Roadshows showcasing mid-term results of WP5 to larger business audiences

Blue-Action: Arctic Impact on Weather and Climate is a Research and Innovation action (RIA) funded by the Horizon 2020 Work programme topics addressed: BG-10-2016 Impact of Arctic changes on the weather and climate of the Northern Hemisphere. Start date: 1 December 2016. End date: 28 February 2021.

The Blue-Action project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 727852.

About this document

Deliverable: D8.13 Roadshow showing the mid-term results of WP5 to larger business audiences
Work package in charge: Work package 8 Communication, Dissemination, Engagement and Exploitation
Actual delivery date for this deliverable: Project-month 36
Dissemination level: Business audiences and other relevant stakeholders

Lead authors
Climate-KIC Aps (CKIC): Pernille Martiny Modvig
SAMS Research Services Ltd (SRSL): Hannah Grist
Danmarks Meteorologiske Institut (DMI): Chiara Bearzotti
Barcelona Institute for Global Health (ISGlobal): Èrica Martínez-Solanas, Joan Ballester, Desislava Petrova, Marcos Quijal
City Council of Almada (ALM): Nuno Cunha Lopes, Sara Dionísio, Catarina Freitas
Arctic Centre of the University of Lapland (Finland) (AC UoL): Ilona Mettiäinen, Martin Coath
DNV GL: Øivin Aarnes
Foresight Intelligence GbR (FI): Johannes Gabriel
A.M. Obukhov Institute of Atmospheric Physics of Russian Academy of Sciences (IAP-RAS): Vladimir A. Semenov
Institute For Advanced Sustainability Studies e.V. (IASS): Kathrin Stephen (Keil), Vilena Valeeva
Institute of World Economy and International Relations (IMEMO): Elena Nikitina
Rukakeskus Ltd. (RUKA): Jusu Toivonen

We support the Blue Growth!
Visit us on: www.blue-action.eu

Follow us on Twitter: @BG10Blueaction

Access our open access documents in Zenodo:
https://www.zenodo.org/communities/blue-actionh2020

Index

Summary for publication

The Blue-Action the teams are working at different levels in **stakeholder engagement**. In the project we define **direct stakeholders** as the series of end-users who contribute directly to the co-design of climate services and information services, and who benefit directly from the project results. In Blue-Action WP5 "Developing and Valuing Climate Services and Information Services", the five case studies have been involving several stakeholders in their work. Most of the stakeholders in the case studies are direct "beneficiaries" of the project in terms of EU funding, i.e. fully-fledged partners receiving Horizon 2020 funding for their activities in the project who contribute to the co-design of the climate and information services in this project. Additional **indirect stakeholders** are involved in the activities planned together by our WP5 and WP8 "Communication, Dissemination, Engagement and Exploitation" and benefit from the co-designed products and services.

This report concerns delivery D8.13: **Roadshow showing the mid-term results of WP5 to larger business audiences** which is part of a larger focus on **Engagement with emerging business actors**. In Blue-Action WP5, the set of five case studies bring scientists together with stakeholders (local government and business players) to co-develop products that "translate" the model outputs and improved modelling skill developed in the Blue-Action WPs 1-4 into **societal- and sector-relevant products i.e. climate services and targeted information services.**

The goal is to establish a dialogue between the WP5 Case Studies, the project scientists, going beyond the cooperation achieved in WP5, and f**ostering cross-fertilisation of ideas, inspiration and synergies with other business sectors and potential end-users of the climate services under development in WP5**.

This publication will summarize the activities involved in dissemination of the 5 case studies which jointly form the D8.13 delivery.

Work carried out and main results achieved

The Roadshow consists of a series of interventions and opportunities for interaction between the five Blue-Action case studies and stakeholders such as potential end-users of the climate services under development through Blue-Action. Potential end users could be private industry depending on reliable forecasting for their safe and sustainable operations or it could be public organizations who depend on forecasting for emergent policy making. Each of the case studies has been very active i**n opening up to broader and diverse audiences in different geographies** to showcase the work done, the results achieved and the state-of-the-art in the implementation of their plans.

A **summary of the most important roadshows for each case study is provided here below.**

Case Study	Roadshows at	Engagement
CS1 Winter tourism centers in Northern Finland	Arctic Circle 2019	Businesses, governmental organisations, research organisations
CS2 Temperature-related human mortality in European regions	● ISEE 2019 ● The technical meeting of the project " International Urban Cooperation" ● Adapt.Local.19	● Public health professionals, consultants, and industry representatives ● Civil servants from Portugal and Belo Horizonte
CS3 Extreme weather risks to maritime activities	● Arctic Circle 2019 ● Arctic Frontiers 2019	● Industry, governmental organisations, NGOs, research organisations ● Shipping Industry representatives, Ship operators, Fishing, Bulk shipping, Tourism, Search and Rescue
CS4 Climate services for marine fisheries	Arctic Circle 2019	Industry, governmental organisations, NGOs, research organisations
CS5Yamal 2040: Scenarios for the Russian Arctic	● Arctic Frontiers 2019 ● IMEMO Workshop on "Yamal 2040: Scenarios for the Russian Arctic" ● Conference "Yamal oil and gas forum" ● Northern Sustainable Development Forum	● Scientists, governmental representatives, businesses ● A broader Russian audience, including scientific community, business, governmental representative (federal, local, regional authorities), NGOs, mass media ● Indigenous peoples, scientists, representatives of local/regional governments, business ● Representatives of businesses active in Yamal, Yamal governmental representatives, scientists

In the text we provide a summary of each roadshow and information on the outcomes of the discussions with stakeholders at these events.

Roadshow at the Arctic Circle 2019 (CS1, CS2, CS4)

At the 2019 Arctic Circle Assembly in Reykjavík, Iceland, EIT Climate-KIC and the Blue-Action consortium hosted two sessions on:

- **Cases Study 1 (CS1)** to disseminate the midterm results of the work related to climate data in relation to resource low snow production for Northern Finnish winter tourism centres.
- **Case Studies 3 and 4 (CS3 and CS4)** to disseminate the midterm results of the work related to climate data in relation to risks and mitigation for marine activities and marine fisheries. The goal was to get in touch with players within the field of fisheries, aquaculture, shipping and other maritime activities to explore the potentials of ocean forecasting to mitigate risks arising from climate change. With the session, we asked the question: What Can We Do with "A Predicted Ocean?"

The Arctic Circle is the largest network of international dialogue and cooperation on the future of the Arctic. It is an open democratic platform with participation from governments, organizations, corporations, universities, think tanks, environmental associations, indigenous communities, concerned citizens, and others interested in the development of the Arctic and its consequences for the future of the globe.

Credits: Hannah Grist (SRSL)

The annual Arctic Circle Assembly is the largest annual international gathering on the Arctic, attended by more than 2000 participants from 60 countries. The Assembly is held every October at the Harpa Conference Center and Concert Hall in Reykjavík, Iceland. It is attended by heads of states and governments, ministers, members of Parliaments, officials, experts, scientists, entrepreneurs, business leaders, indigenous representatives, environmentalists, students, activists and others from the growing international community of partners and participants interested in the future of the Arctic. The setting, therefore, is the perfect setting for Case Studies 1, 3 and 4 of the Blue-Action Project to meet potential end users of their climate services under development.

Arctic Circle 2019 Session title: Securing Snow for Winter Tourism, 12 October 2019

Case study 1: Weather and climate data for Northern Finnish winter tourism centres

Session description

Tourism is growing fast in different parts of the Arctic. In Northern Scandinavia, winter tourism is largely based on snow-based activities such as snowmobile riding, reindeer and husky safaris or snowshoeing. Moreover, cross-country and downhill skiing are important activities. Furthermore, Christmas time tourism in Lapland relies on images of snowy landscapes.

This means that the winter tourism industry relies heavily on climatic conditions for economically successful operation. Climate change is expected to decrease snow cover days in Northern Scandinavia by 20 – 30 % particularly in the beginning of the potential skiing season and delay of the arrival of natural snowfall. In order to proactively adapt to the future climatic change, the industry will fundamentally depend on relevant and user-friendly information on future climatic conditions and specific local weather conditions as a basis for making informed strategic operational and investment decisions.

As winter tourism centers increasingly use snowmaking as means to ensure snow security, it is worth considering snowmaking as an adaptive strategy in terms of energy consumption, competitiveness and environmental and climate impacts. High energy consumption may turn snowmaking from adaptive into maladaptive, which is a term used for adaptive activities that actually accelerate climate change.

Credits: Hannah Grist (SRSL)

In this breakout session, we introduced how a climate service that helps skiing centers optimize snowmaking based on seasonal forecasts can help winter tourism industry to mitigate potential problems from delayed natural snowfall while preventing snowmaking from being maladaptive by improved information.

The purpose of this workshop was to present the idea of climate services in general by based on the example of the CS1 model developed for ski industry in Northern Finland. Further, the aim is to elaborate on how climate services could help winter tourism industry also more widely to adapt to climate change.

The aim of the workshop was to invite professionals of winter tourism industry to explore the potentials of tailored seasonal forecasting of snow and snowmaking conditions as a way of ensuring winter time activities while ensuring energy efficiency and hence low emissions and costs from snowmaking.

Blue-Action speakers

- Ilona Mettiäinen, Researcher, Arctic Centre, University of Lapland
- Martin Coath, Senior Affiliated Researcher, Arctic Centre, University of Lapland and Associate lecturer, School of Geography, Earth and Environmental Sciences, University of Plymouth

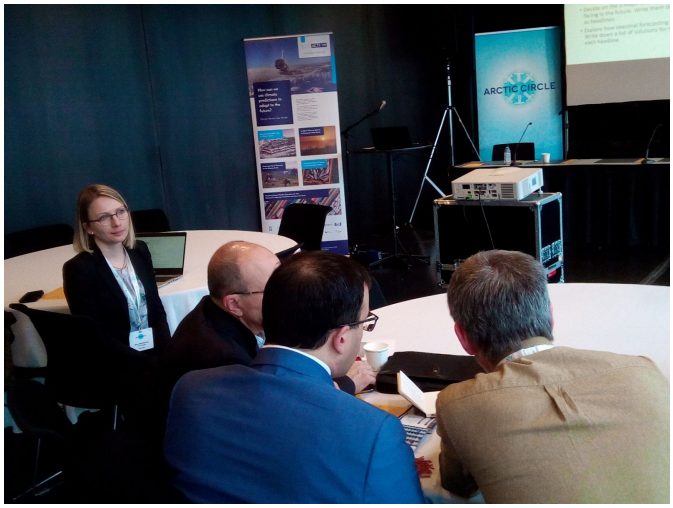
Ilona Mettiäinen: Securing snow for winter tourism – how can a climate service help?

- Proper winter conditions, including snow, are the key to commercial success in nature-based winter tourism.
- In Northern Finland now, there are currently 180-210 snow cover days per year
- Under predicted climate change, we expect to see qualitative changes in snow (freezing and thawing), and snow will happen later in the season
- In this case, resorts need to make all the money in a shorter term, so are more vulnerable to disruption. For some, this becomes not economically viable.
- For resorts like Ruka, this year they opened slopes in 4th October. Ruka wants to be the most snow secure resort in Finland to ensure continued economic success.
- Some resorts make machine made snow- made from water, just needs to be turned into snow using a freezing process.
- It has been proved to be successful- another ski resort has been awarded the contract for a ski competition because it was using stored snow.
- Ruka opened two slopes last year early by a combination of natural and material stored snow. This is a great back up plan to allow resorts to be snow secure, but very expensive. Any information that will increase the economic viability is to be welcomed.
- The European commission roadmap to climate services states that this is a climate service, "the transformation of climate-related data —together with other relevant information —into customised products that may be of use for the society at large."
- Blue-Action have undertaken a case study in partnership with Ruka to create a climate service that can help them make decisions about snowmaking under future climate scenarios.

Martin Coath: Bridging the Gap Between Science and Snowmaking -Presenting seasonal forecast in a meaningful way for business decisions

- The question we are asking is can the outputs of models be used- or made useful- in commercial decision-making?
- At the moment, businesses will use weather forecasts but don't use decadal forecasts- we need to work with co-design to make it completely relevant.
- This is a type of transgressive knowledge, breaking out of established moulds. We try to understand what the users are saying and encourage a co-design process beyond simple reframing.
- At Ruka, they have a lot of knowledge already. There is a chief snowmaker with decades of experience. Snowmaking is a huge undertaking with a large number of machines, and a subtle business. This is just another input of knowledge to decades of knowledge.
- We've built an app to translate the climate predictions to a format that can be used by Ruka. It is built using an R package called Shiny- R library creates webpages with the data that is present in R.

- The predictions are made for 6 months in advance, and updated every month. The confidence greater for one month difference, so they can change plans as they get closer. It also has uncertainty visualised for users.
- The app has a deliberately simplified interface, but all the data underneath can be reached so users can drill down further if necessary.
- The app is being tested in Ruka right now, and we are hoping to have data for a release next year.



Credits: Hannah Grist (SRSL)

Questions and Answers

What are the optimal conditions for snowmaking?

- It is very specific: 85% humidity, -10 degrees. 30x difference in cost between these and non-optimal days. These conditions need to be present for several days in a row to make it worthwhile, which is the challenge.

How can the app help with planning snowmaking?

- The problem is that the model doesn't predict precipitation- so it just another tool, depends on how much snow there actually is. There are other parameters, so can only be used by people that need more input to their decisions.

Is this scalable to other resorts?

- Not every resort has water/snowmaking. Other resorts have different conditions/problems- it would not be the same issues in the Alps, for example.
- But should be available with tweaks to others. It is possible for others to copy the approach, using co-design. Following this approach the end user has confidence, builds trust, end is invested in. Better than climate scientists just handing out the app.
- The next service can build on our lessons and framework though, use the sense making that has already taken place.

How high is Ruka compared to other European ski resorts?

- It is not about altitude, it's about latitude- it is actually very low compared to other mountainous resorts.

Outcomes

All in all, it was a positive meeting, with members of the audience with first-hand knowledge of ski-resorts management. We were able to communicate about our climate service, the attention our breakout session was given in Twitter and other social media channels, as well as in informal talks during the conference, can be seen as very satisfactory. As we launched a video showing the work done for Ruka http://www.blueaction.eu/index.php?id=3903 in the breakout session, the main ideas of the

climate service for winter tourism industry can also be easily communicated using the video from this now on.
Some of the participants had a connection with the ski-resorts in the French Alps and had a strong interest in the application developed by our CS, and in getting this adapted to the context of Chamonix, an important European ski resort. The expected availability of the app for external stakeholders is planned for next year (September/October 2020) after the test round and the final iterations have been made for finalizing the service with RUKA. In the consortium, we need to be clear on the replicability and the economic value of the climate service.

The interest shown by the people from the French Alps, and our discussions with them in the session, led us to see that the Alps could – besides other ski resorts in Northern Finland than RUKA – be a geographical area where our climate service could be applied next.

All in all, our climate service was well received among the small audience of our breakout session. Also, the interest of skiing enthusiasts and professionals was encouraging, as we interpret that it tells about societal need within skiing communities and areas.

Audience

Businesses (operating in ski-resorts), governmental organisations, research organisations.

Arctic Circle 2019 Session title: What Can We Do with "A Predicted Ocean" – Applications and Opportunities, 12 October 2019, Arctic Circle 2019.

Case study 3: Extreme weather risks to maritime activities and Case study 4: Climate Services for Marine Fisheries

Session description

Society depends on the Ocean more than at any time in its past. It is a vital source of nourishment, supporting directly the lives and livelihood of more than 500 million people, especially in the poorest and most remote nations. Ocean economies are among the most rapidly growing and promising in the world, providing benefits to many sectors of great economic value, such as fisheries transport, biotechnologies, energy production, seabed resources exploration, tourism and many others.
Yet over the coming decades, a changing climate, together with growing global population, and increased environmental stressors will have significant yet highly uncertain impacts on food security and human welfare. It is crucial for future business endeavors that we manage to foresee and adapt to these changes. There is a growing realization and acknowledgement that ambitious climate strategies are not business impeding, but rather business enabling.
Scientific advances in oceanographic observing, modelling systems and predictive capacity have begun to meet these needs. Today some components of the ocean and climate system can be forecasted with acceptable skill years into the future, most notably in the North Atlantic, sub-polar and arctic regions, but also in other areas such as the Pacific. Decadal forecasts can support both climate adaptation and sustainable development, an opportunity recognized by the United Nations Decade of Ocean Science for Sustainable Development, where "A Predicted Ocean" is one of the Decade's six societal objectives. However, realizing the potential of such predictions and ensuring that they have a concrete benefit for society is neither a straightforward nor automatic process. There is a need for a close collaboration between the scientific community, who can define what is feasible on one side and the public and the

private sectors, who can define where reliable forecasting is valuable to conduct safe and sustainable marine activities in the future.
Based on presentations from Mark Payne, Senior Researcher, Technical University of Denmark, National Institute of Aquatic Resources (DTU Aqua), Øivin Aarnes, Principal Specialist, Environmental Risk and Preparedness, DNV GL and Johann Bell, Senior Director - Pacific Tuna Fisheries, Conservation International covering the topic of Climate Services and sustainable ocean used from a business perspective, we could dive into ocean activities that eventually depend on reliable forecasting.
The workshop attempted to address the question of "What is useful, and what is sustainable?". It invited players from both industry and the public sector within the field of fisheries, aquaculture, shipping and other maritime activities to explore the potentials of ocean forecasting to mitigate risks arising from climate change. The outcomes of the workshop was a referendum on prevailing needs to help users of the Ocean adapt to the new reality.

Photo of the session, Mark Payne. Credits: Hannah Grist (SRSL)

Blue-Action speakers and presentations

- Mark Payne, Senior Researcher, Technical University of Denmark, National Institute of Aquatic Resources (DTU Aqua) - What Can We Do with "A Predicted Ocean" – Applications and Opportunities"
- Øivin Aarnes, Principal Specialist, Environmental Risk and Preparedness (DNV GL), Sustainable Ocean Practice and Actions Promoting Ocean Stewardship
- Johann Bell, Senior Director - Pacific Tuna Fisheries, Conservation International

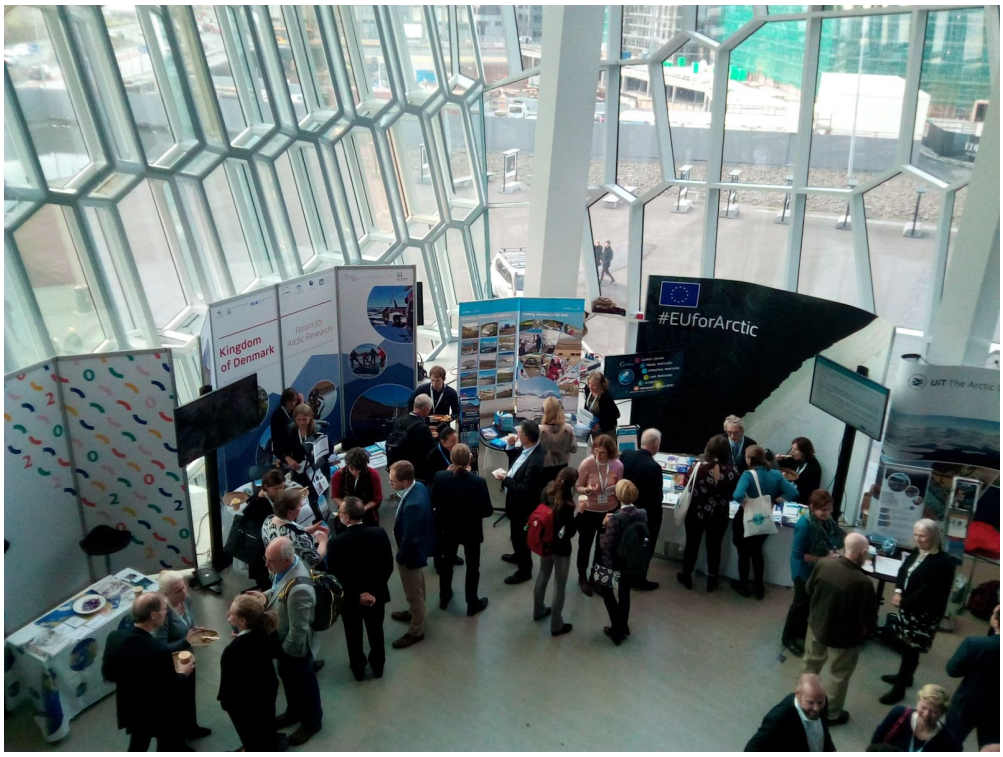
All presentations are available in Zenodo: https://www.zenodo.org/communities/blue-actionh2020

Outcomes

We got some positive feedback from the audience. There were many questions and an active discussion. The outcome was as much as we could hope for given the limited time block.

The session brought us in touch with IMR, institute of marine research in Norway (Geir Ottersen, author of IPCC report on Ocean and Cryosphere), Nord University, Norway on arctic shipping and preparedness, people from the Norwegian Ice Service, The Icelandic Fisheries, and colleagues in other EU projects- INTERACT. The session also led to rewarding talks with several students (many young people there) providing their perspectives. This led to some new insights, simply by looking at things from a different angle.
We left the event with a sense of urgency, which was sobering, but real. The Arctic Circle assembly also left us more optimistic that governments and politics are attuned to the wake-up call. The Assembly brought the realization, that climate science is more important than ever, but it must speak a language which is understood- and also reaches the people.

Audience
Industry, governmental organisations, NGOs, research organisations.



Credits: Hannah Grist (SRSL)

Roadshow at Arctic Frontiers 20 - 24 January 2019, Trømso (NO), 23 January 2019
Case study 3: Extreme weather risks to maritime activities

Session
Side event on "Improved safety and environmentally sound operations in the Arctic Ocean - how to move forward?", Trømso (NO) https://code.mpimet.mpg.de/issues/8704 and https://www.arcticfrontiers.com/program/session/?id=ASE021 Organised by the EU Arctic Cluster to cover a multidimensional approach to shipping related safe operations in the Arctic Ocean:
• Safer operations with improved weather and sea-ice forecast (Blue-Action, APPLICATE and ICE-ARC)

• Improved cooperation between ship operators and research: Co-developing new technologies for safe operations and improved joint monitoring in the Arctic Ocean (ARICE & INTAROS)
• Preventing negative environmental impacts (iCUPE)

Blue-Action speakers and presentations

Øivin Aarnes (DNV GL): " Improved safety and environmentally sound operations in the Arctic Ocean"
https://www.zenodo.org/communities/blue-actionh2020

Outcomes

The notion of co-design and development has acquired quite some attention, but I believe there is still room for improvement. Close cooperation among business, authorities, researchers, and society/local communities has the potential to significantly enhance the uptake of climate services. However, the uptake and practical application of science requires a clear and concise means of communication.
A climate service needs to provide accurate, relevant, timely, and reliable information, and interaction with industry and stakeholders in all phases of the process will ensure the service meets the needs of its users. We may not know what a future climate will look like, but there is strong evidence we will experience more extreme weather, storms lasting longer, with greater force, and with greater reach. The implications can be serious, and the industry needs to prepare for this. A key contribution from Blue-Action is to improve the capacity to predict the weather and climate of the Northern Hemisphere, and make it possible to better forecast extreme weather phenomena.
Better forecasts enable the industry to make sound decisions with regards to severe weather, optimize weather related operations, and respond to events efficiently and appropriately. Making shipping safer, smarter, and greener enables the industry to become more efficient and accountable- ultimately reducing their environmental impact.
Business action to climate change requires business to have foresight, and take the necessary steps to act upon a future that is somewhat uncertain.
It requires businesses to recognize what are its main vulnerabilities [to climate change], address the risks, and integrate these into strategic planning.
Some key enablers:

- Integration of climate risks and opportunities into sustainability strategies and action.
- In the strategy process, recognize social and environmental drivers to sustainable practice.
- Transparency in communication between government, society, research, and business.

The UN Global Compact made a call for companies to commit to responsible corporate adaptation. Adapting to climate impacts offers many benefits to the private sector, such as improving operations and competitiveness, leveraging new business opportunities, building corporate reputation and protecting value chains.

Audience

Shipping Industry representatives, Ship operators, Fishing, Bulk shipping, Tourism, Search and Rescue.

Roadshow at Arctic Frontiers 20 - 24 January 2019, Trømso (NO), 23 January 2019

Case study 5: Yamal 2040: Scenarios for the Russian Arctic

Blue-Action speakers and presentations

Vilena Valeeva (IASS): "Scenarios as a tool for the improvement of stakeholders' capacity for adapting effectively to multiple changes in the Arctic: The case of the Yamal region" https://zenodo.org/record/2553960#.Xd0yx001i70

Questions and answers

There were clarification questions about the scenario methodology, participants of our scenario workshops.

Question if the results of the scenario projects are transferable to other contexts.

Definitely, the scenarios and the strategic options that we developed can be useful for other resource-dependent regions of Russia and their stakeholders

Question: Why did we choose the Yamal region?

The Yamal region is extremely interesting for the analysis of the interplay between multiple uncertainties and its impact on stakeholders. The future of the Yamal region is very uncertain due to the impact of climate change, energy transition, geopolitical issues, technological development, etc. The Foresight scenarios can be very helpful for Yamal stakeholders to navigate through these uncertainties.

Outcomes

The presentation was well received. Vilena Valeeva got very positive feedback and many people asked to send them the published version of the scenarios and strategic options.

Audience

Around 50 people, among them there were scientists, officials, and representatives of the business community.

Roadshow at the IMEMO Workshop on "Yamal 2040: Scenarios for the Russian Arctic", Moscow (RU) 15 March 2019

Case study 5: Yamal 2040: Scenarios for the Russian Arctic

Workshop description and goals

The workshop was organised by Blue-Action partner IMEMO, with the goal to present the results of our Yamal scenarios.

Blue-Action speakers and presentations

- Vladimir Semenov (IAP-RAS): Arctic climate change: me c hanisms and consequences
- Johannes Gabriel (FI): Yamal 2040, working with scenarios
- Michail Grigoriev (Gecon): Yamal Energy Resources Development: Today and Tomorrow

Outcomes

It was a rather successful event in terms of sharing and transferring know-how and results. It was important that it was held in Russia and in Russian and thus accessible for the russian stakeholders who don't speak English. The Yamal region is one of the most important regions in Russia in terms of economic development and its future is important for Russia as a whole. The methodology and the approach to thinking about the future that we employed in the scenario construction is rather unusual

for Russia. The ideas of multiple alternative futures and the strategic options that might be helpful under any alternative development was new to many in the audience. The big emphasis on the impact of climate change that we put in our scenarios is also rather unusual for many Russians including the business actors. No wonder there were many questions about the climatic projections that we used in our project. In general, the results of the project were well received and triggered discussions during and after the event. The representatives of the local Yamal TV who presented at the workshop covered the workshop in the news and briefly presented all three "Yamal 2040" scenarios.

Audience

A broader Russian audience, including scientific community, business, governmental representative (federal, local, regional authorities), NGOs, mass media.

Roadshow at the Conference "Yamal oil and gas forum" Noviy Urengoy (RU), 14-16 March 2019

Case study 5: Yamal 2040: Scenarios for the Russian Arctic

Conference description and goals

This event was organised by the Government of the Yamal-Nenets Autonomous Okrug, Blue-Action was invited to connect with Yamal officials and Yamal business and tell them about our CS5 results.

Blue-Action speaker

Vilena Valeeva (IASS)

Outcomes

Vilena discussed the Yamal 2040 scenarios with Yamal officials and business representatives during the networking events: she reported on the scenarios work to to the head of the Department of International Relations of the Yamal government and who was excited about the project and asked for more information in Russian on outline of the scenarios and the strategic options. Representatives of the business sector (oil and gas extractive industries) also asked for the final report on the scenario work and access to the final report of the project, when available.

Audience

Representatives of oil and gas extractive industries active in Yamal, Yamal officials and scientists.

Roadshow at Northern Sustainable Development Forum, Yakutsk (RU), 23-28 September2019

Case study 5: Yamal 2040: Scenarios for the Russian Arctic

Conference description and goals

The Forum was organized by the Government of the Sakha Republic (Russia) and the Northern Forum organization which is organisation for interregional cooperation in the Arctic. The goal of the Forum was to promote and facilitate the sustainable development in the Arctic. As the Sakha republic is home to

many indigenous peoples, discussing the issues of indigenous people was one of the priorities of the event. Vilena Valeeva was invited to give a talk about the strategic options for indigenous people of the Yamal region.

Blue-Action Speaker and presentation

Vilena Valeeva (IASS): "Uncertain futures in the Arctic: Strategic options for Yamal indigenous people"
Available in Zenodo: https://zenodo.org/record/3553832#.Xd_aW5NKi70

Questions and answers

There were several clarification questions on the methodology scenarios and about Blue-Action as a project and as a consortium.

Outcomes

The Yamal 2040 scenarios and strategic options including investment in education, introduction of new business models, learning from abroad, constructive cooperation with business and politicians triggered good discussions on the future of indigenous peoples in Russia. The text of my presentation will be included in the book of conference reports which should be published soon.

Audience

Indigenous peoples, scientists, representatives of local/regional governments and business.

Case study 2: Temperature Related Mortality

This case study has been very active in disseminating to very diverse audiences. Not only ISGlobal, but also the City Council Almada have also been very active in sharing knowledge with health professionals and civil servants from Europe and non-European countries (Portuguese-speaking countries).
The most relevant interventions have been held at:

- 31st annual conference of the International Society for Environmental Epidemiology (ISEE 2019).
- Seminar of the project "Adapt.Local.19 - Adaptação Local às Alterações Climáticas, Seia (PT), 15 November 2019.
- Technical meeting of the project " International Urban Cooperation" with Brazilian Mission of the Municipality of Belo Horizonte (Brasil), in Almada (PT), 14 May 2019.

Roadshow at ISEE 2019, Utrecht (NL), 25-28 August 2019

Case study 2: Temperature Related Mortality

Conference description and goals

The 31st annual conference of the International Society for Environmental Epidemiology (ISEE 2019) attracted almost 1,000 participants from all parts of the world. The meeting theme was **'"On Airs, Waters, Places"'**.

Blue-Action speakers and presentations

- Erica Martinez-Solanas (ISGlobal), poster presentation ("An integrated heat health early warning system for Europe") .

- Joan Ballester (ISGlobal), oral presentation ("Mortality Trends in Europe: Role of Macroeconomic Growth during the Great Recession").

Audiences

Participants academic or government scientists, public health professionals, consultants, and industry representatives, major international stakeholders such as the World Health Organisation, the European Union, the US Environmental Protection Agency and the US based Health Effects Institute.

Roadshow at Adapt.Local.19, Seia (PT) 15 November 2019

Case study 2: Temperature Related Mortality

Conference description and goals

With reference to **Adapt.Local.19** for instance, this is a major event in Portugal aimed at mayors, civil servants, technicians, and researchers, proposes a program of activities with presentation / debate panels and a set of technical training workshops, attended by experts and personalities of recognized merit. This workshop contributed in particular to the improvement of knowledge and capacity of participants through discussion and sharing of experiences in the field of the challenge of adaptation to climate change.

Blue-Action speakers and presentations

Catarina Freitas (ALM): A Ilha de Calor na estratégica de adaptação de Almada: Modelação de Alta resolução, análise de stress fisiológico e medidas de regulação microclimáticas (The Heat Island in Almada Adaptation Strategy: High Resolution Modeling, Physiological Stress Analysis and Microclimatic Regulation Measures): https://www.zenodo.org/record/3551019#.XeEX45NKjiw

Outcomes

This event is about capacity building and transfer of knowledge. Our participation raised interest in the project and in how the methodology could be implemented in other cities affected by the same problems.

Audience

Civil servants from Portugal.

Roadshow at the technical meeting of the project " International Urban Cooperation"

Through the IUC programme http://www.iuc.eu/lac/city-pairings/?c=search&pairing_id=yn5uqeps, cities and regions across Europe have entered into partnerships on sustainable development with counterparts from around the globe. Almada is paired with Belo Horizonte.

ALMADA **BELO HORIZONTE**

Belo Horizonte and Almada are focusing their pairing on **addressing climate change.** The city of Almada is member of the Global Covenant of Mayors for Climate and Energy, has implemented the processes required as part of this agreement, and is currently updating its climate goals and action. Within this framework, it has developed initiatives such as a Climate Action Local Platform and a Climate Change Fund. The Municipality of Belo Horizonte is interested in adapting both initiatives to its local context. For its part, Almada is keen to learn more about Belo Horizonte's system of planning and its established goals and agreements.

They plan to reformulate the climate change committee in Belo Horizonte with the expansion of social mobilization and private sector participation, to create a climate fund in BH to finance actions of global confrontation and adaptation in the municipality. Along with the Implementation of a seal of environmental and climatic certification integrated to the urban and environmental plan and the development of an energy efficiency project on public property preparation of a project to reduce greenhouse gas emissions in the urban mobility sector.

Blue-Action speakers and presentations

Nuno Lopes, Catarina Freitas, Sara Dionísio, Cristina Almeida (ALM).

- High Resolution Modeling of Almada Heat Island: diagnosis and microclimate regulation measures https://www.zenodo.org/record/3550999#.XeEX8pNKjiw
- Promoting Resilience in Almada, how to adapt and how to implement the Local Climate Change Strategy https://www.zenodo.org/record/3550964#.XeEXqJNKjiw

Outcomes

This event is about capacity building and transferring knowledge. Our participation raised interest in the project and in how the methodology could be implemented by Belo Horizonte.

Audience

Civil servants from Almada and Belo Horizonte.

Impact

<u>How</u> has this work contributed to the expected impacts of Blue-Action?

Improve stakeholders' capacity to adapt to climate change

We engaged through these roadshow with a wide range of societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) in order to amplify the impacts achieved in WP5 and to better align both the process and the project outcomes with the values, needs and expectations of society, in line with the European strategy for Responsible Research and Innovation.

Key business stakeholders in marine fisheries, shipping, health sector.

Policy shapers and policy makers at European and national level, to allow them to use/re-use of results at EU and national level

Contribute to better servicing the economic sectors that rely on improved forecasting capacity

In the CS, we test th e value of improved climate services for specific sectors relying on improved forecasting capacity for implementing joint-measures and improving their services to customers.

Improve the professional skills and competences for those working and being trained to work within this subject area

- Industry-focused meetings, for transferring know-how and results, bridging language barriers in the interaction with the scientific community.
- Collaborative briefings with policymakers involved in determining key policy issues relating to climate change response and adaptation as well as mitigation

Improving innovation capacity and the integration of new knowledge

The variety of targeted dissemination measures of prototyped products and results foster their utilization for further development, creation and marketing of products/services and processes for business stakeholders, and for improved information to policy makers, and local communities.

Impact on the business sector

Strengthening the competitiveness and growth of companies by developing innovations meeting the needs of European and global markets; and, where relevant, by delivering such innovations to the markets

Wit the start of the CS activities, we opened a matchmaking dialogue between the users of the project modelling data, their analyses and the core scientific groups with the goal of strengthening the competitiveness and growth of emerging business actors and established industries. This is going now more in depth, with the progress of the work in the CS. These stakeholders need climate and weather data or analysis for developing new innovative services/products, and for enhancing their existing core activities that rely on improved forecasting capacity, and for fostering adaptation.

Lessons learned and Links built

- Despite being a large European project, it is valuable to keep on working, in terms of dissemination, in local contexts, for instance, Russia and Portugal, for some of the case studies. Language barriers still pay a role: presenters and knowledge holder able to communicate in local languages allow stakeholders outside the project consortium to pick up results and re-use them faster than expected.

- The activities of city pairing between Almada and Belo Horizonte are an interesting dimension we had not foreseen at the beginning of the project. Through a partner, we are reaching out for new stakeholders outside Europe, facing similar challenges.
- Some formats and events work better than others: large events tend to be overcrowded and the participants are overloaded with information, perhaps the best way to transfer knowledge is to target smaller events, where it is possible to allow an interaction one-to-one (smaller teams), instead of one-to-many.

Contribution to the top level objectives of Blue-Action

With the roadshows, we have mostly helped to achieve the following objectives of Blue-Action:

- **Objective 7 Fostering the capacity of key stakeholders to adapt and respond to climate change and boosting their economic growth**
- **Objective 8 Transferring knowledge to a wide range of interested key stakeholders**