Strategic approach for Socially-oriented Observations of coupled human-nature changes in the Russian Arctic: from quality of life issues recognition to solutions

T. Vlasova
Institute of Geography, RAS
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Evidences that Social Observations have formed a new direction of Integrated Arctic observation system construction

- Social observations have been considered as an important component of the monitoring system of the International Polar Year (IPY) 2007-2008 and the Sustained Arctic Observation Network (SAON) with social observations (well-being, health,......) was endorsed by the Arctic Council. A special social direction of the ICSU/ WMO IPY JC Sub-committee on observations has been established.

SOA conference has demonstrated high achievements in optimizing NSF Arctic Observation Network (AON) and in improving approaches to social indicators identification and data management.

Community-based observations involving local and traditional knowledge have become important component of Circumpolar Biodiversity Monitoring Program as well as other Arctic projects and programmes.

- Arctic Social Indicators (ASI) Project has been developed and ASI –II is practicing a set of indicators in 6 domains.
- A lot of IPY projects (ECONOR, CAVIAR, ELOCA, SLICA, PPS Arctic IASOS)- are carrying out social observations using different methodologies and sets of indicators.
Main Challenges of social observations within Integrated Arctic Observation System

1. Difficulties with integration of natural and social components of observations so needed now when, we have entered a new paradigm: global change (climate, economic crisis, etc.) forces us to see humans and environments as inextricably interconnected.
Main Challenges of social observations within Integrated Arctic Observation System

2. Key social indicators in such domains as social relations, security, creativity, freedom of choice and action can't be quantitatively measured. These indicators which are becoming now of greater importance especially for decision and policy making need qualitative interpretations and special data gathering and management techniques to be applied for their storage.

3. Key social indicators for one country, locality, culture, or person does not necessarily so important for another country, culture, locality or even person. There is great national and regional diversity in the Circumpolar area.
Main Challenges of social observations within Integrated Arctic Observation System

4. No unique methodology and set of parameters to observe, no unique tools and methods for circumpolar social observations. This is complicated by principal differences between socio-economic and policy situation in the Russian North (in the period of transformation for “modernization”) and other Arctic States.
Specific situation in Russia

- Rapid and antisocial way of transition from a centrally planned economy to a more market oriented economic system for most parts of Russia and for a majority of the population implied a severe aggravation of their quality of life conditions including a significant reduction in the material living standard, state of the environment, etc.
- This certainly leads to the human capital degradation in the Russian North.
- That is why Issues of quality-of-life and human capital development in the Russian North should be specially addressed within social observations. Low quality of life and decreasing human capital in comparison with other Arctic States have become the main point of observations.
- For this purpose the idea of socially oriented observations of life quality and human capital appeared and the IASOS Network has started to be constructed as a National Russian IPY initiative and also supported by IPY PPS Arctic cluster and Research Council of Norway.
Main objective and definition: Socially-oriented observations

The main objective of Socially-oriented observations (SOO) is to increase knowledge and observation of changes in quality of life conditions (state of natural environment including climate and biota, safe drinking water and foods, well-being, employment, social relations, access to health care and high quality education, etc.) and - to reveal trends in human capital and capacities (health, demography, education, creativity, spiritual-cultural characteristics and diversity, participation in decision making, etc.). All these changes impact the overall sustainability.
What to observe/monitor?

- Socio-oriented monitoring is observation of specially identified **key issues** (challenges or limits to quality of life) and human-defined **solutions** (targets) set to achieve (better quality of life), **sustainability**.

- For this purpose **socially-oriented key indicators** (key variables) should be identified in order to observe changes on the way to better (or worse) quality of life and sustainability.
The higher the quality of life and better HC- the higher human-nature sustainability.

In order to achieve the main target - the QL improvement and sustainability, it is necessary to adapt and implement the development strategies for sound solution of appearing issues and strategic goals set in interrelated spheres – social, economic, nature-environmental, governance as well as the spiritual-cultural.

The Human-nature System sustainability is influenced by several external impacts such as climate or biodiversity changes, government policies, global market forces, etc.
Approaches of SOO

1. **Strategic** (issues, targets, indicators)
2. Participatory (indigenous and non-indigenous people)
3. Interdisciplinary
4. Multi scale (from local to global)
5. Holistic (science, arts and traditional knowledge Integration)

**Section IV: Common protocols for regional socioeconomic and cultural observations**

Strategic approach to key QL indicators identification

List of QL issues

What are main QL issues?

List of driving forces

What are driving forces contributing to the listed issues?

List of consequences

What are consequences?

List of solutions

What should be done?

List of key indicators for socially-oriented monitoring in order to observe the solutions (strategies implementation)
Common list of questions for semi-structured interviewing
(IPY PPS Arctic Manual)

1. What are main issues affecting the quality of life in the region where you are? Please list issues of concern to your quality of life (e.g., nature, economic, social, culture, governance… etc.).

2. What are the main driving forces contributing to the issues you listed in your answer to question 1 above?

3. What are the main consequences for quality of life of the issues that you listed in your answer to question 1 above?

4. What can be done to achieve a better quality of life and sustainability?

5. What are main indicators, or variables that we should observe to understand the trends for better and worse in the quality of life?
Tools and Methods for key indicators of quality of life identification and acquisition by science with local and traditional knowledge integration

Stakeholder sessions (Apatity 2008)
Semi structured interviews
Statistics, literature, maps, images, Photos repeated in time
Analyses of samples of drinking water and food in polluted areas
We have gathered a lot of semi-structured interviews and continue to collect interviews, photos, statistics at our sites. We have started already the work on analyzing these documents. That is why now we can make only preliminary conclusions.

Main first general conclusions

- Main issues and indicators for further observations identified for all our sites, although there are some local differs in specific sites of observations are:
  - material well-being (wages and incomes) and level of income differentiation among the poorest and the most reach groups of the society;
  - Unemployment level is becoming more and more important issue and indicator, especially youth unemployment;
  - Life expectancy, child mortality and sickness;
  - Quality of health-care system;
  - State of the natural environment (climate change, pollution and quality of drinking water);
  - Poor level of administration control from the local government;
  - Poor level of peoples’ participation in decision making;
  - Quality of education;
  - Quality of socio-cultural service
  - Youth migration and the overall population aging.
The dynamics of the general elderly population pressure

Динамика коэффициента общей демографической нагрузки
Income differentiation in the regions of the Russian North (times)

It is highest in oil and gas regions!
The dynamics of the overall children demographic pressure
Children health is the barometer of northern communities quality of life and human capacities

- Environmental pollution and degradation by industry and transport, poor access to drinking water of good quality low quality of health service are factors people note that lead to bad physical health. This issue cause high sickness rate, low birth rate, high mortality, decreasing labour productivity.

- **High children sickness rate arouses particular alarm.** The head of a kindergarten in Apatity sais that 5 years ago only 24 persons of 120 children had the second group of health and 2 had the third group. So about 75% of children were absolutely healthy. In early 2008 only 20 persons of 120 children had the first group of health, while all others had the second or third group (Report, 2008). According to the official statistics of Murmansk Oblast about 19% of children belong to the third group and are absolutely ill. (Concept…., 2008).
in Apatity - Kirovsk region the second key problem after law salaries is pollution, but our recent interviews have shown that in the economic crises people are becoming less concerned with the state of the environment.
From QL issues recognition to solutions: the case from Lovozero community

- SOO strategic approach enables to identify and monitor the implementation of local strategies that will stimulate the human capital improvement and act not only as the agent of economic modernization but as an important solutions for better state of environment and society.
Reindeers usually lose weight en route between camps and the Lovozero settlement.

Reindeer loss entailing from driving long way from eastern parts of the Kola Peninsula westward to the Lovozero settlement.
Delays in establishing low temperatures

- This traditional nature use practices are being significantly affected by the climate change starting from mid 90s.
- At the initial stage the herders believed that the late autumn and delayed ice formation on water courses were just part of year to year fluctuations and there will be no problem with bringing reindeers over water courses on the ice. However, by 2000 – 2004 the occasional delays in establishing low temperature patterns turned out to be the annual trend.
- Moreover, as the result of delay in utilization, reindeers loose more fat accumulated during summer grazing. Now exhausted animals fall behind the main herd and become easy pray to the wolves. The average loss on the way to the Lovozero at present is 10 individuals out of 1000. Throughout driving to the slaughter 7500 herd loose about 37 t of weight. In monetary terms annual loss of Murmansk Oblast reindeer herders is about $172000.
Solution of this climate change problem

- The project “Reindeer herding and climate change: increasing resilience by tundra-based wind energy sources” was discussed in December 2009 at the meeting with Victor A. Startsev (the Tundra Cooperative Board Chair), and Ivan V. Vdovin Head Administration for Regional Specially Protected Nature Areas of Murmansk Oblast.

Lovozero, December 2009
Reindeer herding and climate change: increasing resilience by tundra-based slaughter and wind energy sources

Creation of the certified slaughter site with freezer powered by self-contained windmill will let store up reindeer meat in the middle of the Peninsula not driving reindeer herds over large distances through an unfrozen tundra.
Other positive ecological effects from the project implementation

- "Polmos" camp 70 km off the Lovozero is nominated to be the project site. There is lack of the forest in the vicinity that could be potential source of firewood. Use of electricity produced by windmill installation for heating cottages will produce positive effect in terms of reduced spending on firewood delivery from distant forests by heavy crawler type vehicles and reduce impacts on tundra ecosystems. It will reduce forest cutting for fuel which is extremely high in the Russian North. The heating of 4 houses takes 80 m³ per year which can be derived from cutting approximately 3 ha of the treeline birch forests.
Other positive ecological and social effects from the project implementation.

- Reduce consumption of diesel fuel by heavy crawler type vehicles used to deliver fire wood for reindeer herders’ camps and in such a way reduce the release of carbon dioxide.
- The introduction of alternative energy sources at reindeer herders’ camps will be an important step towards improving economic well being of the reindeer herders as well as living conditions of households. It will create new jobs especially needed for young people to whom reindeer herding is not a prestigious occupation nowadays. Special training for the youth is proposed.
- The project will sustain traditional lifestyle of Saami people and preserve the knowledge of the elders.
Climate changes adaptation accelerate socio-economic changes

- Changes in climate and biota (ice melting, tundra shrubs getting taller and more numerous, etc.) have become an add factor in accelerating social changes especially in remote rural areas. In relation to the future sustainability in nature and society it is northern communities, their adaptive capacities and creativity that are decisive.

- Adaptation to climate change issues positively effects the economic development bringing more ideas to local initiatives and in such a way increasing economic diversification so needed in the Russian North.

Reindeers are waiting for tourists!
Local, regional and circumpolar comparisons are extremely important within SOO

- **Low level of economic diversification** in couple with other accompanying consequences lead to low Quality of Life and Human Capital development in the North of Russia.
- **SOO multilevel approach** helps us to reveal main negative as well as positive factors of overall sustainability.
- That is why our circum-Arctic cooperation in the construction of the Sustained Arctic Observation Network with social observations is so important.
Opportunities of SOO Networks development

- SOO is one of possible tools to social and natural science synthesis.
- SOO is a way to science, local/traditional knowledge and policy integration.
- SOO strategic approach (together with multi-scale and other approaches) enables to identify and monitor the implementation of local, national and Arctic strategies that will stimulate the human capital improvement and act not only as the agent of economic modernization but as an important solutions for better state of environment and society.
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