

Local risk perceptions on contamination in the Russian-Finnish-Norwegian border area

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Peoples' risk perceptions are not always in line with scientific knowledge, but can still impact human behaviour and policies to a large degree. This study aims to investigate local risk perceptions of hazardous substances, how they affect local food use, use of nature, and local environmental and industrial policies. The formation of risk perceptions will also be studied, focussing on information sources and risk communication.

Background

Many regions and communities of the Arctic have significant levels of hazardous substances in the environment, from local, regional or far-away sources, and this can constitute a health threat (AMAP 2009). Industrial activities associated with natural resource extraction are important local pollution source many places. Such industry provides jobs and economic benefits to people in local communities, but is also a source of diverse human and ecological threats. This is also the case in our study area (Sandanger et al 2013).

To date there has been a lack of cross-border, generalizable data on contaminants in the local foods and their impact on human health and how the local populations' concerns on food security are shaped and what impacts they have on behaviour and policies.

Study area

The study area of the Norwegian- Russian-Finnish border region is sparsely populated, with about 27.000 people. The main population centres are the towns of Kirkenes (Norway), and Nikel and Zapoljarnij (Russia) (see map). Mining industry dominates all these settlements. Both long range transported and local pollution has affected the environmental status of the region. Elevated concentrations of numerous contaminants (i.e., metals, dioxins) have been reported for this region, but limited data exists on contaminants in important food items and their potential risk to human health (Sandanger et al 2013). The use of the environment both as food source and for recreation seems widespread in the area. The local environmental and health risk perceptions with local pollution have not been investigated for 20 years (Smith-Sivertsen et al 1994).

Research questions

- Do different actors establish a threat/risk/security association between contaminants in local foods and health? How does it vary in the population?
- How do the risk perceptions affect local food use and use of the outdoors?
- How do the risk perceptions of local politicians and bureaucrats affect local environmental and industrial policies?

Study design and methodology

To investigate the research questions we employ quantitative and qualitative social science research methods, and also utilise environmental and medical science results.

A survey has gone out to the border area population in the three countries. The survey included questions on (see figure): 1) Concern/fear on pollution and health; 2) Gathering and consumption of local food; 3) Use of nature for different activities like food gathering or (other types of) recreation; 4) personal characteristics; 5) beliefs on pollution sources and levels locally, as well as links between pollution and health; 6) their sources of information on pollution and related health risks.

Local politicians and bureaucrats will also be asked to fill out the survey, as well as be interviewed.

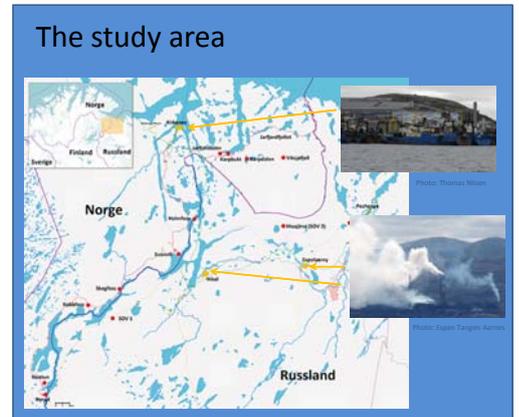
Considering the responses to survey and interviews, as well as comparing responses to 7) the scientifically established status of the region regarding pollution and health risks, we will be able to assess how pollution and risk perceptions affect A) peoples' daily life and well-being and B) local environmental and industrial policies, and C) how risk communication has contributed to this and may be improved.

The main project

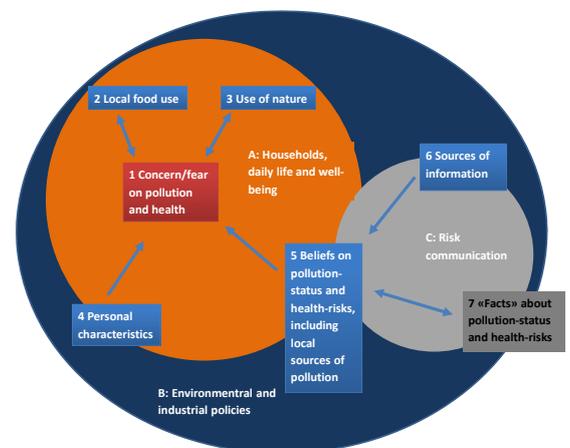
The title of the main project is "Food and health security in the Norwegian, Finnish and Russia border region: linking local industries, communities and socio-economic impacts". The objective of the main project is to assess industrial impact on food safety and human health in highly populated Norwegian, Finnish, and Russian border region.

Contaminant exposures in many Arctic communities are complex with both long-range transport and local sources acting as inputs for contaminants. A number of local industrial sources are present in this area and with planned increased activity. This has raised concerns from the local population regarding food safety and potential risks to health through consumption of food from this region. Contamination of local food could also have economic implications. Thus, there is a need to study relevant contaminants in food and investigate effects and consequences for human health with increasing economical and industrial development.

The project brings together scientists from chemistry, medicine, political science, economics and other social sciences.



Typical local food sources



Main elements of the risk perception study

Work packages in main project

- WP1: Human exposure assessment and identification of dietary sources of exposure across border areas
- WP2: Contaminants in relevant food items – geographical differences and trend data
- WP3: Health effects of contamination in the region – status and future predictions
- WP4: The socioeconomic consequences of contamination and food safety in the region
- WP5: Public awareness and informed policy decisions – addressing human security

References:

- AMAP Assessment 2009: Human Health in the Arctic. Arctic Monitoring and Assessment Programme (AMAP), Oslo, 2009.
- Sandanger, Torbjørn M., Erik Anda, Tore F. Berglen, Anita Evensen, Guttorm Christensen and Eldbjørg S. Heimstad 2013: Health and environmental impacts in the Norwegian border area related to local Russian industrial emissions. Knowledge status. NILU report OR 40/2013.
- Smith-Sivertsen T, Tchachchhine V, Lund E, Norseth T and Bykov V. The Norwegian-Russian Health Study 1994/95. A cross-sectional study of pollution and health in the border area. ISM skriftserie Nr. 42, 1997.

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Project partners and financing institutions