



# IMPACT ANALYSIS OF VLIZ

11 June 2015



Vlaams Instituut voor de Zee vzw  
Flanders Marine Institute

# CONTENT

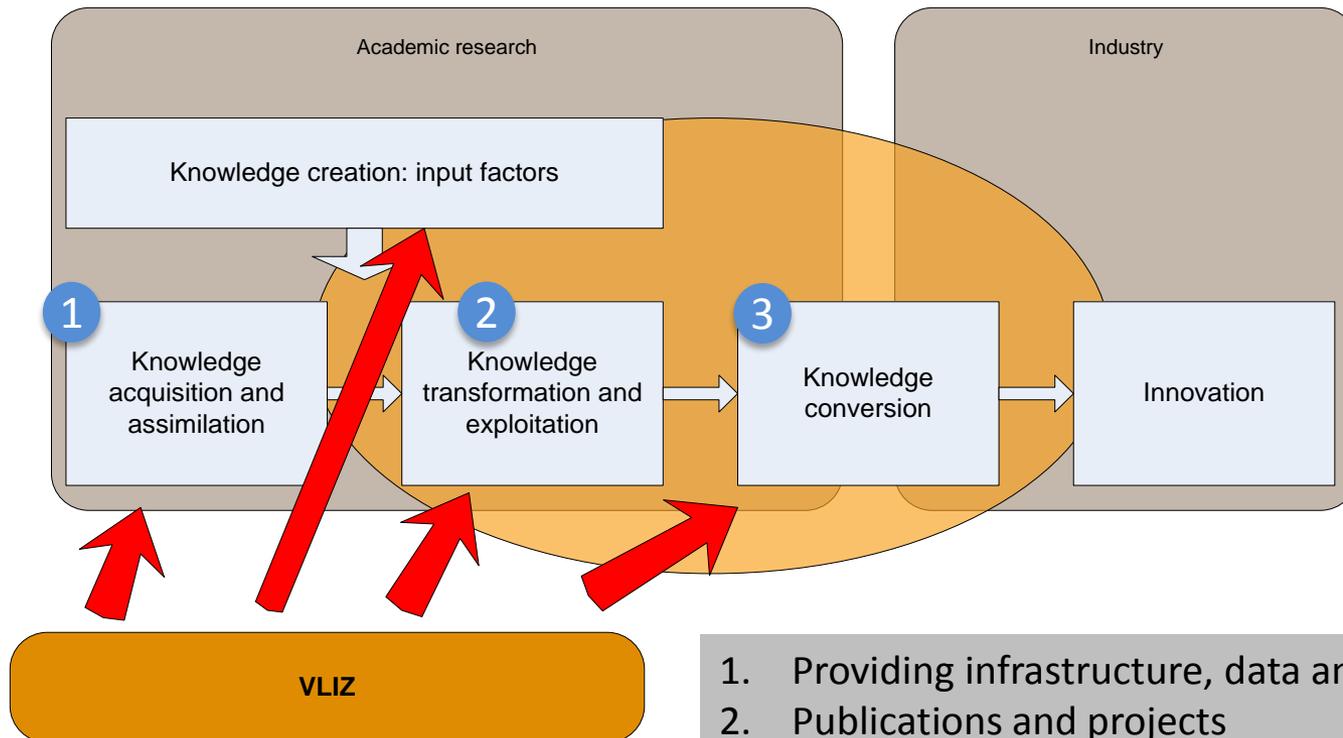
- ▶ Introduction
- ▶ Presentation results impact analysis
  - Scientific impact
  - Societal impact
  - Economic impact
  - Catalytic impact
- ▶ Conclusions and recommendations

# Introduction

- Period 2009-2013
- Scientific, societal, economic, catalytic impact of VLIZ + partners InnovOcean
- Input from
  - Guidance committee (partners + Board of Directors)
  - Workshop stakeholders
  - Online discussion: international stakeholder consultation
  - Interview of industrial partners
- Contractor: IDEA Consult



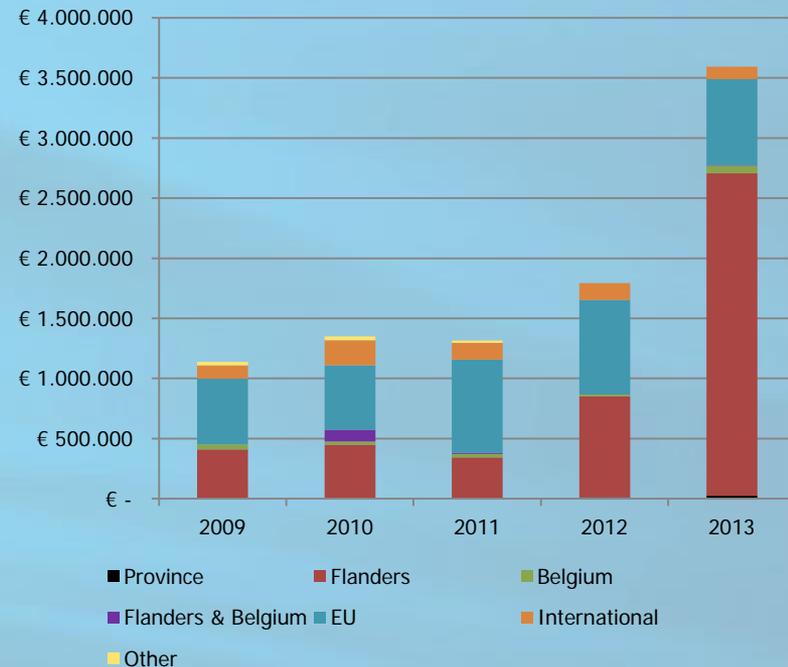
# SCIENTIFIC IMPACT



1. Providing infrastructure, data and documents
2. Publications and projects
3. Integration of research results in existing 'systems', networking and training & dissemination

# SCIENTIFIC IMPACT: Knowledge transformation

- Cooperation:
  - Large leveraging effect of funding
  - Cooperation and exchange with many different partners
  - Important infrastructure projects
  - On average 1.8 million euro external funding
  - On average 23 research projects per year
  - In relatively large consortia (7.5 partners on average in 2013)
  - With partners from neighbouring countries and from all over the world

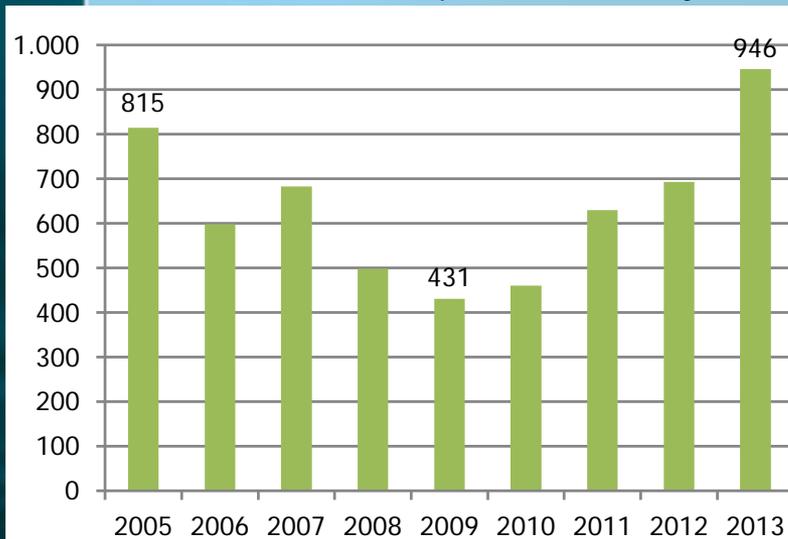


# SCIENTIFIC IMPACT: Knowledge exploitation: infrastructure

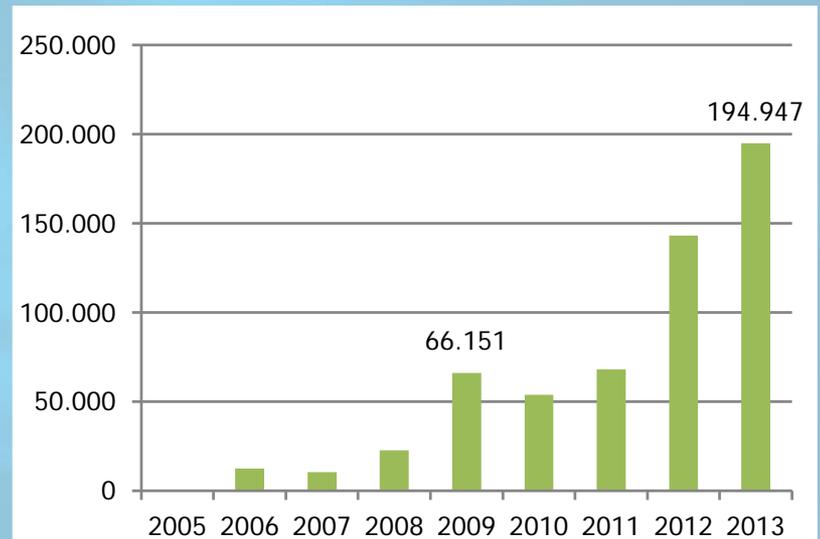
- research infrastructure and datasystems
- involved in three European research infrastructure projects (ESFRI), and international data portals such as the Scheldemonitor and EMODnet
- In the period 2009-2013 more than one third of the project-related incomes was related to these European infrastructures.

# SCIENTIFIC IMPACT: Knowledge exploitation: library

Number of literature requests in the library



Number of titles downloaded from the OMA



# SCIENTIFIC IMPACT: Knowledge conversion

- Webometrics and scholarly impact:
  - Data are heavily cited:
    - each data system is mentioned on 289 different websites on average.
    - *marinespecies.org* (which includes Aphia from VLIZ) has been cited in at least 920 academic publications and two thirds of the remaining databases have been cited in academic documents.
  - Even though VLIZ does not have the scale of several other marine institutions in Europe, it does compete in terms of recognition and impact.
  - Ranking Web of World Research Centers: 108<sup>th</sup> in the world ranking, 46<sup>th</sup> in Europe and 1<sup>st</sup> in Belgium.

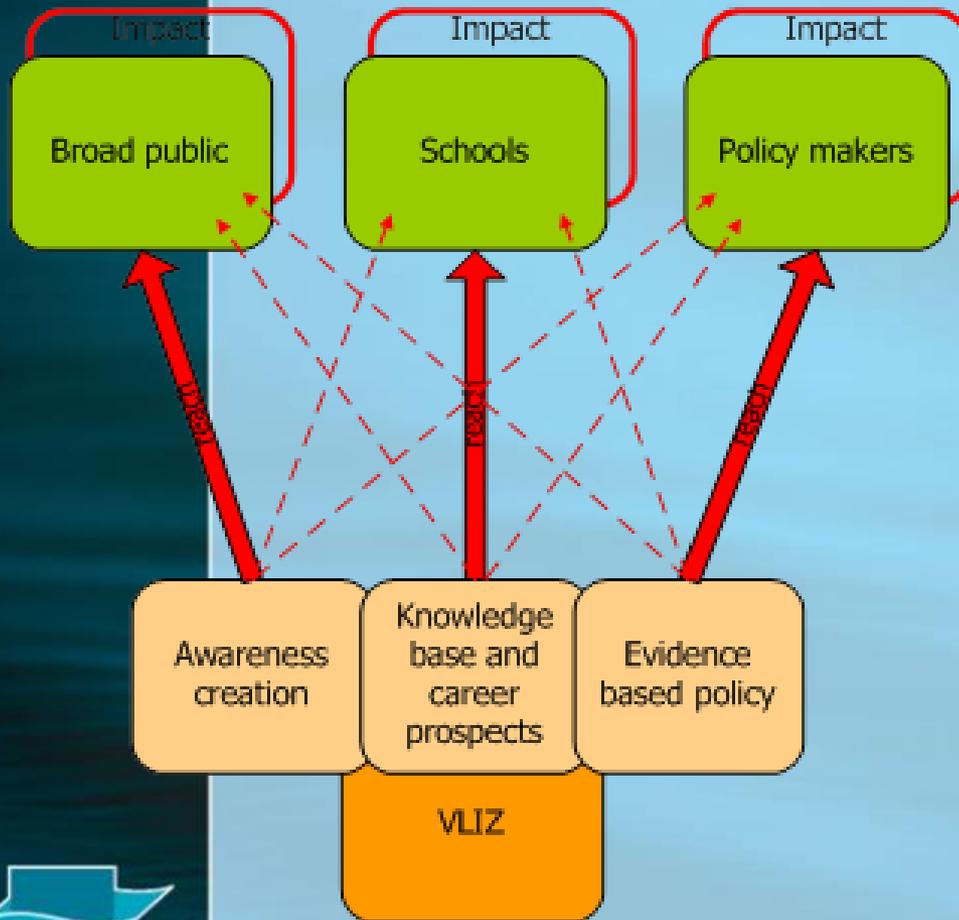
# SOCIETAL IMPACT

Support  
(evidence-based)  
policy making in  
Flanders

Contribute to the  
knowledge base in  
Flanders and promote  
marien related career  
prospects

Create awareness  
about marine  
related societal  
challenges

# SOCIETAL IMPACT

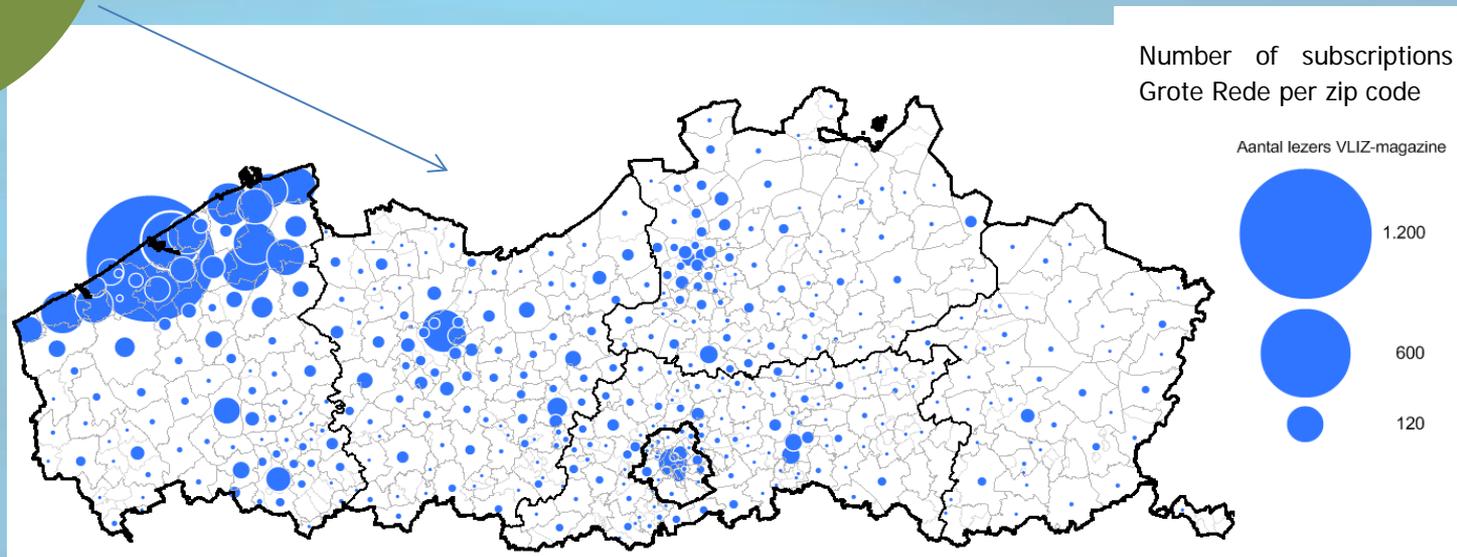
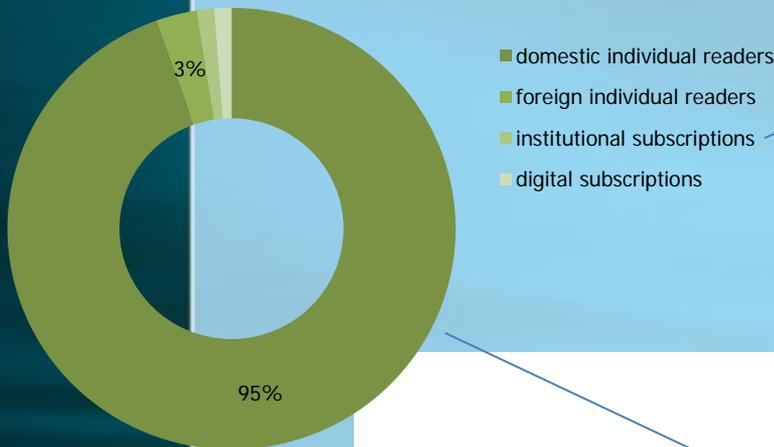


- Three main target groups
- Intended and unintended effects
- Indicator development along the lines of the three target groups and the different areas of impact

# De Grote Rede

## Reader profile

- Visitor centers, nature information centers, libraries, children's farms, zoo, musea,
- News press and media,
- Education and higher education,
- Government and policy makers at local town, province and regional/national level,
- Companies, organisations, associations and councils,
- The European Commission and European Associations located in Brussels.



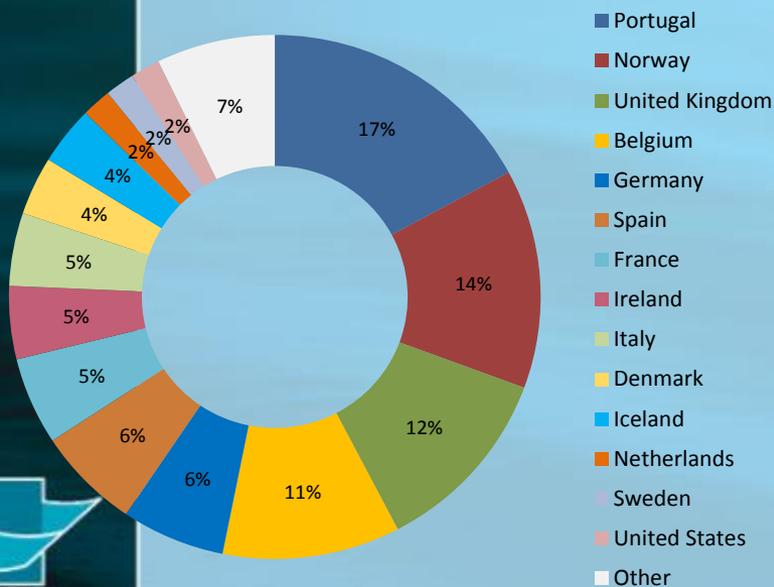
# SOCIETAL IMPACT - BROAD PUBLIC

- Publications and communication:
  - Website:
    - Number of unique visitors multiplied by 1.5 since 2009
  - Media coverage: social media

1,04 million unique visitors

3.5 million hits for pictures

71,000 hits for videos



## LinkedIn:

- 244 followers VLIZ
- >900 Jan Mees
- 122 members from 22 different countries and different backgrounds in marine biotechnology group

Facebook: 685 followers RV Simon Stevin

- majority in Belgium but international outreach
- 68% between 18 and 45 years old,
- 60% male
- Ghent area

Twitter: 709 followers Jan Mees

- Interested by science news, biology, geography
- Majority in Belgium but international outreach

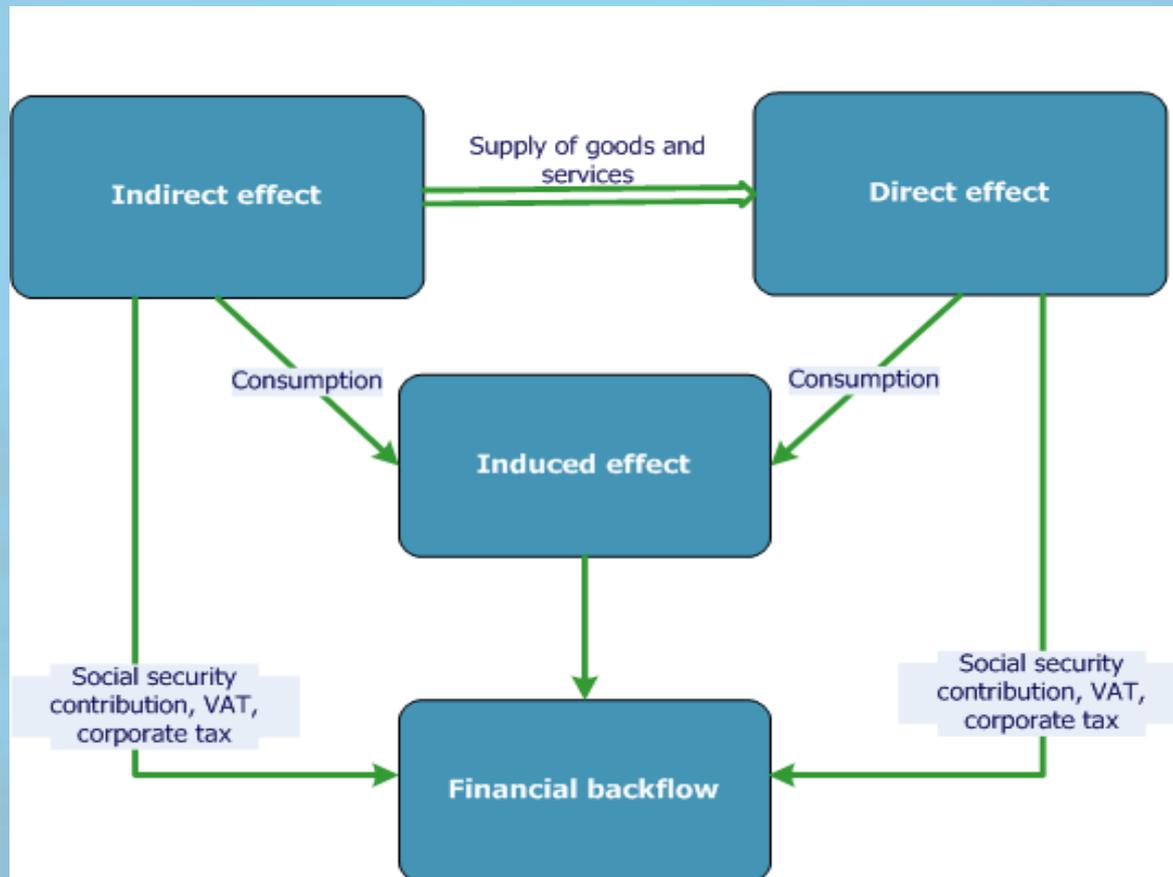
# SOCIETAL IMPACT - POLICY

- VLIZ actions and communication
  - Output: varies each year, on average largest number of information fiches and indicators
  - Networks, advisory committees
  - EMODnet
  - Compendium Coast & Sea: integrated approach and international outreach
- Uptake: reference to VLIZ in policy-oriented documents
  - Mention in policy documents and action plans at Flemish level
  - Ocean literacy in Horizon 2020

# SOCIETAL IMPACT – SCHOOLS AND GUIDES

- Education policy: influence of VLIZ leads to increased inclusion of marine topics
  - In the updated curricula of the secondary education ('Gemeenschapsonderwijs'), marine related topics were increasingly included in the attainment targets of biology, chemistry, physics and natural sciences.
  - The curricula explicitly refer to VLIZ for specific topics or experiments.

# ECONOMIC IMPACT

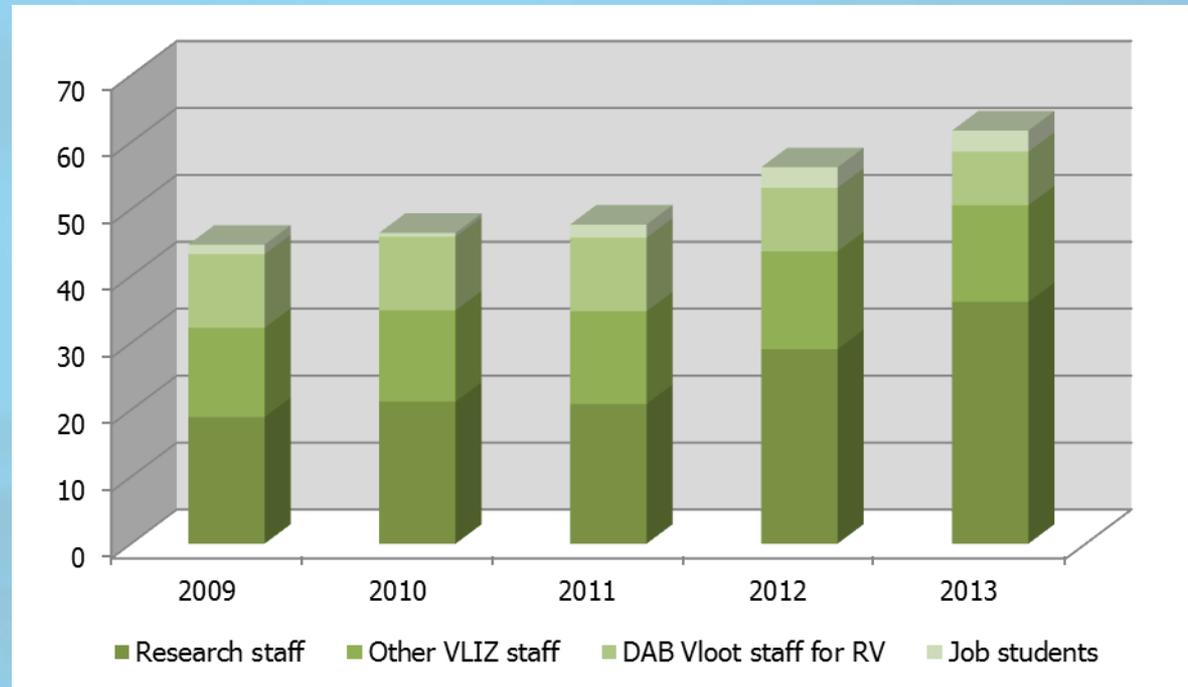


# ECONOMIC IMPACT

- **Three different sources** of economic impact
  - VLIZ' expenditure related to its core activities and investments
  - Expenditure of VLIZ' partner organisations (at the InnovOcean site)
  - Expenditure of visitors to VLIZ and the InnovOcean site
- **Direct + indirect + induced effects** of VLIZ activities
- **Methodological approach**
  - **Institute specific** calculation of first order indirect effects, based on invoices VLIZ (VLIZ' suppliers)
  - Use of **input-output tables** to calculate second order effects (employees spending)
  - Adaptations to general methodology
    - Economic impact of **partner organisations**
    - Economic **spill-over effects to local economy** of VLIZ visitors

# DIRECT ECONOMIC IMPACT VLIZ - EMPLOYMENT

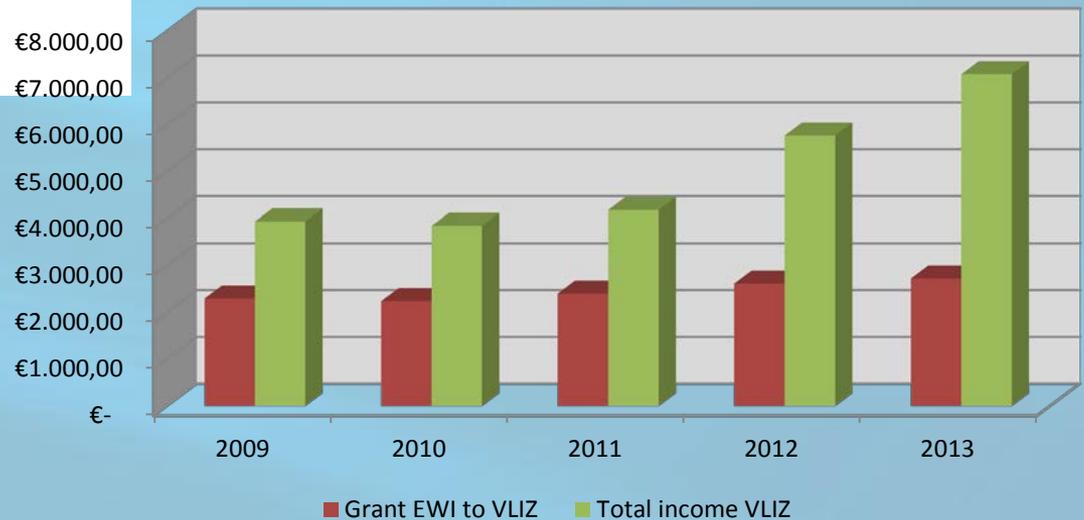
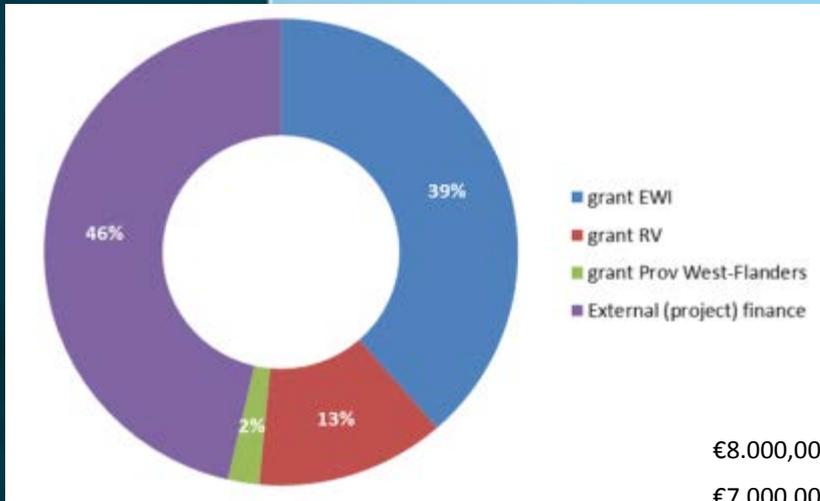
Total employment at VLIZ



2013: 62 FTEs -> 51 FTE core staff VLIZ, 8 FTE DAB Vloot, 3 FTE job students

# DIRECT ECONOMIC IMPACT VLIZ - FINANCE

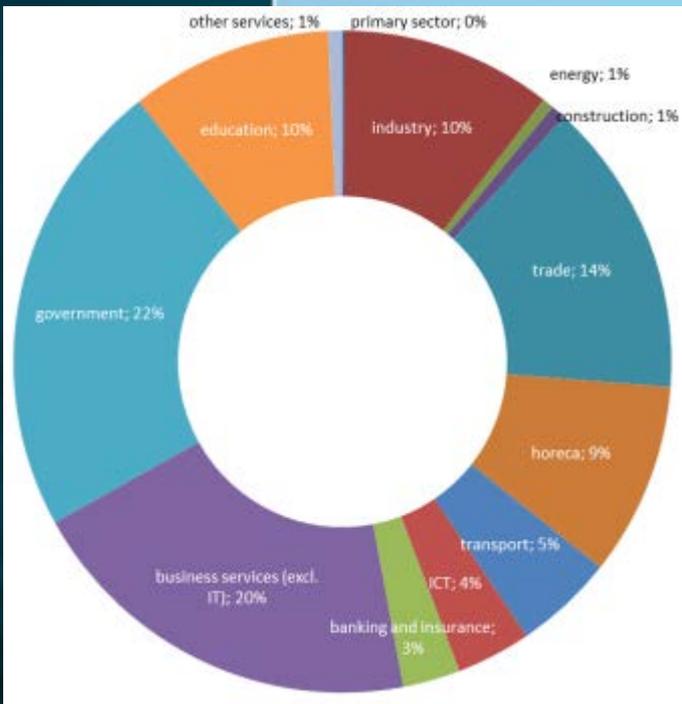
Financing structure VLIZ 2013



Share EWI grant decreased from 60% to 40% between 2009 and 2013

# INDIRECT ECONOMIC IMPACT VLIZ

indirect employment

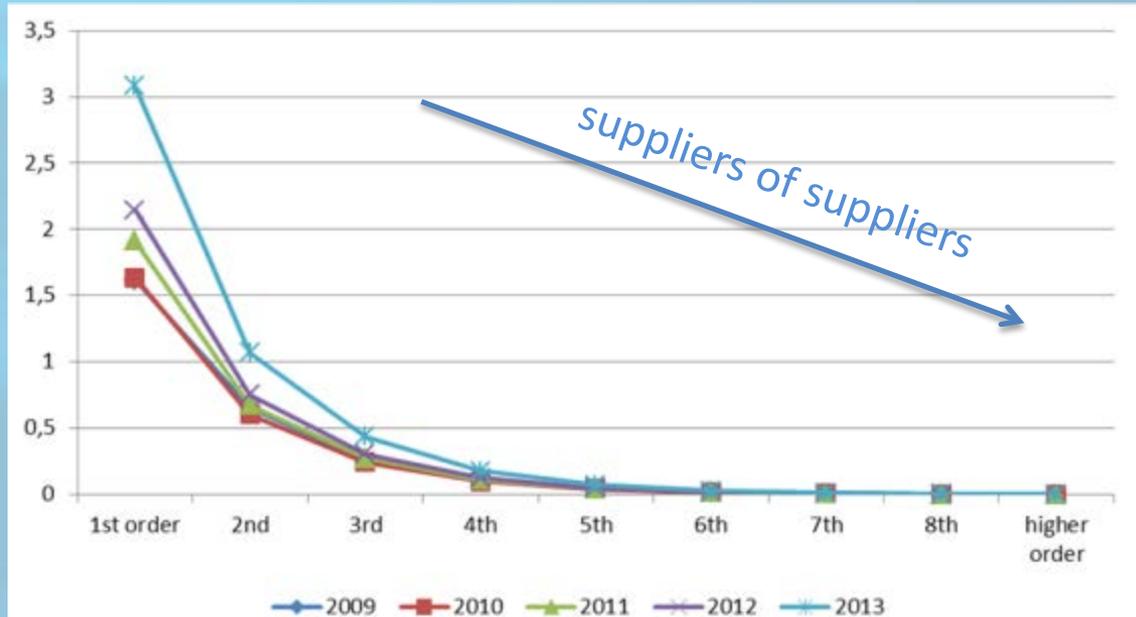


2013:

3.2 mio spending of VLIZ in Belgian economy  
(suppliers + maintenance & operationalisation of  
RV Simon Stevin)

-> 29 FTE indirect employment generation

Increasing indirect economic impact since 2010



# ECONOMIC IMPACT VLIZ – TOTAL EMPLOYMENT MULTIPLIER AND FISCAL RETURN

FTE	2009	2010	2011	2012	2013
Direct <b>VLIZ personnel</b>	44,7	46,5	47,7	56,3	61,7
Indirect (1st order)	13,6	11,2	14,4	16,7	21,1
Indirect (higher order)	5,6	4,0	5,3	7,2	7,6
Direct + indirect	64	62	67	80	90
<b>Upstream multiplier</b>	<b>1,43</b>	<b>1,33</b>	<b>1,41</b>	<b>1,43</b>	<b>1,46</b>

10 FTE → +4,6 FTE upstream

Social security (mio euro)	2009	2010	2011	2012	2013
Direct	0,76	0,84	0,89	1,13	1,27
Indirect	0,37	0,26	0,34	0,52	0,59
Induced	0,05	0,05	0,06	0,10	0,11
<b>Total</b>	<b>1,18</b>	<b>1,16</b>	<b>1,30</b>	<b>1,74</b>	<b>1,98</b>

# ECONOMIC IMPACT VERSUS EWI EFFORT

	2009	2010	2011	2012	2013
<b><u>Impact (direct+indirect+induced)</u></b>					
Employment (in FTE)	67	65	71	85	96
Output (in mio euro)	5,21	4,09	5,10	7,71	9,45
Fiscal and parafiscal return (in mio euro)	2,00	1,81	2,13	2,77	3,17
<b><u>Effort</u></b>					
VLIZ staff funded by EWI (in FTE)	16	17	19	24	26
Grant Flemish government EWI (in mio euro)	2,30	2,25	2,41	2,62	2,73
<b><u>Impact/effort</u></b>					
Employment impact / VLIZ staff funded by EWI	4,26	3,73	3,68	3,59	3,75
Fiscal and parafiscal return / grant EWI	0,87	0,81	0,88	1,06	1,16

VLIZ responsible for 100 FTE in Belgium

Each job funded by EWI → +2,75 FTE jobs in Belgium

Every € invested by EWI in VLIZ → 1,16€ back to Belgian auth's

# DIRECT ECONOMIC IMPACT PARTNERS - EMPLOYMENT

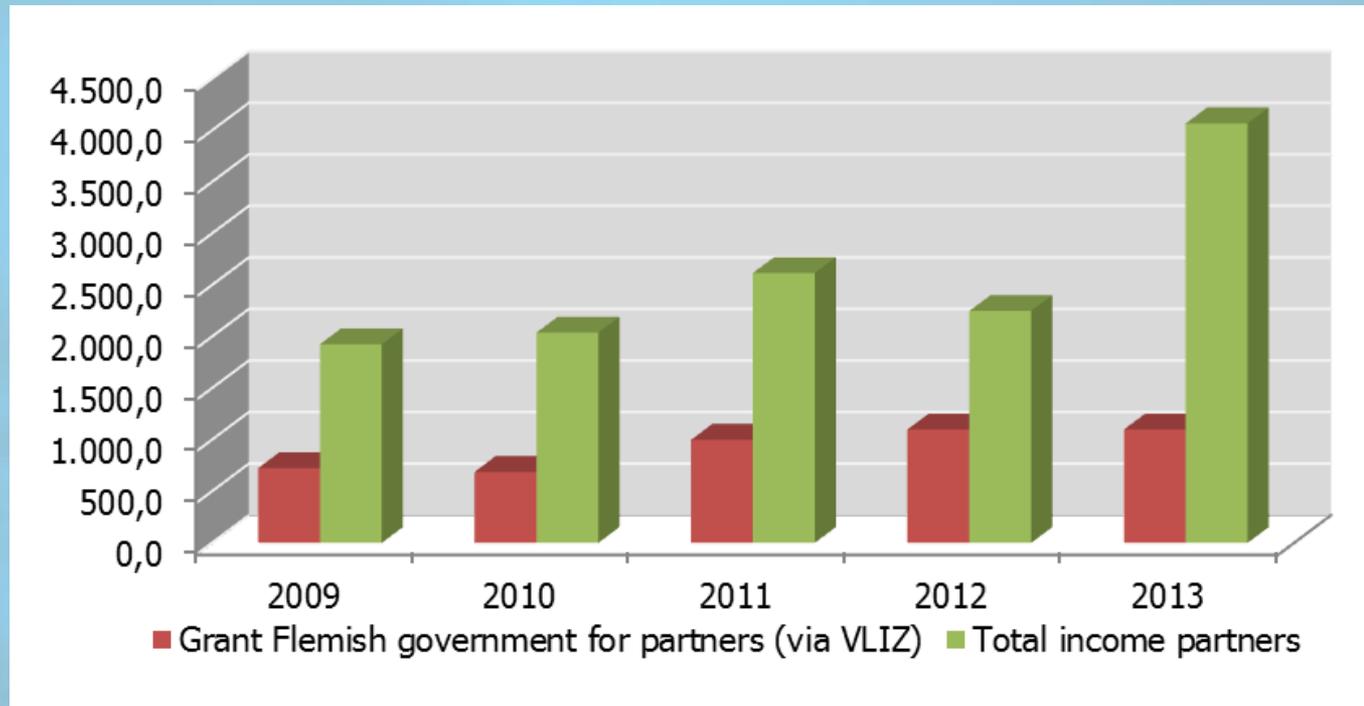
- UNESCO/IOC Project Office for IODE
- EMB Secretariat
- EMODnet Secretariat
- Province of West Flanders – Regional Office Coast
- JPI Oceans Secretariat

Total employment (in FTE)



# DIRECT ECONOMIC IMPACT PARTNERS - FINANCE

- EWI grant for the partners relative to total income of the partners (thd euro)



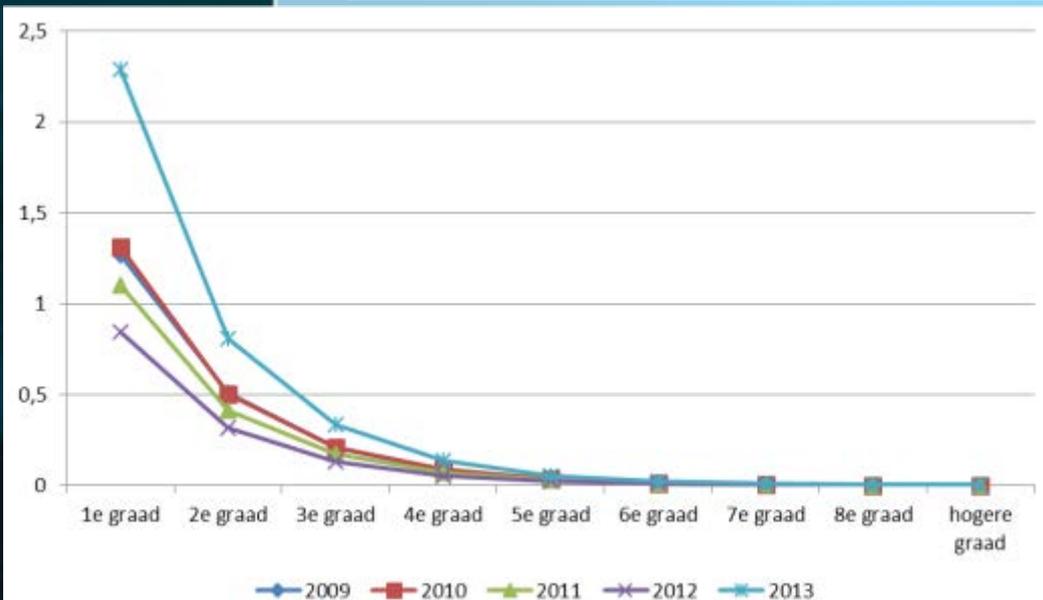
leverage effect of the EWI grant has increased significantly

# INDIRECT ECONOMIC IMPACT PARTNERS

Total spending of partners in Belgian economy 2013 = 2.3 mio euro

Total indirect economic effect of partners in Belgian economy, 2009-2013

	2009	2010	2011	2012	2013
Output (mio euro)	2,14	2,17	1,80	1,38	3,66
Value added (mio euro)	0,68	0,72	0,61	0,47	1,42
Employment (FTE)	11,4	12,5	10,5	7,9	21,0



# ECONOMIC IMPACT PARTNERS – TOTAL EMPLOYMENT MULTIPLIER AND FISCAL RETURN

In FTE	2009	2010	2011	2012	2013
Direct employment on payroll VLIZ (1)	5	4	5	5	8
Other direct employment	10	13	14	14	19
Indirect	11	12	10	8	21
Induced	1	1	1	1	2
<b>Total (2)</b>	<b>27</b>	<b>31</b>	<b>30</b>	<b>28</b>	<b>51</b>
<b>Multiplicator (2)/(1)</b>	<b>5,92</b>	<b>7,05</b>	<b>6,43</b>	<b>5,34</b>	<b>6,33</b>

Each job funded by EWI → +5,3 FTE jobs in Belgium

## Total fiscal and parafiscal return (in mio euro)

	2009	2010	2011	2012	2013
Social security contribution	0,44	0,51	0,48	0,49	0,92
Income tax	0,19	0,20	0,21	0,19	0,35
Corporate tax	0,13	0,13	0,11	0,09	0,22
VAT	0,09	0,10	0,08	0,07	0,19
<b>Total</b>	<b>0,85</b>	<b>0,94</b>	<b>0,89</b>	<b>0,84</b>	<b>1,68</b>

# ECONOMIC IMPACT VERSUS EWI EFFORT

	2009	2010	2011	2012	2013
<b><u>Impact (direct+indirect+induced)</u></b>					
Employment (in FTE)	27	31	30	28	51
Output (in mio euro)	3,56	3,78	3,66	2,78	7,06
Fiscal and parafiscal return (in mio euro)	0,85	0,94	0,89	0,84	1,68
<b><u>Effort</u></b>					
Staff funded by government (in FTE)	5	4	5	5	8
Government grant EWI (in mio euro)	0,72	0,69	1,00	1,10	1,10
<b><u>Impact/effort</u></b>					
Employment impact / staff funded by government	5,92	7,05	6,43	5,34	6,33
Fiscal and parafiscal return / EWI grant	1,17	1,36	0,89	0,76	1,53

Each job funded by EWI → +5,3 FTE jobs in Belgium

Every € invested by EWI in InnovOcean → 1,5€ back to Belgian auth's

# ECONOMIC IMPACT OF VISITORS TO VLIZ AND PARTNERS

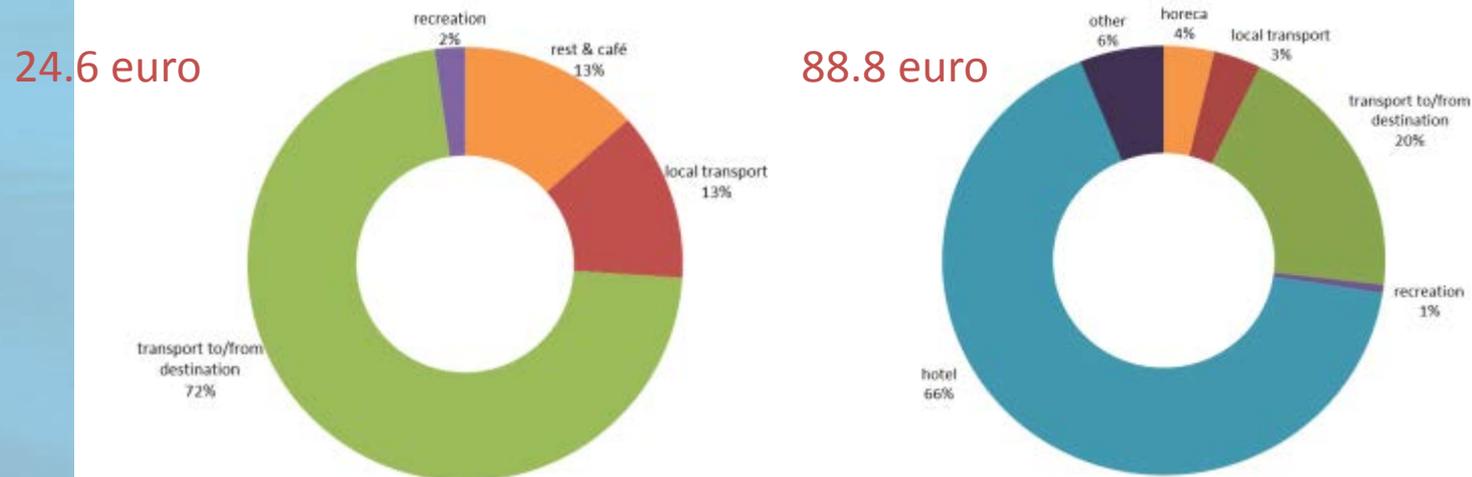
Number of visitor days and overnight stays – partner organisations VLIZ

	2009	2010	2011	2012	2013
Number of visitor days without overnight stay	506	751	599	687	594
Number of visitor days with overnight stay	521	551	506	491	481

Number of visitor days and overnight stays – VLIZ

	2009	2010	2011	2012	2013
Number of visitor days without overnight stay	2,154	1,022	1,024	2,036	1,486
Number of visitor days with overnight stay	114	76	136	137	183

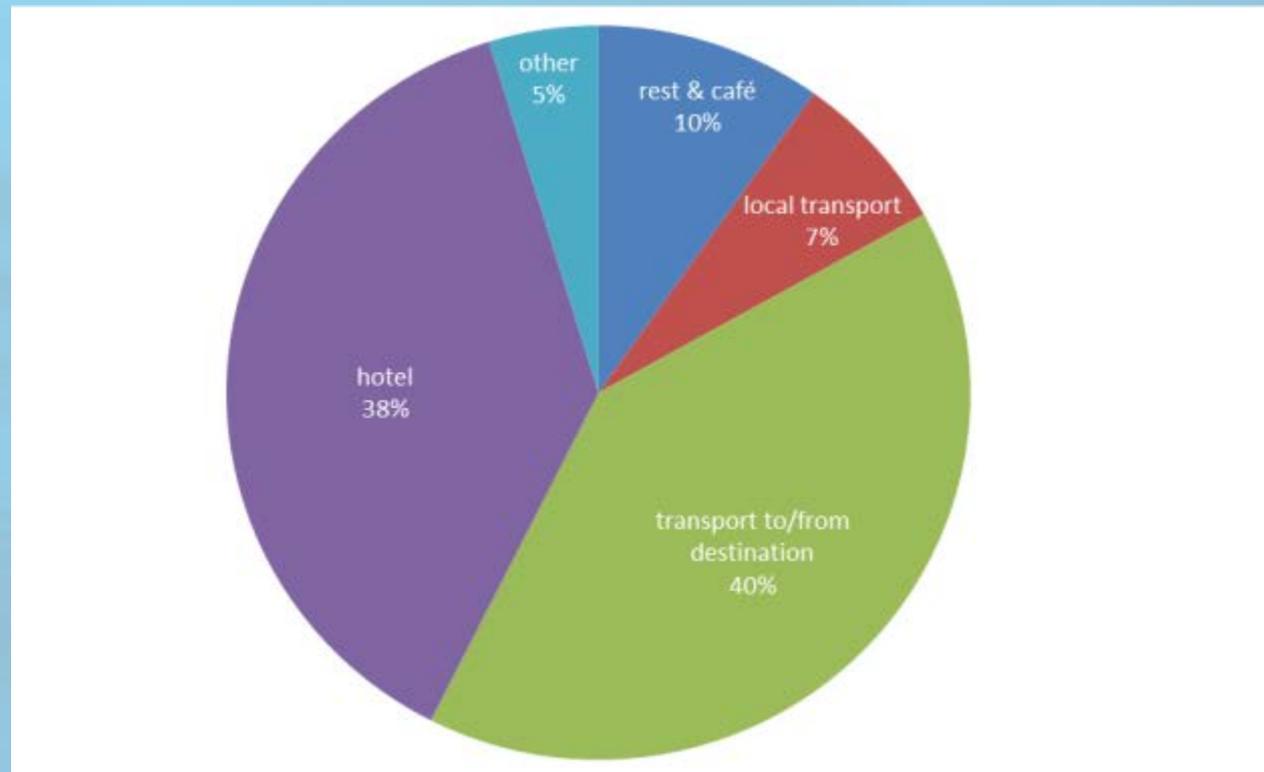
Visitors' spending behavior – MICE day traveller versus tourist



# ECONOMIC IMPACT OF VISITORS TO VLIZ AND PARTNERS

Annual average spending of visitors in the economy 2009-2013: € 68.000. In 2013: € 71.000

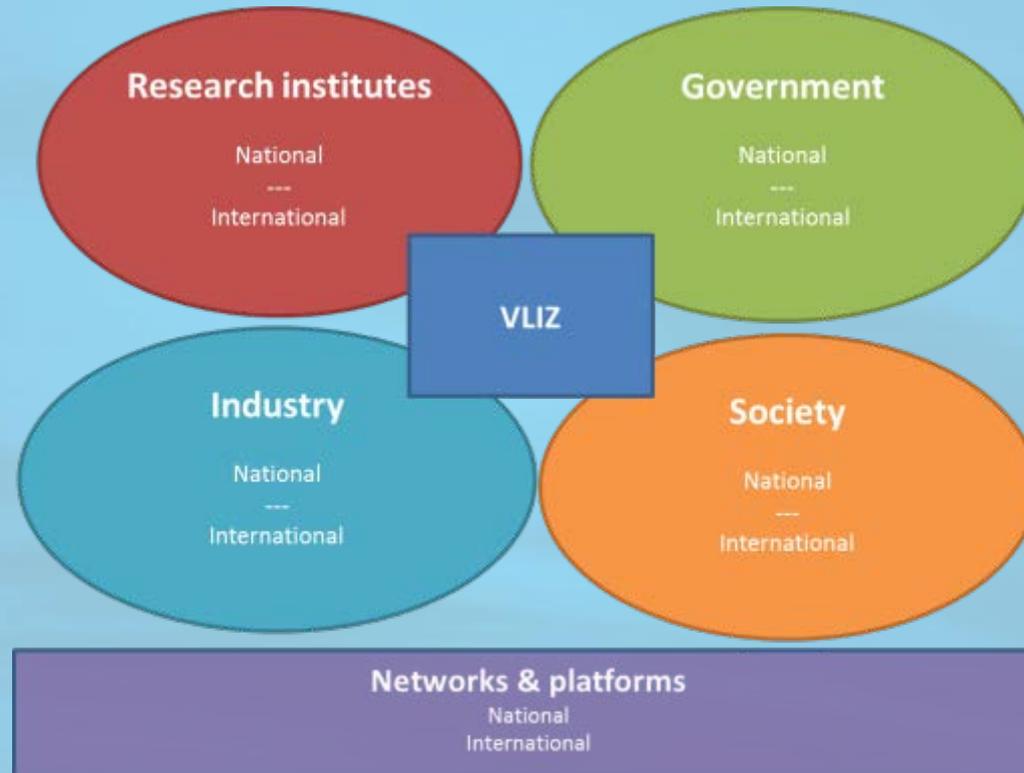
Visitors' spending – sector distribution



# CATALYTIC IMPACT

- Mapping of **local and (inter)national ecosystem** in which VLIZ operates
- Analyse **evolution over time**
- Analyse **VLIZ' contribution** to the development of these ecosystems
- Qualitative analysis
  - Literature study
  - Exploratory interviews
  - Organisation of **stakeholder workshop**: October 20th
  - **Online discussion** in VLIZ community via [discutto.io](https://discutto.io) platform

# VLIZ' ECOSYSTEM - CONCEPT



# VLIZ' ECOSYSTEM - INPUT

## ▶ Exploratory interviews

- Jan Strubbe (ex Waterways and Marine Affairs, Flanders Maritime Cluster)
- Patrick Sorgeloos (UGent)
- Bert Groenendaal (Sioen Industries)
- Bart Verboomen (DEME)

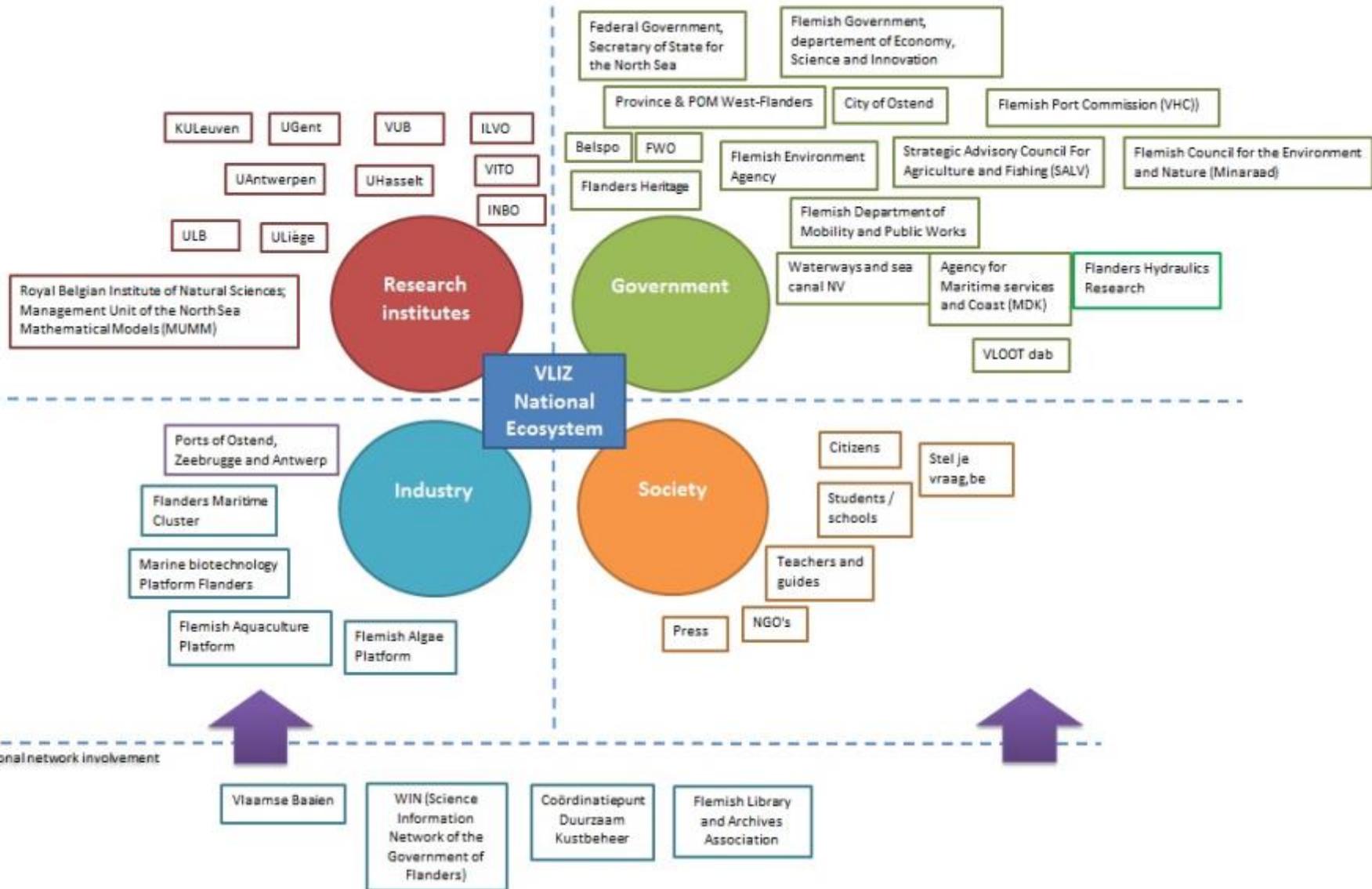
## ▶ Stakeholder workshop

- 21 participants
- Interactive discussion in smaller groups

# CATALYTIC IMPACT – ONLINE STAKEHOLDER DISCUSSION

- ▶ Presentation of 10 'rather provocative' statements about VLIZ
- ▶ Stakeholder discussion about statements
  - Voting / open discussion
  - Invitation to participate to +/- 1.000 stakeholders nationally and internationally
- ▶ Facilitated through online platform [discuto.io](http://discuto.io)
  - [www.discuto.io](http://www.discuto.io)

# National ecosystem - overview



# National ecosystem - summary

## ▶ Research:

- VLIZ is acknowledged for the services it provides: e.g. data management, provision of research infrastructure, ...
- Well networked with Belgian research institutes and universities
- VLIZ is effectively catalysing collaboration in the Belgian maritime research field

## ▶ Government:

- VLIZ is a valuable partner for government agencies active in the maritime field
- Additional advisory work for federal government could further increase VLIZ' impact

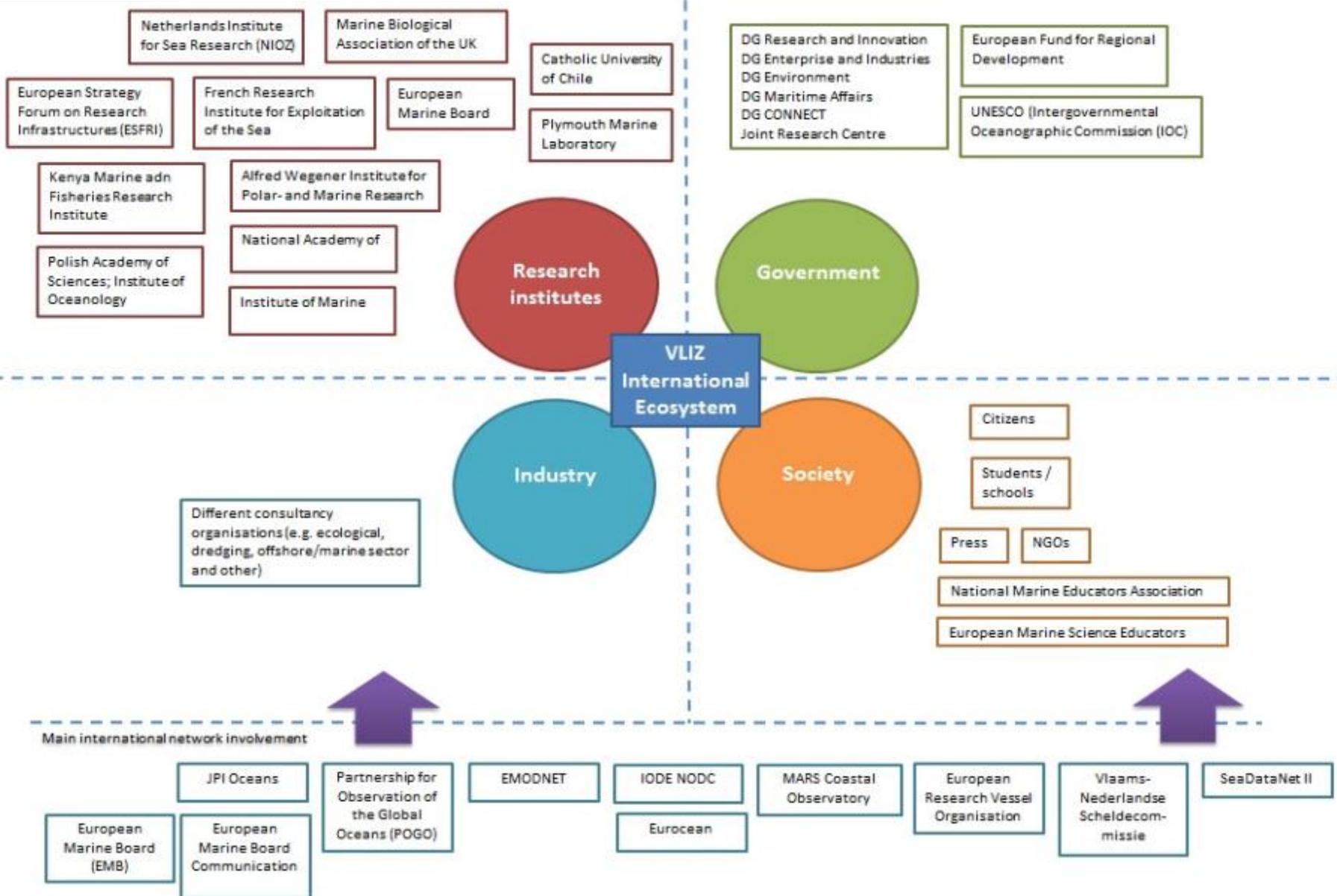
## ▶ Society

- Successful outreach to target groups: students, teachers, guides, citizens, ... through various events and high quality publications
- Many stakeholders emphasized the importance of these activities

## ▶ Industry

- Not a target stakeholder group, but positive relations are maintained
- Keen interest from industry to collaborate more with VLIZ in the future, which could take many forms ... but is in essence a fundamental discussion on the mission of VLIZ

# International ecosystem - overview



# International ecosystem - summary

## ▶ Research:

- Also in Europe and beyond acknowledged for the services it provides: key strength of VLIZ, being **data collection, management and analysis**
- Collaborations and interactions: instrumental to the exchange and valorisation of knowledge and potential mobility of the Flemish and international researchers

## ▶ Government:

- VLIZ is present and involved in several key intergovernmental organisation
- Often together with Flemish partners, active in European Commission, various DGs

## ▶ Society

- Outreach through publications, participation in events etc., although Flanders remains focus
- Involved in different fora relevant to training, education and communication

## ▶ Industry

- Also internationally, strong potential (issue of mandate and perhaps objectivity)

## ▶ Networks

- Impressive: pivotal role in the development of the VLIZ ecosystem, reputation building, strengthening het international dimension of the Flemish maritime community

# OVERALL CONCLUSION

- VLIZ' vision of providing those services and information that were missing from the marine scientific landscape creates additional value for their different target groups in the most complementary and efficient manner.
  - VLIZ' role of 'connecting hub'
- Most significant (multidimensional) impact of VLIZ activities:
  - Building bridges between different parties
  - Acting as integrator and 'dispatcher' of information and knowledge
  - Linking national actors to the international context
  - Creating visibility for the Flemish marine research and context

# SCIENTIFIC IMPACT

Generally speaking:

- ▶ Scientific community = VLIZ' core target group
- ▶ Overall positive assessment of the efforts, quality, results and impact of VLIZ in this field. VLIZ clearly serves a need.
- ▶ Embeddedness of VLIZ in international (research) networks from the start has been a major strength and added value, not the least for the local scientific community.

# SCIENTIFIC IMPACT

In more detail:

- ▶ Knowledge creation:
  - Clearly strong input and leverage indicators
  - With main strengths being the data center and ocean going platforms.
- ▶ Knowledge transformation:
  - Impact is evidenced by strong connection with MRG and reference in (particularly peer reviewed) articles.
  - International cooperation and infrastructure are driving factors for knowledge conversion.
  - Diversity in fields is demonstrated, as well as strong citation impact.
- ▶ Knowledge conversion:
  - Particularly strong impact of VLIZ to create visibility in the national, international and digital community.

# SCIENTIFIC IMPACT

## Recommendations for the future

- ▶ Starting from the strength of VLIZ' interdisciplinary data center and network, identify new opportunities in the current evolution towards (and increased need for) **interdisciplinary research** to tackle societal challenges.
- ▶ Guarantee **quality standards for services** provided to the research community.
- ▶ There is a potential in this also to increase the impact in terms of human capital development through training. At international level (EC) there is a need for **training/peer learning** (with preference to involve MS organisations) for the **deployment of marine research infrastructure**: VLIZ would be well-placed & in addition the certification can open doors at international level.

# SOCIETAL IMPACT

## Generally speaking

- ▶ Target groups: policy makers, educators & guides, broader public.
- ▶ Consensus on positive impact VLIZ
- ▶ Focus currently on generation of targeted information and dissemination.

# SOCIETAL IMPACT

## In more detail

- ▶ Broader public: VLIZ takes initiative and is present on the events or platforms that matter. It thereby creates a **wide visibility** of the Flemish marine research, both locally, nationally and internationally.
- ▶ Policy makers: effects are demonstrated (e.g. Ocean literacy, mention in policy documents) + **science-policy interface** of great value
- ▶ Teachers & guides: balanced geographic reach and participation

# SOCIETAL IMPACT

## Recommendations for the future

- ▶ Room for more proactive approach in policy information and in education – if mandate allows.
  
- => Explicit goals with respect to these target groups in order to develop a **proactive approach** and concrete actions (with dedicated resources). E.g.
  - ▶ Policy:
    - Proactively provide information on relevant topics, insights or developments,
    - Leverage the knowledge of international policy and research to feed back to the regional level.
  
  - ▶ Schools:
    - Dialogue with **fishery schools** on sustainability to create awareness, show methods and integrated approaches.
    - Broaden the reach of existing materials by approaching schools more proactively (e.g. Targeted mailing of science teachers at the start of the year to provide information on the packages, events, competitions etc.)

# ECONOMIC IMPACT

- ▶ Growing economic impact of VLIZ' and partners' activities in the regional economy
- ▶ Positive 'return on investment' for government (overall), both in employment and fiscally
- ▶ Attracting and hosting international partners strengthens the VLIZ cluster economically (next to all other types of added value)

# CATALYTIC IMPACT (1)

VLIZ has strongly contributed to the increase of the international visibility of the Flemish marine/maritime research community.



- ▶ A key player (**a facilitator**) in marine and maritime sciences and the associated national and international community.
- ▶ VLIZ clearly has **leveraged** the 'value' of its ecosystem towards the Flemish but also the international stakeholders.
- ▶ A '**hub**' for the Flemish research community, with a potential to strengthen its position towards the government (as a policy preparatory actor), society and industry.
- ▶ **Internationally**, VLIZ is **well-known**, in particular within the 'inner circle' of those institutions and actors active in marine and maritime **data** collection, treatment and analysis.
- ▶ The national and international ecosystem that VLIZ has developed, and which it is part of today, has had a clear impact on the visibility, recognition and even excellence of the Flemish research community.

# CATALYTIC IMPACT (2)

- ▶ Suggestions for the future
  - Think more explicitly about the spillover effects of **servicing different types of target groups**.
  - Explore new activities in function of needs / gaps in the marine ecosystem (e.g. promoting multidisciplinary, policy-oriented data analysis not done by universities, ...)
  - Further enlarge/strengthen the network in a strategic manner (rather than ad hoc), bearing in mind the ultimate goals of VLIZ.
  - Make goals with respect to **industry** explicit (with government), develop strategy and actions accordingly. Focus on activities that will also contribute to other target groups, e.g. increasing the accessibility of industry infrastructure for scientists. Networking and connecting parties are also options. Depending on the outcome: set up a specific point-of-contact for industry.