

FP7 Maritime Transport Brokerage Event

European Maritime Research Development – Achievements – Challenges

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Acknowledgement:

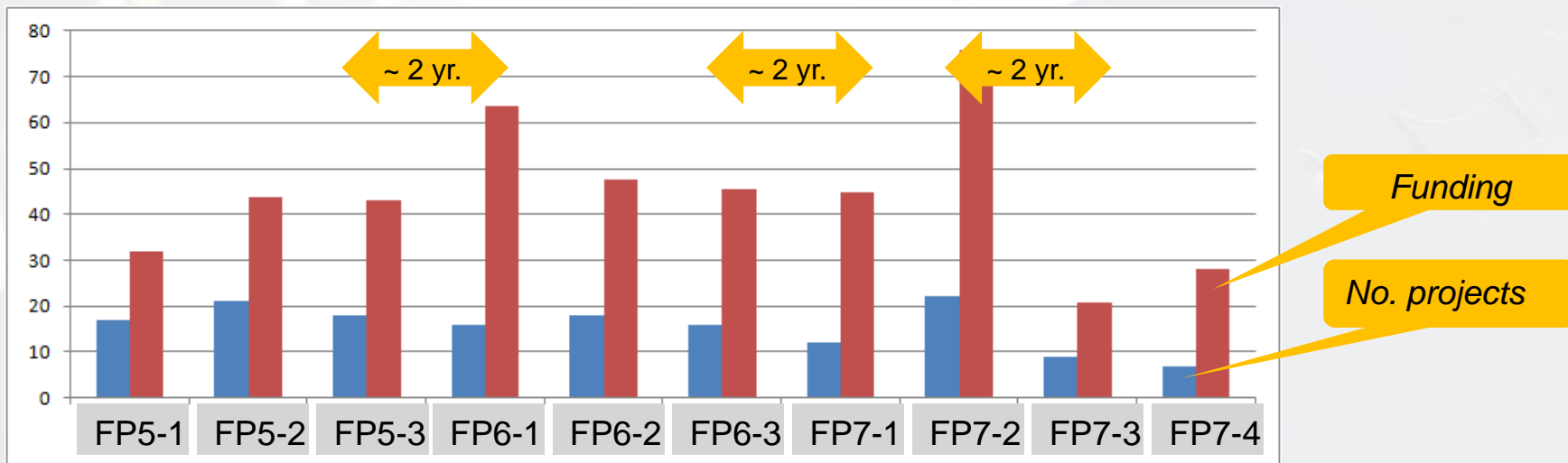
This presentation is using material prepared by CMT as well as by ECMAR and the European Project MARPOS (FP7, SST), the support of which is kindly acknowledged. The views and conclusions represented are however the views of CMT and not necessarily the official opinions of ECMAR or MARPOS.

Content:

- [Maritime Research from FP5 to FP7 – Some Statistics](#)
- [The MARPOS Project](#) and the [Technology Gap Analysis](#)
- [Achievements in Maritime Research](#)
- [Future Challenges and Needs](#)

- maritime research has been continuously funded in different Thematic Priorities;
- the following analysis will focus on **Maritime Technologies** and partly **Transport**
- research on **marine technologies and resources** was funded fragmented in different TPs

	FP5 (1998-2002)	FP6 (2002-2006)	FP7 (2002-ongoing)
	Competitive and Sustainable Growth	Thematic Priority: Sustainable Surface Transport	Thematic Priority: Sustainable Surface Transport (Collaboration)
Transport Logistic chains, transport infrastructure, inter-modality,	Key Action 2: Sustainable Mobility and Intermodality - not analyzed	"A" - Calls Policy Support - coordinated by DG TREN - partly analyzed	"TREN" - Calls Policy Support - coordinated by DG TREN - partly analyzed
Maritime Technologies Shipbuilding, shipping, greening, safety, competitiveness	Key Action 3: Objective 3.2 - Critical Marine Technologies, Sub-Objectives 3.2.1 and 3.2.2 and TPs - analyzed	"B" - Calls Research, technological development and integration - analyzed	"RTD" - Calls Research, technological development and integration - analyzed
Exploitation of the Seas Monitoring, exploration, exploitation, energy, environment, food	Key Action 3: Objective 3.2 - Critical Marine Technologies, Sub-Objective 3.2.3 - partly analyzed	other Thematic Priorities not analyzed	other Thematic Priorities and OCEAN partly analyzed (only OCEAN)



Impressive Figures:*

- More than 150 maritime projects funded, some 450 m€ funding spent;
- This corresponds to more than 900 maritime researchers co-financed annually!**
- Funding per FP increased, but annual funding in FP7 dropped by about 20% due to time between calls and joint calls;
- Funding share of large and small instruments is almost stable since FP6:
average per project FP5 – 2.05 m€, FP6 – 3.13 m€, FP7 – 3.29 m€ (excluding 7-4)

* Information from evaluation reports, statistics prepared by CMT, all project types

** Assumptions: 60% average funding rate, 3 years average project duration, 60k€ annually per researcher

Results of FP7 – a maritime view (SST, excluding OCEAN):

- so far 4 Calls in FP7 (2007, 2008, 2010 und 2011)
- around 30% proposals funded (although ca. 60% of proposals passed thresholds)
- decreasing number of proposals (reasons: success rate, specific topic descriptions?)
- since 2010 ca. 5 m€ maritime budget in Joint Calls (not in statistics)

Maritime Statistics Call 1 to 4 SST		Call 1	Call 2*** 2008	Call 3 2010	Call 4 2011	Total	Average
Total number of proposals*	[number]	62	67	25	23	177	44
Total requested funding	[k€]	N/A	227.083	70.895	62.381	360.359	120.120
Number of proposals above threshold	[number]	30	46	14	12	102	25,5
Number of proposals funded**	[number]	11	22	9	6	48	12
Success rate by number of proposals	[%]	18	33	36	26		27
Total recommended funding****	[k€]	48.330	75.845	20.892	25.233	170.300	42.575
Average cut of funded projects	[%]	24,42	15,90	9,60	N/A		16,64
Total funding requested by successful proposals	[k€]	N/A	142.872	45.744	38.588	227.204	75.735
Missing budget to fund all successful proposals****	[k€]	N/A	84.211	24.853	13.355	122.419	40.806
Percentage of budget missing	[%]	N/A	58,94	54,33	34,61	53,88	49,29

Decreasing number of proposals...

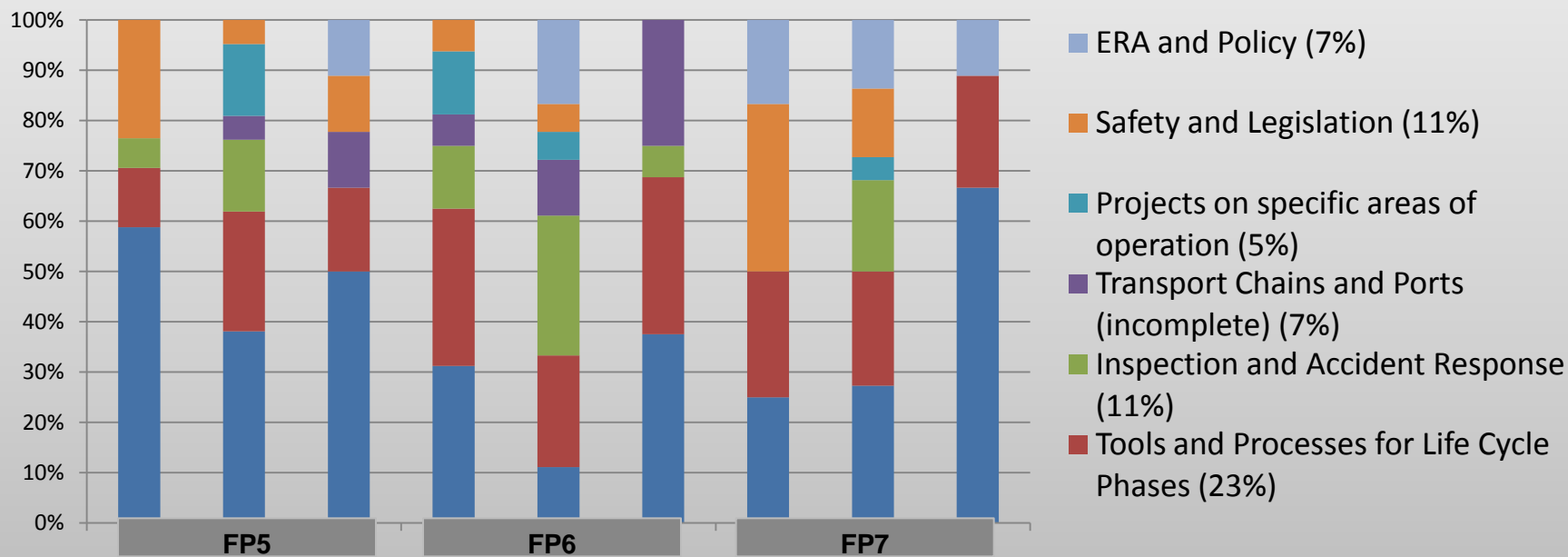
... and projects

And insufficient budget

* Information from evaluation reports, statistics prepared by CMT, all project types

- Main areas covered by EU maritime research prevail despite differences in the Framework Programmes: **Greening, Safety, Modal Shift and Competitiveness**
- Extensive analysis done by CMT in the MARPOS project *

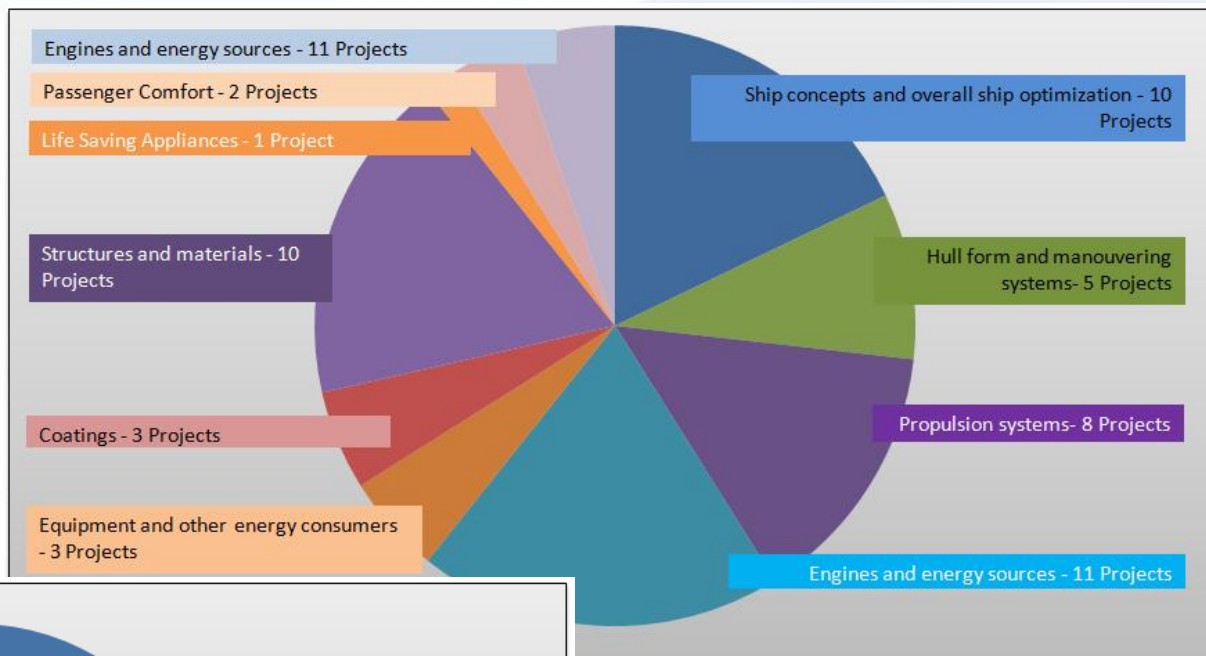
Maritime Projects per Area – FP5 to FP7-3 (share by number of projects)



* Allocation of projects to sub-topics by expert judgement (disputable)

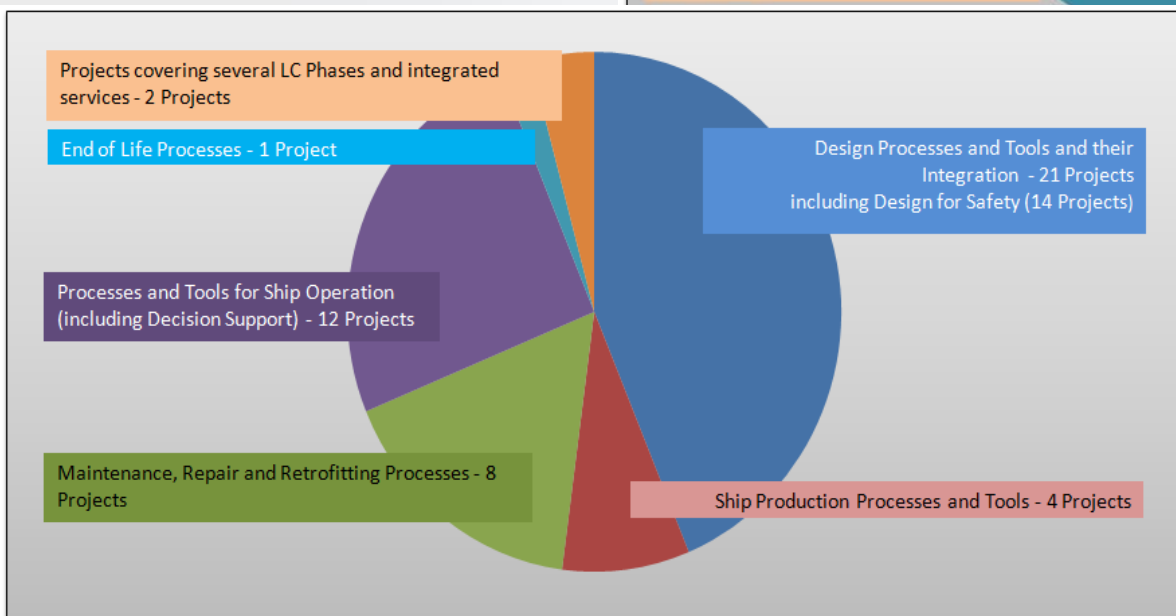
Maritime Projects on Ships and Ship Systems – FP5 to FP7

(56 projects)



Maritime Projects on Life Cycle Processes and Tools – FP5 to FP7

(48 projects)



- Analysis done by CMT;
- allocation of projects by expert judgement;
- based on number of projects;
 - 1 project – 1 area;
 - more statistics available (contact ECMAR or CMT)

Acronym	Title	Coordinator	Funding	
RETROFIT	Retrofitting Ships with New Technologies...	CMTI (NL)	~ 3 m€	CP-FP
GRIP	Green Retrofitting Through Improved Pro-pulsion	MARIN (NL)	~ 3 m€	CP-FP
REFRESH	Green Retrofitting of Existing Ships	VDelta (UK)	~ 3 m€	CP-FP
HERCULES-C	Higher Efficiency ... Engines	ULEME (DE)	~ 10 m€	CP-IP
DEECON	Innovative After Treatment... of Diesel Engines	BRUNEL (UK)	~ 3 m€	CP-FP
MOVE-IT	Modernization of ... Inland Waterway Transport	SMR (NL)	~ 3 m€	CP-FP
FOUL-X-SPEL	... Antifouling Technology ...	IST (PT)	~ 2,8 m€	Reserve?

- Information based on Evaluation Summary Reports;
- Projects above are not (yet) in statistics in previous slides;
- strong focus on green retrofitting;
- Projects presumably in Contract Negotiations – detailed status not known by CMT;
- Evaluation results of OCEAN available, but funded projects not known yet.

The MARPOS (Maritime Policy Support) Project



- **Coordination Action** funded by European Commission under FP7 – SST;
- **Aiming at**
 - analysing the **outcome of previous research** and establish a **data base**;
 - identifying **research drivers** and **technology gaps**;
 - identifying **future research needs** and develop a comprehensive **research agenda**.
- **Coordinator:** Hellenic Institute of Transport, Greece (CERTH-HIT)
- **Partners:** ECMAR, Dutch Maritime Network, Fundacion Valenciaport, Klaipeda Shipping Research Centre, ISL Bremen
CMT was involved on behalf of ECMAR to lead the Technology Gap Analysis
- **Methodology:** Internet recherche and public domain publications;
Interviews with project coordinators and partners;
Use of internal project reports (where available)
Technology Gap Analysis using ECMAR experts for editing
- **Results:** presented at MARPOS-CASMARE conference April 2011, Brussels
www.maritimetransportresearch.com – data base and reports
Technology Gap Analysis and Agenda further developed by ECMAR (www.ecmar.eu)

The MARPOS Technology Gap Analysis (1)



- **Areas** pre-defined by MARPOS, broken down by ECMAR;
- Analysis performed by **ECMAR experts** using material provided by MARPOS and own material;
- covering **128 pre-selected projects** from FP5 to FP7-3, multiple choice possible;
- Overview table below:

Clusters and Topics		Editor	Projects covered			Total
			FP5	FP6	FP7	
COMPETITIVENESS	COM-1 Competitive SHIPPING					
	COM-1-1 Innovative Ship Concepts	CMT	0	1	4	5
	COM-1-2 Shipping Operations, e-maritime	BMT	2	2	3	7
	COM-1-3 Ship Shore Interfaces and Ports	BMT	4	4	0	8
	COM-2 Competitive SHIP DESIGN					
	COM-2-1 Design tools for structural reliability	LR	3	2	1	6
	COM-2-2 Design tool integration	CMT	1	2	1	4
	COM-3 Competitive SHIP PRODUCTION					
	COM-3-1 Structural materials and combinations	CMT	5	6	3	14
	COM-3-2 Coatings and coating processes	CMT	6	1	1	8
	COM-3-3 Production equipment and processes	CMT	5	3	1	9
	COM-3-4 Process organization and integration	CMT	1	4	0	5
	COM-4 Competitive LIFE CYCLE SERVICES					
	COM-4-1 Inspection and maintenance	CMT	6	4	2	12
	COM-4-2 Repair, retrofit and dismantling	CMT	2	4	3	9
COM-4-3 Life Cycle Assessment and Sevices	CMT	0	4	2	6	

continued...

The MARPOS Technology Gap Analysis (2)



... continued

ENVIRONMENT	ENV-1	Reducing GAS EMISSIONS					
	ENV-1-1	Alternative Fuels	MARINTEK	1	3	3	7
	ENV-1-2	Exhaust gas after treatment	MARINTEK	0	1	1	2
	ENV-1-3	Low emission engines	MARINTEK	2	2	3	7
	ENV-1-4	Green ship operations	MARINTEK	0	2	4	6
	ENV-2	Reducing OTHER EMISSIONS					
	ENV-2-1	Airborne and underwater noise	MARINTEK	2	1	3	6
	ENV-2-2	Emissions by paints	MARINTEK	2	1	1	4
	ENV-3	Impact by WASH and BALLAST WATER	MARINTEK	1	1	0	2
	ENV-4	EMERGENCY Intervention	MARINTEK	1	4	3	8
ENERGY	ENE-1	Optimizing RESISTANCE and PROPULSION					
	ENE-1-1	Resistance and Drag	HSVA	5	3	3	11
	ENE-1-2	Propulsion	HSVA	6	1	4	11
	ENE-2	Increasing ONBOARD EFFICIENCY					
	ENE-2-1	Engines	CMT/MAN	3	1	2	6
	ENE-2-2	Alternative Energy Sources and Energy Mgmt.	CMT	1	1	6	8
SAFETY	SAF-1	Improving SAFETY by DESIGN	S@S	10	7	4	21
	SAF-2	SAFE Shipping Operations	S@S	3	5	6	14
	SAF-3	SECURITY	S@S	0	0	1	1
HUMAN	HUM-1	DECISION SUPPORT Systems	BMT	5	3	2	10
	HUM-2	Improving PASSENGER COMFORT	BMT	1	0	1	2

The MARPOS Technology Gap Analysis (3)



- for each area and cluster the following information was assessed:
 - **Background** and specific **research drivers**;
 - **State of the Art** achieved to date using available information and expert judgement; where necessary, the sub-clusters were further broken down into technical aspects;
 - **Technology and knowledge development needed** in future;
 - where appropriate, **support needed to facilitate the application** of results (e.g. rule and legislation development) was highlighted;
 - **Potential impact of future research** in the area on society and the maritime industry
- **Conclusions and recommendations** were given and harmonized with existing research strategies (WATERBORNE SRA, ECMAR SRA)
 - technical development needs;
 - instruments and implementation of future calls.
- A very complex and detailed exercise providing **material for**
 - **companies and researchers**: state of the art and useable results;
 - **policy makers and administration**: impact of research and future call priorities;
 - **WATERBORNE and Associations**: to further develop research agendas

- Specific **Knowledge and Technology Development Needs** are listed in MARPOS in technical detail;
 - **Greening, Competitiveness** and **Modal Shift** remain challenges for waterborne transport ;
 - The rapid development of **offshore markets and services** (renewable energies, resources) calls for intensified and harmonized research, in addition to transport research;
 - The **protection of oceanic environments** needs technologies which should be developed in cooperation with marine research.
- > Those areas are reflected in the **WATERBORNE Declaration** towards HORIZON 2020 which comits an annual industry contribution of about **90 m€** (+ EC co-funding)
- For details contact WATERBORNE TO at www.waterborne-tp.org*
- **international rule development** needs a scientific basis and corresponding research;
 - the development of innovative technologies shall be accompanied by **integration** and **ship concepts** to ensure optimal holistic solutions and economic impact;
 - **continuous research** along **strategic lines** is needed – isolated projects rarely solve problems and achieve impact;
 - a **Think Tank** with the best experts is needed at WATERBORNE level to continuously develop and update strategies and to assess impact of projects.

See CMT comments to [Green Paper Consultation](#)

(1) ... to the „researching“ waterborne community:

- **HAVE YOUR SAY** – Democratic decisions need your feedback !!
 - Get actively involved in [European Associations \(WATERBORNE\)](#) and „challenge them“;
 - Express your views in the public consultations launched by the Commission;
- **KNOW and FOLLOW YOUR NEEDS**
 - Define your own [R&D strategy](#), agenda and targets and follow them in projects;
 - committ the necessary [resources](#) – be an active partner;
 - do you really need research – or is it more Technology Transfer you aim for?
- **DO NOT GIVE UP** – [submit good proposals](#)
 - Collaborative European research is worth the effort;
 - you may ask for professional help to help with administration and bureaucracy.

(2) ... to the WATERBORNE platform and its Associations:

- **PLAY THE MUSIC** – rather than „dancing to external initiatives“
 - [proactively](#) develop strategies and fight for it;
 - have your say in [offshore renewables](#), [environment](#) ... not just transport;
- **BE EFFICIENT**
 - use more [synergies between associations](#) and projects;
 - [involve](#) industry players and research drivers [more directly](#);
 - find the right contacts to speak for the right topics;

(2) ... to the WATERBORNE platform and its Associations (cont.):

- **PROVIDE SERVICES** – to the maritime community
 - Technology transfer to smaller companies;
 - information exchange and cooperation between projects;
 - support to the researching community in everyday administrative problems, IPR...

(3) ... to the European Commission Services:

Note: We appreciate your work !

- **TRANSPARENCY AND INFORMATION**
 - Call texts are public – getting information about call outcomes is much more complicated (especially OCEAN and TPT);
 - a list (no confidential detail) of useable project results would certainly increase impact;
- **TRUST IN RESEARCHERS and FLEXIBILITY**
 - leave space for creative ideas in less prescriptive call texts;
 - research needs flexibility to adjust work plans and budget to justified needs – in practice and not just on paper;
 - new IT tools and templates are helpful – but there should be a certain flexibility.
- **Foster COOPERATION AND NETWORKING**
 - revive „Thematic Networks“ rather than policy driven CSAs?

*Thank you for your attention!
Questions and comments are welcome !*



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