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Theme

Theme 2: Observing in Support of Adaptation and Mitigation

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Poster title (brief) Changes in the natural and climatic conditions of human life in the Arctic zone of Russia

Abstract - text box

The continuing global warming and the growth of climate extremes are strongly identified in the Northern and Arctic areas. Northern territory is 68% of Russia. For Northern territories the main factor of their sustainable development is the natural and climatic discomfort of the human life. In this regard, the urgency of using regionalization of Russia and the natural conditions of human life for assessing the conditions of the modern climate and forecasting the living conditions of the population for the future climate, is growing. Investigation of natural and climate conditions in the Northern and Arctic areas of Russia was conducted using the method of regionalization of Russian Federation territory by environment conditions of human life. The regionalization is made on the base of influence degree of the main natural factors: colds, heat, moisture, altitude, catastrophic events (hydrometeorological, seismic, geocriological).

A significant decrease in climatic discomfort areas was observed during the warming period from 1991 to 2010. It was manifested in the reduction in the territories with absolutely unfavorable conditions for the vital activity of the population, and in the formation of conditions with a lower degree of discomfort in their place. Absolutely unfavorable conditions remained only in the less populated central and (partly) eastern part of the arctic zone. Changes were connected with: the decrease in the sum of negative temperatures, the decrease in the number of days with very low temperatures as well as the increase in the sum of active temperatures and the increase in the length of the period without frost. Maximum decrease in climatic discomfort was observed in municipalities on the coast of Barents sea and on the west coast of Kara sea with the population of 1.44 million people (88% of the all Arctic population in Russian Federation) and in municipalities on the coast of the Pacific ocean (south part of Chukotka region). Real consequences of the warming between 1991 and 2010 in the Arctic zone of Russia are similar to those expected by the numeric experiments using global climatic model.