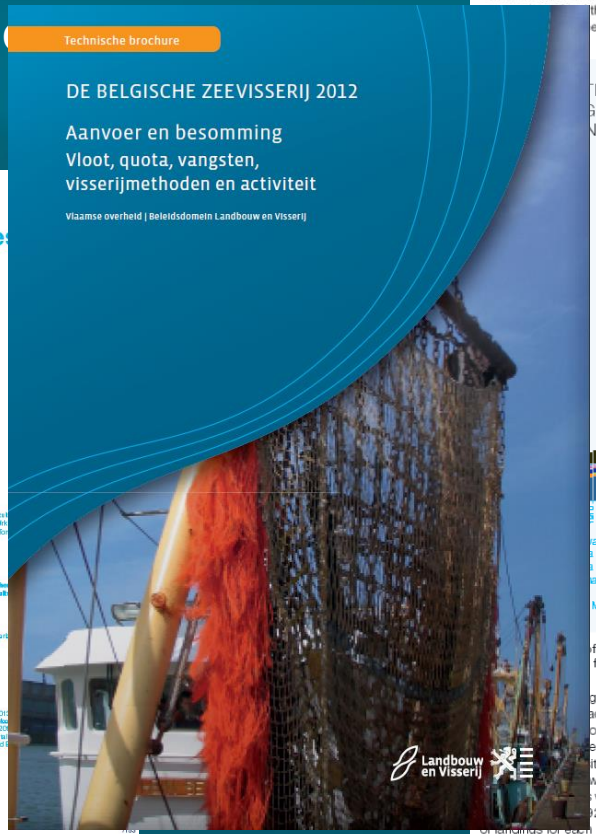


Figure 3. Evolution of the landings (tons) of fish by the Belgian fishing vessels in Belgian and foreign ports between 1904 and 2008, sorted by fishing ground (*A century of sea fisheries in Belgium*, **VLIZ**).

The value of landings or turnover is the yield of landed fish and fish products sold by public auction (calculated on the total of both traded and non-traded products). The total value of landings of fish by Belgian fisheries vessels increased almost constantly after the Second World War from approximately 80 million euros (indexed value with respect to the reference year 2007) to peaks of approximately 130 million euros at the end of the eighties and in the early nineties (website '*A century of sea fisheries in Belgium*', VLIZ). This was followed by a decrease to 68.367 million euros in 2009, followed by an increase to 76.351 million euros in 2012. Sole remains the most important fish species for Belgian fisheries with 39% of the value of landings in 2012 (*Tessens & Velghe 2013*). The value of landings of each species between 1929 and 1999 is kept at the website '*A century of sea fisheries in Belgium*' (VLIZ). The recent value of landings for each species can be found in *Tessens & Velghe (2013)*.

2. Use of the coas

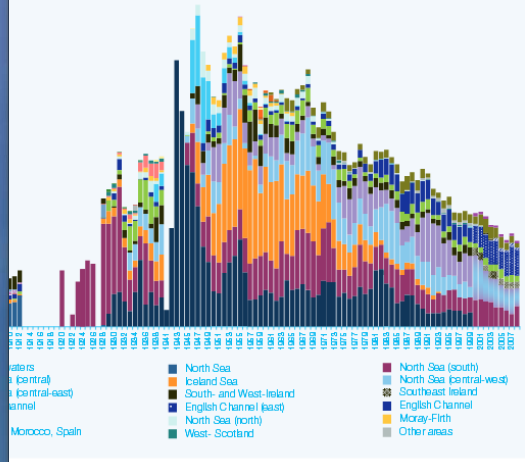
Want to kn



6.3.3 Landings and value

The landings of the Belgian sea fisheries vessels between 1929 and 1999 have been collected for each species and for each fishing area on the website '*A century of sea fisheries in Belgium*' of VLIZ (figure 3). Landings peaked after the Second World War, when more than 70,000 tons of fish was landed in the Belgian ports each year. Since then, the supply decreased constantly to about 20,000 tons in the past few years (*Tessens & Velghe 2013*). The evolution of the landings can be largely explained by a change in the species composition of the catch (*Visserijrapport (VIRA) 2012* [2249b7]), but the fuel crisis, declining fish stocks, the declining fishing fleet, limiting quota and the fishing effort limits also contribute to lower landing numbers (see **Sustainable use**). In 2012, the landing amounted to 21,894 tons of which 17,558 tons were landed in Belgian ports and 4,335 tons in foreign ports. In 2012, the port of Zeebrugge [illegible] the landings in Belgian ports, Ostend 35.1% and Nieuwpoort 11.4%. Plaice, sole and ray remain the [illegible]ecies in 2011 in terms of landing volume (*Tessens & Velghe 2013*).

[illegible]TION OF THE LANDINGS (TONS) OF FISH BY THE BELGIAN [illegible]G VESSELS IN THE BELGIAN AND FOREIGN PORTS BETWEEN [illegible]ND 2008

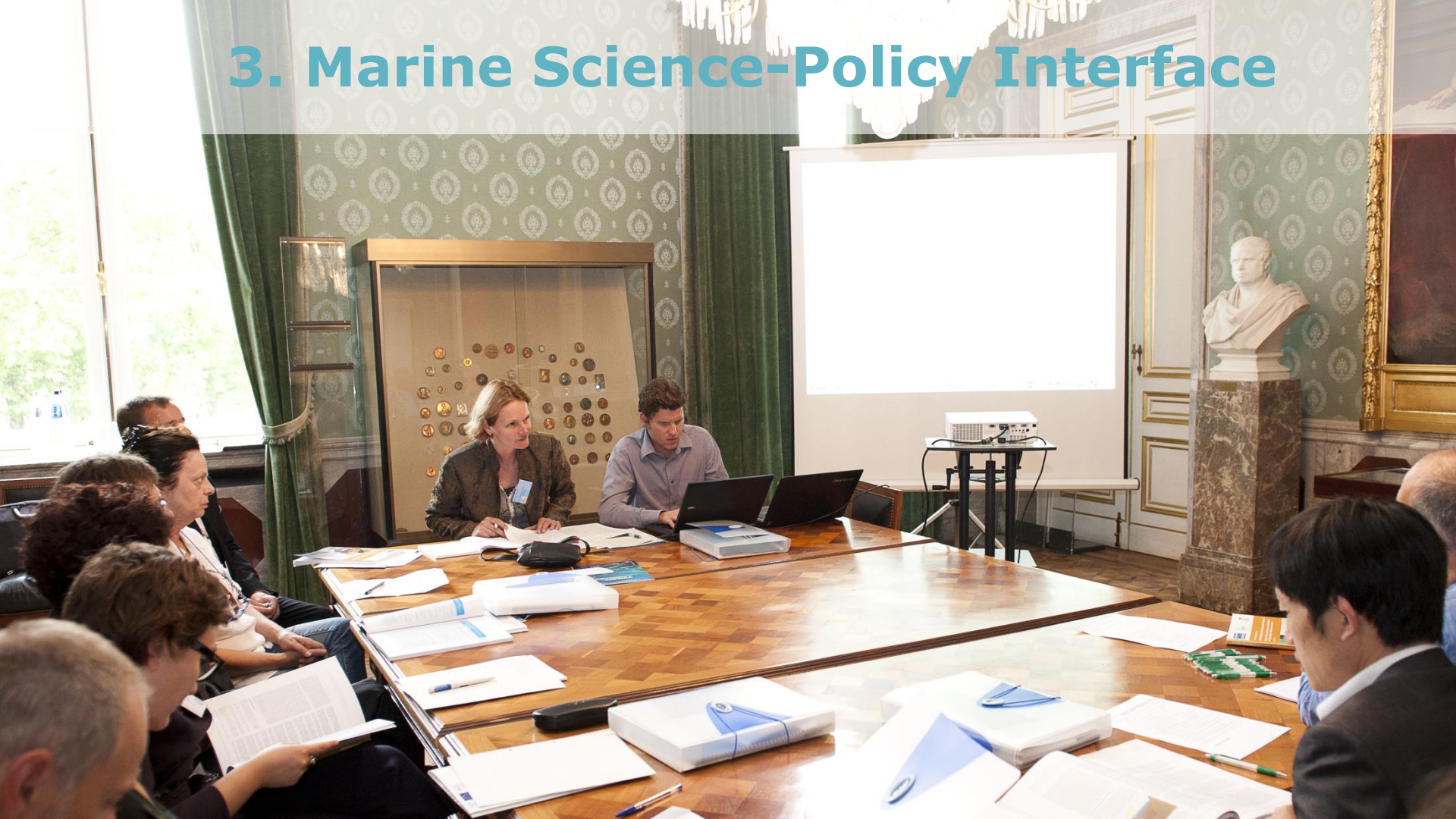


[illegible]f the landings (tons) of fish by the Belgian fishing vessels in Belgian and foreign ports between 1904 [illegible] fishing ground (*A century of sea fisheries in Belgium*, **VLIZ**).

[illegible]gs or turnover is the yield of landed fish and fish products sold by public auction (calculated on [illegible]aded and non-traded products). The total value of landings of fish by Belgian fisheries vessels [illegible]onstantly after the Second World War from approximately 80 million euros (indexed value with [illegible]ence year 2007) to peaks of approximately 130 million euros at the end of the eighties and in the [illegible]ite '*A century of sea fisheries in Belgium*', VLIZ). This was followed by a decrease to 68.367 million [illegible]wed by an increase to 76.351 million euros in 2012. Sole remains the most important fish species [illegible] with 39% of the value of landings in 2012 (*Tessens & Velghe 2013*). The value of landings of each [illegible]929 and 1999 is kept at the website '*A century of sea fisheries in Belgium*' (VLIZ). The recent value [illegible] landings for each species can be found in *Tessens & Velghe (2013)*.

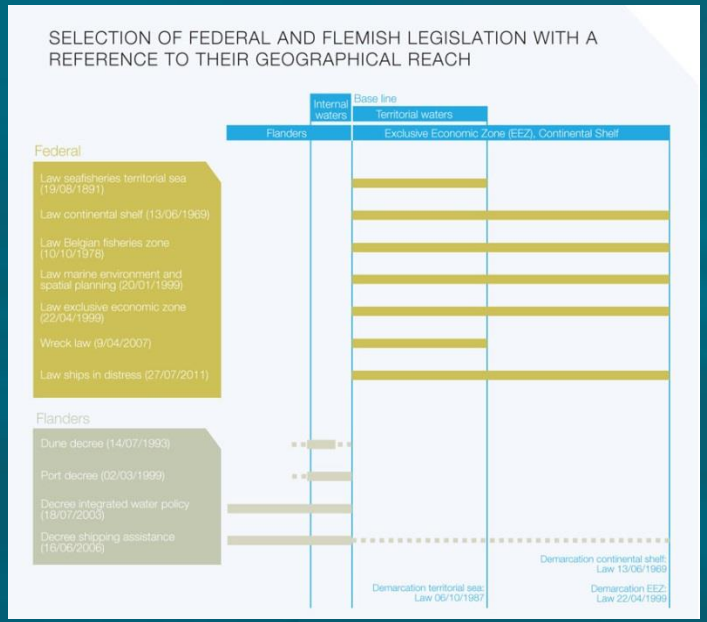
VLIZ

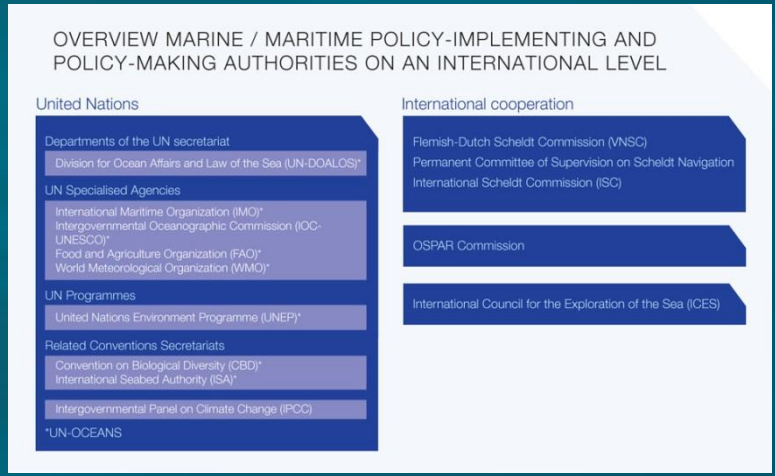
3. Marine Science-Policy Interface



3. Marine Science-Policy Interface

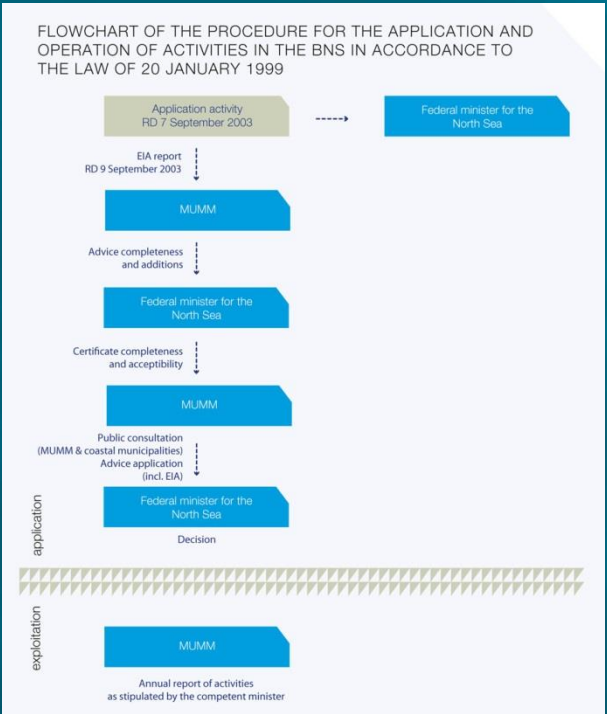
- Overview policy instruments & competent authorities
- Division of competences





3. Marine Science-Policy Interface

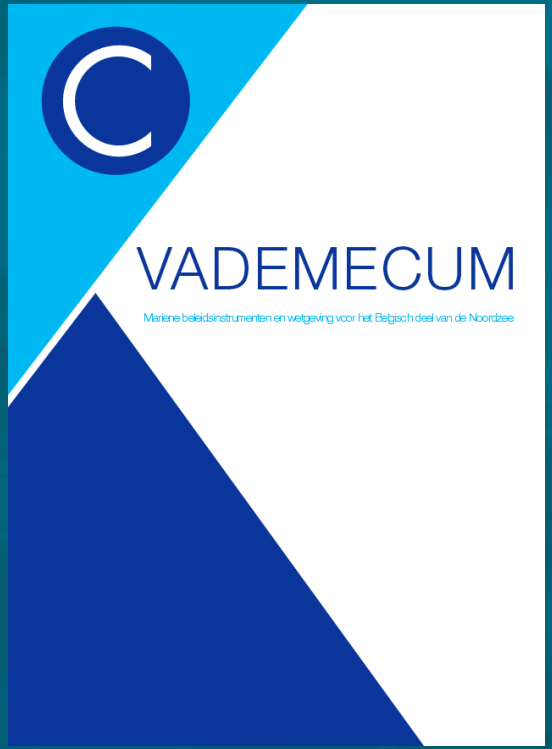
- Mechanisms to incorporate science in policy and decision-making, *vice versa*
- Authorities & platforms for SPI

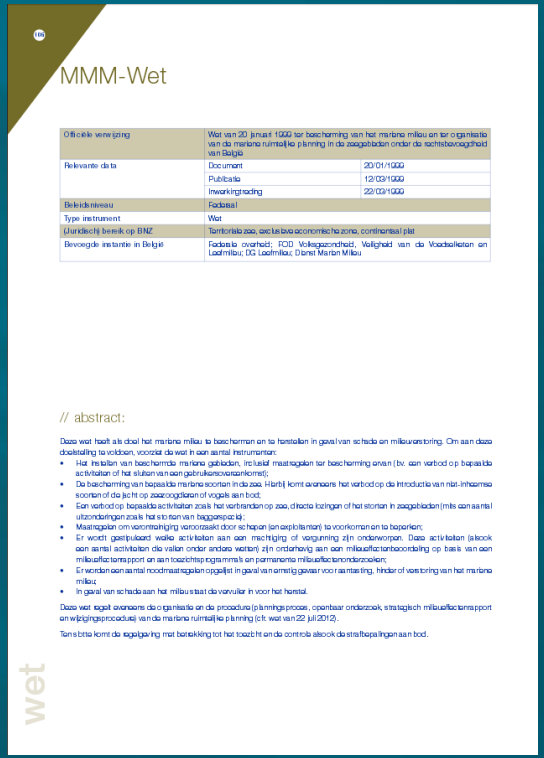


LEVEL	AUTHORITY	EXPLANATION
International		
	International Council for the Exploration of the Sea (*ICES*)	ICES is an intergovernmental organisation consisting of an international network of marine scientists who aim for a sustainable use of the oceans. ICES wants to increase the scientific knowledge with regard to the marine environment and its living resources and to use this knowledge to advise the competent authorities. The decision and policy-making body of ICES is the Council, with two delegates from each of the 20 Member States. The work of the Council is carried out by the Advisory Committee, the Science Committee and the Data and Information Group. ICES plays a significant role in the policy concerning fisheries (see Chapter 2, theme **Fisheries**).
	Intergovernmental Oceanographic Commission (*IOC*) - UNESCO	The IOC is the UN body for ocean science, ocean observation, ocean data and information exchange, and services such as Tsunami warning systems. IOC promotes international cooperation and coordinates programmes in research, services and capacity building concerning oceans and coastal areas. This knowledge is applied to the management, sustainable development and protection of the marine environment and to the decision making processes of the States.
European		
	Joint Research Centre (*JRC*)	The JRC is the research centre of the European Commission (EC). The centre takes care of the scientific and technological support of the European policy. Specifically for the coast and sea, JRC focuses on research concerning renewable marine energy, climate changes, floods, fisheries, marine ecosystems, etc.
	European Environment Agency (*EEA*)	The European Environment Agency (EEA) is an agency of the European Union with the task to provide sound, objective information about the environment. Their work is a major information source for everyone involved in developing, adopting, implementing and evaluating environmental policy, as well as for the general public. Specifically for coast and sea, EEA produces coastal and marine indicators, maps and information, and compiles these policy-relevant figures in the publication *The changing faces of Europe's coastal areas (2006)* [1002&1]. Furthermore, EEA coordinates Eionet, the European Environment Information and Observation Network that collects data about the environment (including the marine environment) in Europe and aims to develop a better environmental policy.

3. Marine Science-Policy Interface

Vademecum – Marine policy and legal instruments for the Belgian part of the North Sea *(currently only in Dutch)*





3. Marine Science-Policy Interface

What policy instruments are relevant for my research topic? E.g. protection of environment:

3. Marine Science-Policy Interface

elevant for my

n of environment:

	Natuur en milieu		
INT	ASCOBANS	Overeenkomst inzake de instandhouding van kleine walvisachtigen in de Noord- en Oostzee en het noordoostelijk deel van de Atlantische Oceaan en de Ierse Zee	p.15
	Conventie van Bern	Verdrag inzake het behoud van wilde dieren en planten en hun natuurlijke leefmilieu in Europa	p.22
	Biodiversiteitsverdrag	Verdrag inzake biologische diversiteit	p.23
	Verdrag van Bonn	Verdrag inzake de bescherming van trekkende wilde diersoorten	p.24
	OSPAR	Verdrag inzake de bescherming van het mariene milieu in het noordoostelijk deel van de Atlantische Oceaan	p.40
	Ramsar	Overeenkomst inzake watergebieden van internationale betekenis, in het bijzonder als verblijfplaats voor watervogels	p.41
	Walvisvaartverdrag	Internationaal verdrag tot regeling van de walvisvangst, en tot het Reglement	p.56
EU	Habitatrichtlijn	Richtlijn 92/43/EEG inzake de instandhouding van de natuurlijke habitats en de wilde flora en fauna	p.68
	Kaderrichtlijn Water	Richtlijn 2000/60/EG van het Europees Parlement en de Raad van 23 oktober 2000 tot vaststelling van een kader voor communautaire maatregelen betreffende het waterbeleid	p.71
	Zwemwaterrichtlijn	Richtlijn 2006/7/EG van het Europees Parlement en de Raad van 15 februari 2006 betreffende het beheer van de zwemwaterkwaliteit en tot intrekking van Richtlijn 76/160/EEG	p.76
	Kaderrichtlijn Mariene Strategie	Richtlijn 2008/56/EG tot vaststelling van een kader voor communautaire maatregelen betreffende het beleid ten aanzien van het mariene milieu (Kaderrichtlijn mariene strategie)	p.81
	Dochterrichtlijn Prioritaire Stoffen	Richtlijn 2008/105/EG van het Europees Parlement en de Raad van 16 december 2008 inzake milieukwaliteitsnormen op het gebied van het waterbeleid tot wijziging en vervolgens intrekking van de Richtlijnen 82/176/EEG, 83/513/EEG, 84/156/EEG, 84/491/EEG en 86/280/EEG van de Raad, en tot wijziging van Richtlijn 2000/60/EG	p.82
	Vogelrichtlijn	Richtlijn 2009/147/EG van het Europees Parlement en de Raad van 30 november 2009 inzake het behoud van de vogelstand	p.85
FED	Wet natuurbehoud	Wet van 12 juli 1973 op het natuurbehoud	p.101
	MMM-wet	Wet van 20 januari 1999 ter bescherming van het mariene milieu en ter organisatie van de mariene ruimtelijke planning in de zeegebieden onder de rechtsbevoegdheid van België	p.106
VL	Duinendecreet	Decreet van 14 juli 1993 houdende maatregelen tot bescherming van kustduinen	p.114
	Decreet Integraal Waterbeleid	Decreet van 18 juli 2003 betreffende het integraal waterbeleid	p.118

3. Marine Science-Policy Interface

for my

vironment:

INT

EU

Kad

Doc

FED

VL

De

81

Kaderrichtlijn mariene strategie

Officiële verwijzing	Richtlijn 2008/56/EG tot vaststelling van een kader voor communautaire maatregelen betreffende het beleid ten aanzien van het mariene milieu (Kaderrichtlijn mariene strategie)	
Relevante data	Document	17/06/2008
	Publicatie	25/06/2008
	Inwerkingtreding	15/07/2008
	Omzetting door België	23/06/2010
	Uiterste datum voor omzetting	15/07/2010
Beleidsniveau	Europees	
Type instrument	Richtlijn	
Geografisch bereik	EU-lidstaten	
(Juridisch) bereik op BNZ	Territoriale zee, exclusieve economische zone	
Europees aanspreekpunt	Directoraat-generaal Milieu (DG ENV)	
Bevoegde instantie in België	Federale overheid; FOD Volksgezondheid, Veiligheid van de Voedselketen en Leefmilieu; DG Leefmilieu; Dienst Marien Milieu	
Implementatie op federaal niveau	Koninklijk besluit van 23 juni 2010 betreffende de mariene strategie voor de Belgische Zeegebieden	

3. Marine Science-Policy Interface

// abstract:

De Europese Kaderrichtlijn Mariene Strategie (KRMS; 2008/56/EG) is de milieupijler van het *Geïntegreerd Maritiem Beleid* (COM (2007) 575; p.64) van de Europese Unie. De KRMS beoogt het behalen van de goede milieutoestand (GMT) van de Europese mariene wateren tegen 2020 en de bescherming van de hulpbronnen waarvan economische en sociale activiteiten afhankelijk zijn. Hiertoe dienen de lidstaten mariene strategieën uit te werken, rekening houdend met de eigen socio-economische en regelgevende situatie, waarbij regionale samenwerking moet resulteren in een samenhang van de in het kader van deze richtlijn noodzakelijke maatregelen. Deze strategieën dienen het proces van milieu-integratie in andere beleidsdomeinen te bevorderen. Op deze manier wordt de ecosysteemgerichte benadering op het beheer van menselijke activiteiten (volgens het voorzorgsprincipe) in een wetgevend kader verankerd, waarbij de concepten 'milieubescherming' en 'duurzaamheid' centraal staan.

De GMT wordt in artikel 9 van deze richtlijn omschreven op basis van 11 descriptoren. De lidstaten dienen voor elk van deze descriptoren indicatoren met daaraan gekoppelde streefwaarden uit te werken. De Europese Unie ondersteunt de lidstaten in het opstellen van de methodologie van de indicatoren door middel van een technisch rapport en wetenschappelijke adviezen per descriptor. Op basis van deze wetenschappelijke adviezen werd Beschikking 2010/477/EU gepubliceerd, met verdere inhoudelijke bepalingen van de criteria en de methodologische standaarden in uitvoering van de KRMS en de bepaling van GMT van de mariene wateren.

richtlijn

What can *you* do?

Take your research to the next level:

- Inform yourself about the societal relevance of your research
- Make sure your research is accessible and well-disclosed
- Bring relevant results to the attention of decision-makers
- Engage in your Marine Science Community
- Take action yourself or contact us:

compendium@vliz.be library@vliz.be

- Don’t forget the general public (*Ocean Literacy*)!

VLIZ

Interested?

Pick up your usb-stick with the Compendium for Coast and Sea at our demo stand!

www.compendiumcoastandsea.be

Compendium for Coast and Sea

Thanks for your attention!

VLIZ