Interdisciplinary nature-socio-economic studies for Kola/Arctic domain: examples from INEP KSC RAS experience

February 19 2021

Areas of intensive nature management in the Russian Arctic under climate change conditions: natural and social processes in the long term – RFBR, 2018-2021 *(INEP KSC RAS, V. Masloboev)*

1. **Assessment** the consequences of **natural and anthropogenic impacts**, including climate change, on the natural **environment and socio-economic processes** in the zones of intensive nature management in the Arctic - regions and settlements where active industrial resource extraction activity is taking place.

2. **Development** of a package of **recommendations** on the planning of preventive measures and the development of **adaptation strategies** for changing climate and natural conditions, in zones of intensive nature management in the Russian Arctic.

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socio-economic processes

1. Public perception of climate change
2. Social consequences of climate change
3. Public participation in climate change studies (citizen science)
4. Traditional knowledge (indigenous people knowledge) for adaptation strategies development
5. Economic loss caused by the long-term MMPW storage.
5. Recommendation for regional adaptation strategy development

Comprehensive assessment of the impact of microparticles in emissions from the mining and metallurgical enterprises of the Murmansk region on ecosystems and the health status of population in the Arctic– RFBR, 2019-2022
(INEP KSC RAS, V. Masloboev)

Development of effective methods to **reduce** tailings **dusting** and **sewage treatment** of mining enterprises of the Murmansk region from suspended solids.

Development and implementation a methodology for assessing environmentally determined risk factors for the health problems of a population for developing new **approaches to the economic assessment of damage to the health of the population of the Arctic caused by exposure to microparticles**

Creation of a scientific basis for the dialogue between large **mining and metallurgical companies and local communities** (including within the framework of the environmental policy of state authorities and local self-government) on issues of determining the scale and forms of measures of **corporate social responsibility** for the prevention and compensation of

damage to public health.

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socio-economic processes

1. Economic assessment of damage to the health of the population of the Arctic caused by exposure to microparticles
2. Creation of a scientific basis for the dialogue between mining companies and local communities (CSR, SLO)

Global drivers, local consequences: Tools for global change adaptation and sustainable development of industrial and cultural Arctic "hubs" (ArcticHubs)- Horizon2020 , 2020-2024
## *(Luke, Pasi Rautio, INEP KSC RAS, E.Klyuchnikova)*

Figure 1.3.a. ArcticHubs aims to map and analyse the main global drivers that cause local and regional impacts on different livelihoods and local communities and cultures. ArcticHubs aims to provide global and local, i.e. 'glocal' level solutions to mitigate and adapt to the local impacts caused by global actors.

Global drivers, local consequences: Tools for global change adaptation and sustainable development of industrial and cultural Arctic "hubs" (ArcticHubs)- Horizon2020 , 2020-2024
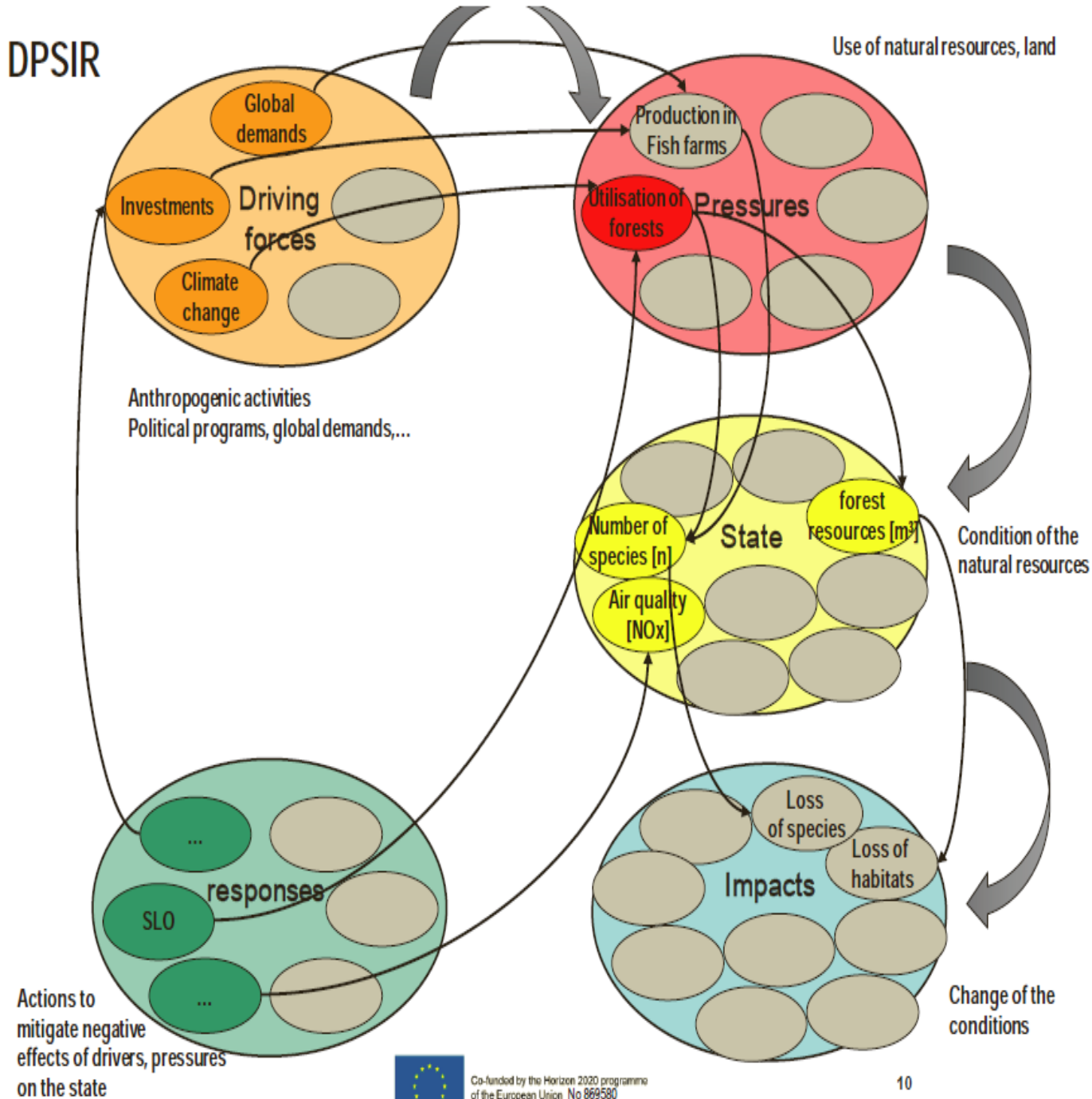
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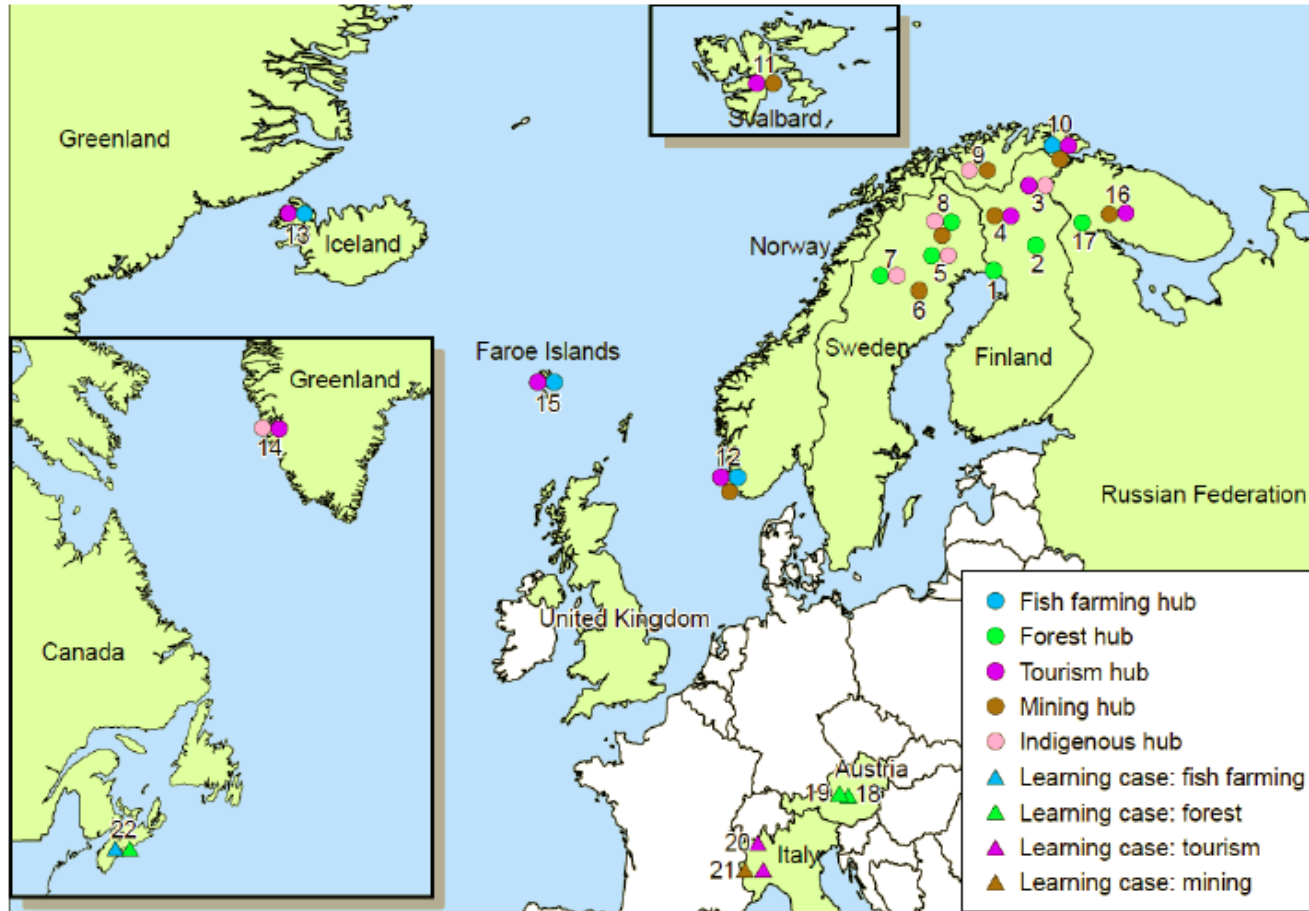
Figure 1.3.b. Locations of hubs and learning cases targeted in ArcticHubs. Green indicates countries with consortium members. Numbers in the map refer to locations of the 33 hubs and 7 learning cases: 1. Kemi, 2. Kemijärvi, 3. Inari, 4. Kittilä, 5. Jokkmokk, 6. Kristineberg, 7. Gran Sameby, 8. Gällivare, 9. Kautokeino-Kvalsund, 10. Varangerfjord, 11. Svalbard, 12. Egersund, 13. Westfjords, 14. Nuup Kangerlua, 15. Sunda Kommuna, 16. Khibiny mountains, 17. Kovdor, 18. Ennstaler Alpen, 19. Liezen, 20. Alagna Valsesia, 21. Germanasca Valley, 22. Halifax, Nova Scotia.

DPSIR

Global demands

Investments

Driving forces

Climate change

Production in Fish farms

Utilisation of forests

Pressures

Use of natural resources, land

Anthropogenic activities
Political programs, global demands,...

Number of species [n]

Air quality [NOx]

State

forest resources [m³]

Condition of the natural resources

...

SLO

...

responses

Loss of species

Loss of habitats

Impacts

Change of the conditions

Actions to mitigate negative effects of drivers, pressures on the state

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Outputs:
1. Identification of major drivers affecting industries operating in the Arctic and also impacts to the Arctic environment, livelihoods & communities;
2. Understanding of the drivers and impacts associated with activities enables more sustainable decision making;
3. Successfully developed **SLO**; improved understanding of synergies & trade-offs for development of the Arctic;
4. Improved **participatory tools** for continuous communication and dialogue among stakeholder groups and decision-makers; viable solutions for improving land-use planning;
5. **Scenario building** for desirable futures, evaluation by experts and local representatives and **policy recommendations** on these basis;
6. Exploitation of created tools by stakeholders in local, regional & national **land-use planning** in each participating Arctic country
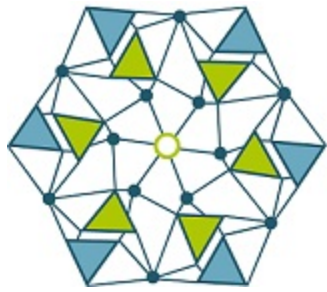
THANK YOU FOR YOUR ATTENTION!

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