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CONNECTING SCIENCE WITH SOCIETY

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First progress report on science - stakeholder Interaction

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1. Introduction

EU-PolarNet has a clear mandate to co-design an integrated European Polar Research Programme together with different stakeholders from the beginning of the creation process. By that, it shall guarantee that the research programme will generate tangible benefits for society. Work Package 4 of the project (Interaction with Stakeholders and end-users) has identified stakeholders (deliverable 4.5) related to the polar regions and the generated stakeholder map has been used to reinforce the interactions and promote stakeholder participation in different surveys and events. EU-PolarNet has been actively searching for interaction with stakeholders and various possibilities of engagement have been used, promoting participation at established events, such as the Arctic Circle Assembly; SCAR Conferences and Arctic Frontiers, and organizing several stand-alone events.

2. Past and ongoing stakeholder interaction activities

The stakeholder related events organized by EU-PolarNet cover different categories. In most cases, the interaction took place within the framework of larger events, where EU-PolarNet organized breakout sessions or side events. On other occasions, EU-PolarNet organized special events targeted at particular stakeholder groups. EU-PolarNet has used a wide range of opportunities available to interact with stakeholders, including **Town Hall meetings** at European institutions or at large conferences (i.e. AGU, SCAR), **policy briefings** with European and national policy makers in Brussels, **stakeholder meetings**, workshops and sessions during polar conferences (e.g. Arctic Circle, Adaptation Futures, ICASS IX), or **side events** during international climate conferences (such as COP21, COP22 and COP23). One major effort was a public online stakeholder **consultation**, in which the opinion of over 500 stakeholders were obtained and analyzed, identifying the research priorities for peoples and institutions living, working or having research interest in the polar regions. A particularly intensive transdisciplinary interaction was marked by the **White Paper Workshop** held near Madrid (Spain), in which 50 participants were invited to develop ideas for a set of polar White Papers. Participants from funding agencies, business, indigenous peoples, infrastructure operators and research were working closely together during this five day workshop.

2.1 Examples of the activities

a) Stakeholder Survey

EU-PolarNet conducted a stakeholder engagement survey at three events (the EU-PolarNet Town Hall Event 2016 in Brussels, the Arctic Circle 2016 in Reykjavik, and the WOC Sustainable Ocean Summit 2016 in Rotterdam), where printed surveys were handed out to all participants. The same survey was published on the EU-PolarNet website alongside an online survey on polar priorities in April 2017, of which the stakeholder survey is still available today. Most replies (263 out of 302) were received through the online survey.

In the survey, participants were asked about their motivation for engaging in research projects, the stage of a research project they wanted to get involved in and how they were best involved in a research project. These three questions offered multi-choice options, which aimed at covering key areas of motivation (such as staying informed, receiving information for policy making and defining research questions), stages of engagement (from project planning to dissemination) and modes of engagement (such as meetings, workshops and personal dialogues) respectively.

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It gives valuable insights to how stakeholders would like to get engaged in research projects and builds the basis for future efforts in targeting engagement activities to specific stakeholders groups. The results for example suggest that academic stakeholders are keen to participate from the problem definition to the dissemination of the final results, whereas many non-academic stakeholders preferred getting involved in the dissemination of results and in putting these in use for informed decision-making.

b) Stakeholder workshops

Three stakeholder workshops were organized covering the following themes: health and well-being, Arctic ecosystems and ecosystem services, and climate-related effects on the Arctic cryosphere and adaptation options. These half-day workshops were held in conjunction with large polar conferences and built upon the input from sessions held during the respective conference. During the workshops scientific experts from a wide range to social and natural science disciplines from Europe and North America, representatives from indigenous peoples, local communities and practitioners discussed stakeholder relevant research needs, which will be incorporated in the integrated European polar research programme.

c) Online stakeholder consultation

An online stakeholder survey was designed to feed into the white paper process. The survey aimed at giving stakeholders a chance to state where they saw challenges and opportunities arising in the Polar Regions (especially in the region where they lived or worked in), which should be solved by future research. The survey was conducted during the spring - early summer 2017 and personalized emails in English, Swedish, Norwegian, Finnish, Russian, German, Spanish, and Portuguese were sent to over 1000 individuals either living or doing research in polar regions. In addition the link to the survey was published widely in the social media and web sites.

The survey comprised a short list of demographic questions, including the area of residence, nationality and gender and one main question:

What are the most important topics in relation to your work and/or everyday life (either locally, nationally or internationally) in the Polar Regions that should be solved by future research?

Respondents were able to list three topics, which were also was asked to be categorized under one of the five overarching themes:

- People and societal issues
- Climate and cryosphere (such as sea ice, glaciers, ice sheets and permafrost)
- Sustainable resources and human impact
- Polar biology, ecology and biodiversity
- New technology

The survey was held in English. However, respondents were able to answer in their national language if preferred.

Over 500 answers received were clustered by the themes and topics and prior to the White Paper Workshop the experts taking part to the Workshop voted the most important ones to be developed further in the workshop.

d) White Paper Workshop

The white paper workshop had the purpose of developing the ideas and structure of a number of white papers about the different research needs on 5 different themes: polar biology, climate and cryosphere, technology, people and societal issues, as well as sustainable resources and human impact. The workshop involved stakeholders from different sectors including science, business, indigenous peoples, administrations, etc. Jointly the participants identified main research needs of societal relevance within the five overarching themes, which should be addressed by future research. The research needs were based on the results from a public online survey (see c. The writing of these five white papers is still in process and will be finished in next months).

e) Side Events at the UN Climate Conference COP23

EU-PolarNet was co-organiser of three polar side events at the COP23, which was organised by Fiji and took place in Bonn, Germany:

- Arctic States and Small Island States: Two regions inextricably linked through climate change; organized by EU-PolarNet, ICE-ARC, Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), the Alfred Wegener Institute and the British Antarctic Survey. This session provided an opportunity for influential leaders to demonstrate the dramatic climate driven changes that are occurring in the fundamentally different regions the Arctic and Small Island Developing States explain why the international community must increase the ambition of its mitigation and adaptation efforts, and provide their vision for outcome of the COP23.
- Adaptation Now! But how? How climate research in the polar regions is influencing adaptation strategies for Small Island States; organized by EU-PolarNet, ICE-ARC, Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), the Alfred Wegener Institute and the British Antarctic Survey. This side-event provided an excellent opportunity to better understand the adaptation challenges and the possible financing mechanisms required to support resilience building and adaptation (or even migration) processes. By bringing together science, policy and society we learned more about the triggers of global sea-level rise and the impacts especially on Arctic and Small Island Developing States.
- Polar insights for climate action: Arctic science contributions to implementing the Paris Agreement, co-organised by the EU Arctic Cluster. This session provided up-to-date and policyrelevant information on Arctic change and its global implications, including thawing permafrost, the contribution of melting glaciers and ice sheets on the global sea level, the influence of the Arctic on the global oceans, and changing weather patterns.

f) Town Hall Event in Brussels

Themed "Towards the 1.5°C climate goal – Perspectives from the Polar Regions" the EU-PolarNet Townhall Event's objective, which was held on 27th September 2016 in the Royal Belgian Institute of Natural Sciences in Brussels, was to explore how future polar research projects can contribute to limiting global warming to a worldwide average of 1.5°C – while bringing tangible benefits to the European society. To consider the wide range of interests and needs, EU-PolarNet brought together polar science experts with policy makers, industry and NGO representatives, as well as local and indigenous communities. In total around 110 people participated at this full-day event. Keynote addresses and high-level expert panels set the scene for thought-provoking discussions focussed on what European society needs from polar research and what Europe's priorities for polar research should be.

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2.2 Evaluation of stakeholder interaction

The consortium has invested much time and effort in interacting with stakeholders, over 10 events per year, from different stakeholder group. The maximum number of events was held in fall-2017 when 5 interactions were organized in only three months (figure 1). This demonstrates that the consortium is fully aware of the relevance of this point and makes great investment of time and resources to cover this aspect.

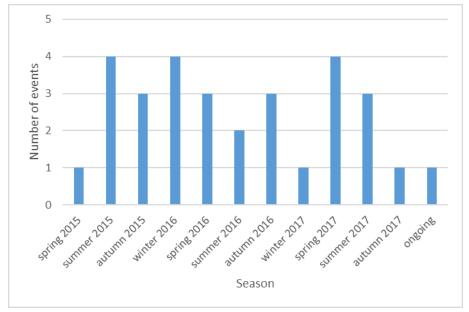


Figure 1. Frequency of events per season.

During those interaction opportunities, EU-PolarNet was able to engage with a considerable amount of people (figure 2).

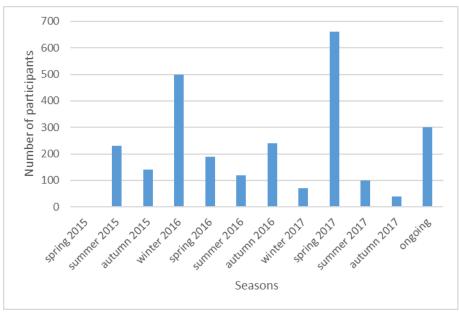


Figure 2. Estimated number of people reached by interaction activity.

Although categorizing the audiences reached is not an easy task, because frequently participants build a heterogeneous group, most of the EU-PolarNet stakeholder related events reached audiences referred to sciences, with a good balance between researchers OR research organisations OR projects on natural and social sciences (figure 3). Groups related with policy, and NGOs or international organizations were also well covered with over 10 events each. Industry participated in several events, covering tourism, shipping, fisheries, energy and technology). Indigenous communities and media also interacted with EU-PolarNet but on fewer occasions.

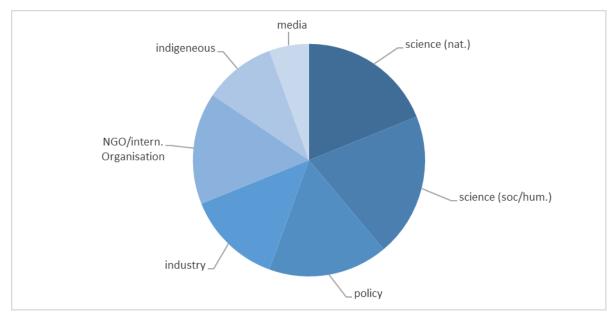


Figure 3. Distribution of events targeted at specific stakeholder groups.

Of the 30 events organized (see the complete list in Annex I) with stakeholders from March 2015 until September 2017, 60% were targeted at Arctic topics, whereas only 7% were related to only Antarctic topics and 33% can be considered related to topics on both poles (figure 4).

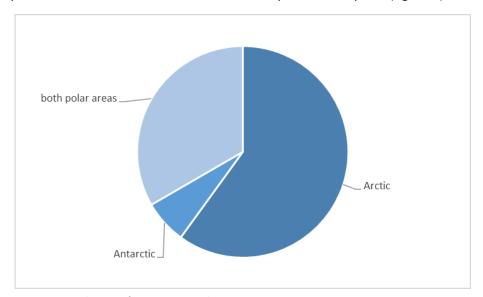


Figure 4. Distribution of events targeted at Arctic or Antarctic issues or issues relevant for both Polar Regions.

Looking at the overall thematic focus of the stakeholder interactions, one can see that many interactions focused on introducing EU-PolarNet and gain visibility for the project (figure 5). This hold

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especially true for the initial phase of the project, where awareness rising was a priority. Further reoccurring themes where climate change and adaptation. EU-PolarNet also organized three interactive workshops that specifically looked at how to improve stakeholder engagement.



Figure 5. Distribution of thematic focus of interaction activity.

3. Interaction map

In terms of the geographical distribution of the events, Figure 3 shows that most events took place in Europe (73%), but other locations in Africa, America and Asia have also hosted EU-PolarNet events. In terms of international visibility and policy relevance, EU-PolarNet's side events during COP21, COP22 and COP23 can be highlighted. The conferences brought together 40.000 participants from almost 200 countries. Due to the geographical distribution of the organized events and the international perspective of most of them, it can be stated that EU-PolarNet has had in this period of time a wide distribution, trying to reaching stakeholders all over the world.

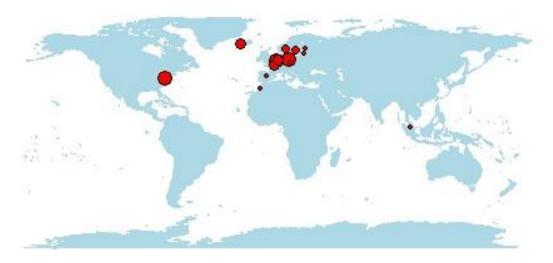


Figure 6. Geographical distribution of the EU-PolarNet events. The size of the dots is proportional to the number of events

4. Future perspectives

The EU-PolarNet consortium can look back at a wide range of stakeholder interactions. However, the consortium has also identified some aspects that can be improved and some stakeholder groups that should have been engaged more frequently. This will be a task for the remaining project lifespan. Although indigenous communities have been reached at several forums, more effort should be put into incorporating indigenous peoples and local community's knowledge in the EU-PolarNet research planning process. This is not an easy task because relationships are built up upon trust over long time periods. However, EU-PolarNet is aware of these problems and is increasing its efforts to work with indigenous and local communities. The two indigenous colleagues (a Saami representative and an Inuit representative from Greenland) that were invited, accepted and actively contributed to the white paper process, which can be seen as a first success and demonstrates that established personal contacts are key for lasting and trustful partnerships. EU-PolarNet is also aiming include indigenous representatives in the design of the Integrated Polar Research Programme.

We also consider that links with education and capacity building structures should be implemented, since the education is the basis for knowledge and interaction. This could be reinforced through the contacts that members of EU-PolarNet have with educational programmes such as APECS and, UArctic.

Industry is well represented among the stakeholders participating in the events, but several sectors of industry have not been addressed by EU-PolarNet yet. In particular, the companies involved in polar research operations (e.g. Kings Bay in the Arctic, or AGUNSA in the Antarctic) might be interested in participating in the co-production process of the integrated European Polar Research programme.

Another important group of stakeholders are non-governmental organisations that are very active in the polar regions and represent the civil society. We are aware that NGOs such as WWF and Greenpeace could feed in relevant contributions to the research programme and that we need to make efforts in cooperating closer with them.

Although funding agencies, as well as the European Commission, have been involved frequently in the events organized by EU-PolarNet, this is an especially relevant group of stakeholders which should be approached continuously. This interaction might be reinforced, mainly in non-Arctic countries, and © EU-PolarNet Consortium 09/03/2018

personal interactions, webinars or other dissemination tools should be used to inform more high level persons from European funding agencies. EU-PolarNet considers the interaction with high level international polar organizations important, such as the Antarctic Treaty System and the Arctic Council, to obtain crucial political and operational information and benefiting from expertise exchange with members of these organizations.

EU-PolarNet is moreover working towards merging stakeholder efforts with other EU funded Arctic projects, working together in the network of the EU Arctic Cluster. By cooperating more closely between these projects and creating synergies, investments can be made more efficiently, by avoiding duplication, and the risk of stakeholder fatigue will be limited, as stakeholders are not approached by all individual projects.

APPENDIX: Progress report on science - stakeholder interaction - List of actions

			colour code:	Arctic	Antarctic	DOLLI						Main targete	d stakeholder group				7
tle	Thematic focus	Action format	Objective	Associated event	Convenor / Presenter	Date (yyyy/mm/dd)	Location	Reporting	science (nat.)	science (soc/hum.)	policy	industry	NGO/intern. Organisation	indigeneous	media	military	etimated numbe
ATO (International Association of			awareness for EU-PolarNet and explore cooperation opportunities with Antarctic	IAATO (International Association of Antarctica Tour			Rotterdam,										n/a
tarctica Tour Operators) meeting	tourism	Poster	tourism industry	Operators) meeting	Annette Scheepstra (RUG)	2015/04/30	Netherlands	report				, and the second					.,, 6
			awareness for EU-PolarNet and inform	What is next for EU Arctic					x	х	x	x	x	x			130
at is next for EU Arctic Policy	policy	Presentation	policy makers about polar issues	Policy	Nicole Biebow (AWI)	2015/06/01	Brussels, Belgium	report									
					The paper was presented by Cormany												
					The paper was presented by Germany, and supported by Belgium, Bulgaria,						x						n/a
					France, and Portugal; Renuka Badhe												
tarctic Treaty Consultative Meeting	introduction to EU-PolarNet	information pape	r awareness for EU-PolarNet	Meeting Our Common Future under	(EPB) participant	2015/06/01	Sofia, Bulgaria	report									-
e Arctic Climate System	climate change	Session	inform policy makers about polar issues	climate change	Denis-Didier Rousseau (CNRS)	2015/07/07	Paris, France	n/a			х		х				50
apting to Arctic Climate Change	adaptation	Session	inform policy makers about polar issues	Our Common Future under climate change	Kirsi Latola (UOulu), Renuka Badhe (EPB Nicole Biebow (AWI)	2015/07/08	Paris, France	n/a			x		x				50
			awareness for EU-PolarNet amongst								×						40
tis Dialog	introduction to EU-PolarNet	Presentation	German policy makers awareness for EU-PolarNet amongst	Arktis Dialog	Nicole Biebow (AWI)	2015/09/01	Berlin, Germany	n/a						+			
IET Board meeting	introduction to EU-PolarNet	Presentation	Finnish institutes and policy makers	LYNET Board meeting	Kirsi Latola (UOulu) - participant	2015/10/01	Oulu, Finland	report	х	х	х						20
at can Arctic Stakeholders and			awareness for EU-PolarNet and initiating		Nicole Biebow (AWI), Renuka Badhe				v	v	v		v	v			80
earchers learn from each other?	stakeholder engagement	Session	stakeholder interaction	Arctic Circle	(EPB)	2015/10/17	Reykjavik, Iceland	n/a	^	^	^	^	^	^			80
b in the Austin Jacob					Danie Didies Davesson (CNDC), Danielo												40
nate change in the Arctic - Local, gional and Global Impact	climate change	Side Event	inform policy makers about polar issues	COP21	Denis-Didier Rousseau (CNRS), Renuka Badhe (EPB), Jeremy Wilkinson (BAS)	2015/12/07	Paris, France	n/a			×	X	×		X		40
Dala Mar Tarra Hall Mar attach	to the desired to 500 Belle Med	T	5 - 5U B-1 - 4U	4611	Nicole Biebow (AWI), Renuka Badhe	2045/42/44	C E		x								20
PolarNet Town Hall Meeting tic Frontiers	introduction to EU-PolarNet introduction to EU-PolarNet	Town Hall Booth	awareness for EU-PolarNet awareness for EU-PolarNet	AGU Arctic Frontiers	(EPB) Nicole Biebow (AWI)	2015/12/14 2016/01/26	San Francisco, USA Tromso/Norway		X	X	x	x		X			200
opean research objectives in polar			get feedback on research priorities		Carlo Barbante (CNR), Roberto Azzolini				х	x							240
earch	multi-thematic	Online survey	identified in report D2.1 get input from stakeholders on research		(CNR)	2016/02/16	EU-PolarNet websit	e report (D2.1)									-
ctic Health and		Stakeholder	needs regarding health and wellbeing in the		Janet Pawlak (AMAP), Nicole Biebow				х	x							50
Ilness Research Needs -PolarNet 2nd General Assembly -	health	Workshop	Arctic	ASSW2016	(AWI)	2016/03/12	Fairbanks, USA	report (D1.8) minutes									
en Part	introduction to EU-PolarNet	Meeting	awareness for EU-PolarNet	ASSW2016	Karin Lochte (AWI)	2016/03/13	Fairbanks, USA	(D1.7)	х	х							60
e Arctic: Connecting Arctic earchers and industry: a dialogue			initiating interaction with industry		Annette Scheepstra (RUG), Nicole		Rotterdam,		v				,				80
societal benefit	stakeholder engagement	Session	stakeholders	Adaptation Futures	Biebow (AWI), Renuka Badhe (EPB)	2016/05/11	Netherlands	n/a	^	^	^	^	^		^		80
			and the second s														
			awareness for EU-PolarNet amongst Antarctic community and identify research	SCAR Open Science	Nicole Biebow (AWI), Renuka Badhe		Kuala Lumpur,		x	х							70
PolarNet Town Hall Meeting	multi-thematic	Town Hall	The state of the s	Conference	(EPB)	2016/08/24	Malaysia	n/a									
keholder Workshop on Research			get input from stakeholders on research														
eds on Arctic Ecosystems and		Stakeholder	needs regarding Arctic ecosystems and		Janet Pawlak (AMAP), Nicole Biebow				х	Х							50
system Services	ecosystems	Workshop	ecosystem services discuss how polar research can contribute	ICES ASC 2016	(AWI); Johan Etourneau (CNRS)	2016/08/20	Riga, Latvia	report									
			to the 1,5°C climate target with					report (D2.2	x	x	x	x	x	x	x		110
PolarNet Town Hall Event	climate policy	Event	stakeholders		Nicole Biebow (AWI)	2016/09/27	Brussels, Belgium	and D4.7)									
			addressing the environmental, social and														
			economic impacts of increased shipping in						x	x	x	x	x	x			80
Future of Arctic Shipping Under			Arctic waters in relation to different IPCC scenarios and propose necessary actions		Nicole Biebow (AWI), Jeremy Wilkinson												
C Climate Scenarios	shipping	Session	for developing sustainable Arctic shipping	Arctic Circle 2016	(BAS)	2016/10/07	Reykjavik, Iceland	n/a									
tic change and its implications for bal risk	climate change	Side Event	inform policy makers about polar issues	COP22	Nicole Biebow (AWI), Jeremy Wilkinson (BAS)	2016/11/18	Marrakesh, Morocc	0 n/a			х	x	x	x	х		50
Duilisk	cimate change	Side Event	morni poncy makers about polar issues	COLEZ	Nicole Biebow (AWI), Annette	2010/11/10	Wallakesh, Woloec	o iiya									
lar Science/Industry Collaboration Sustainable Development	sustainable development	Session	establish cooperation with industry stakeholders	WOC Sustainable Ocean Summit	Scheepstra (RUG), Juanjo Danobeitia (CSIC)	2016/12/01	Rotterdam, Netherlands	n/a				x	x				70
opean Maritime Capabilities in the		Session	identify military research priorities and	Summit	external (attended by Kristina Bär (AWI)		Netherlanus	II/ a									10
tic	introduction to EU-PolarNet	Meeting	expore cooperation opportunities		Renuka Badhe (EPB)	2017/03/09	Brussels, Belgium									×	10
PolarNet 3rd General Assembly -			awareness for EU-PolarNet and establishing closer contacts with other EU funded polar				Prague, Czeck	minutes	x	x							70
en part	introduction to EU-PolarNet	Meeting	projects	ASSW2017	Karin Lochte (AWI)	2017/04/03	Republic	(D1.11)									
			identify stakeholder research peeds related		Annette Scheepstra (RUG), Kirsi Latola												
			identify stakeholder research needs related to the polar regions, which will feed into		(UOulu), Nicole Biebow (AWI), Kristina				x	x		x	x	x			530
oriorities on polar research	multi-thematic	Online survey	the white paper process		Bär (AWI), Renuka Badhe (EPB)	2017/04/19	EU-PolarNet websit	e report									
			get input from stakeholders on research needs regarding climate change effect on														
earch Needs on Climate-related			the Arctic cryosphere and adaptation	International Conference on					x	х				x			50
cts on the Arctic Cryosphere and ptation Options	adaptation	Stakeholder Workshop	options; engaging with transatlantic partners	Arctic Science: Bringing Knowledge to Action	Janet Pawlak (AMAP), Nicole Biebow (AWI)	2017/04/28	Reston, USA	report									
reation options	adaptation	Workshop	Identifying potential frameworks of	Knowledge to Action	(AWI)	2017/04/28	Reston, OSA	Героге									
de de la companya de			stakeholder engagement and ways of		A contra Calconomica (DUC) (Carl Lorenta			report (D4.9)		x							40
eholder engagement: moving from tity to more quality	stakeholder engagement	Session	scientific assessment of such engagement activities	ICASS IX	Annette Scheepstra (RUG), Kirsi Latola (UOulu)	2017/06/08	Umeå, Sweden	and paper in progress									
	J. U.																
orporation of Social Science and			discuss how social sciences and humanities best can be included in EU funded research		Annette Scheepstra (RUG), Kirsi Latola			report (D4.9) and paper in		х							30
nanities in large EU projects	interdisciplinary research	Session	projects	ICASS IX	(UOulu)	2017/06/10	Umeå, Sweden	progress									
aking records: How high																	20
peratures in the Arctic affect opean society - Policy briefing	climate change	Policy Briefing	inform policy makers about polar issues		Karin Lochte (AWI)	2017/06/22	Brussels, Belgium	report (D1.10)			х		х				30
, , , , ,																	
		Stakeholder	co-designing five polar white papers together with 50 polar experts, including		Nicole Biebow (AWI), Antonio Quesada	2017/09/24 -		white papers	x	x		x	x	x			40
			Coperior with 50 polar experts, including				1										
PolarNet White Paper Workshop	multi-thematic	Workshop	indigenous and industry representatives		(MINECO), David Vaughan (NERC-BAS)	2017/09/28	La Cristalera, Spain	in progress									
PolarNet White Paper Workshop	multi-thematic		indigenous and industry representatives identify stakeholders who have an interest		(MINECO), David Vaughan (NERC-BAS)	2017/09/28	La Cristalera, Spain EU-PolarNet websit		x	x	x	x	x	x	x		300