International Cartographic Association
Association Cartographique Internationale

Indigenous knowledge transfer through participatory mapping: attitude of the arctic population to communications using mental maps

Antonina Savvinova[a,*], Moisei Zakharov[a]

[a] *M.K. Ammosov North-Eastern Federal University, sava_73@mail.ru, mi.zakharov@s-vfu.ru*

* Corresponding author

Keywords: indigenous peoples, Arctic, knowledge, mental maps

Abstract:

The development of knowledge about the geographical environment for the indigenous peoples of the Arctic was determined by the necessity of life. The provision of food and the life of aborigines directly depend on their ability to navigate, their knowledge of the terrain, and their ability to predict the weather. Traditional kinds of nature use - hunting, fishing, reindeer breeding implied moving over long distances, so the level of knowledge of the surrounding space and communications was quite high. Indigenous knowledge refers to unique, traditional, local knowledge existing in the specific conditions of everyday life of indigenous peoples of the Arctic [3, 5]. Characteristic features of the life of northern communities are the significant remoteness from major economic centers, the complexity of livelihoods, the isolation of settlements, and low transport accessibility. When there are proposed large-scale energy and resource-extraction projects like pipelines, Indigenous communities are often forced to prove their rights to land. Maps are one of the ways land rights are articulated. The mental maps undoubtedly testify to the broad geographical outlook of the local residents and their excellent knowledge of their places of residence and their surroundings, which must be taken into account in industrial development D.R. Fraser Taylor (2014), Jon Corbett (2009), Julie Raymond-Yakoubian (2020), Peter Poole (2003), Valery Tishkov (2015).

This abstract examines the issue of indigenous knowledge transfer using participatory mapping to study the territories of traditional nature use and communications of the Indigenous peoples of the North on an example of the Sakha (Yakutia) Republic of Russia. The territory of Yakutia occupies a large part of the Russian North. More than 40% of the territory is above the Arctic Circle. The climate is severely continental, Yakutia is known for being the coldest region of the Northern Hemisphere - the lowest temperature of -68º C. Yakutia is one of the main regions of settlement of indigenous peoples of the North – the Evenks, the Even, the Yukagirs, the Chukchi and the Dolgans.

The work based on the results of field researches, considered in native communities of 6 districts of Republic of Sakha (Yakutia) in 2021-2023. Information on traditional land use, interregional and local communications was acquired through interviews, mapping exercises with local people from the native communities. To get these issues, we interviewed individuals from a number of different groups (hunters, reindeer herders, administrative workers, elders, youth etc.). We used an open-ended interviewing and survey technique, questions covered the following topics: Communication in everyday life. Economy and traditional land use; Transport and communications; Cultural, social and other communications; Mental map of the surrounding area and the using roads; General data (on nationality, age, gender, language). Survey respondents were not identified by name, no names on surveys or transcription. The traditional land use, intraregional and local communications, transport infrastructure, cultural and social relationships information focused on the location of traditional activities such as hunting, fishing, reindeer herding, and harvesting of medicine plants, locations of cultural and archaeological sites, places of ceremonies, national holidays. During in-depth interviews and questionnaires, we studied the population's opinion on access to the places of traditional nature use, the population's attitude to different types of communication, the local population's perception of the surrounding space through mental maps.

Researchers paid special attention to the method of drawing the mental map of the area, which reflects the communication of the respondents with the world around them. In each village we asked those who were interviewed to participate in a community mental mapping project. Interviewees were asked to indicate areas of importance to hunting for different animals (for meat, fowl and fur), fishing, berry and other plants gathering, sacred sites, historical sites, camp sites and hunting cabins, official and informal roads used to travel to clan lands, nomadic clan communities could also be shown. Respondents placed special icons (stickers) on basic topographic maps of 1:200 000 scale. Traditional knowledge mapping was performed with the participation of elders, members of nomadic clan communities of the study areas, rural residents, including reindeer herders, hunters, fishermen. It is encouraging to note the excellent knowledge of toponyms,

Abstracts of the International Cartographic Association, 6, 222, 2023.
31st International Cartographic Conference (ICC 2023), 13–18 August 2023, Cape Town, South Africa.
https://doi.org/10.5194/ica-abs-6-222-2023

natural cartographic literacy, which is associated with the permanent nomadic way of life of the population, with excellent and obligatory skills of spatial and fairly quick cartographic orientation.

The traditional land use territories, where aboriginal peoples really hunt, fish, herd reindeer do not always coincide with official boundaries drawn from the maps officially produced. All cartographic information from the mental maps were entered into GIS database for spatial analysis. The data from these maps were used to create GIS information layers which include traditional land use, interregional and local communications infrastructure and other. Given the spatial nature of traditional cultural and ecological knowledge, GIS technology can help incorporate indigenous traditional knowledge into decision-making.

Acknowledgements

Funded by the Russian Science Foundation, project No. 21-17-00250 «Interregional and intraregional communications of the indigenous peoples of the North in the context of global challenges: history and modernity».

References

Corbett, J., 2009. Good practices in participatory mapping. In: A review prepared for the International Fund for agricultural development (IFAD), pp. 1-59.

Poole, P., 2003. Cultural mapping and indigenous peoples. A report for UNESCO. pp. 1-20.

Rymond-Yakoubian, J., Pulsifer, P., Taylor D.R. F., Brattland, C. and Mustonen, T., 2020. Mapping and Indigenous Peoples in the Arctic. In: Governing Arctic Seas: Regional Lessons from the Bering Strait and Barents Sea. pp. 293-319.

Taylor D.R. F., 2014. Some recent developments in the theory and practice of cybercartography: Applications in indigenous mapping: An introduction. In: Modern Cartography Series, 5, pp.1-15

Tishkov, V., Novikova, N. and Pivneva, E., 2015. Indigenous peoples of the Russian Arctic. In: Herald of the Russian Academy of Sciences. Vol. 85(3): pp. 278-286.