

Integrated Climate Change Strategies for Sustainable Development of the Russian Arctic Regions

(case-study of Murmansk oblast)

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What is the RREC?



RREC is an independent non-commercial organization founded in 2000 by the European Commission and the Russian Academy of Civil Service

Our mission

Promotion and introduction of advanced ideas, policies, standards and best practices to ensure environmental quality and sustainable development of Russia by providing information dialogue and implementing practical actions.

Climate change and energy efficiency activities:

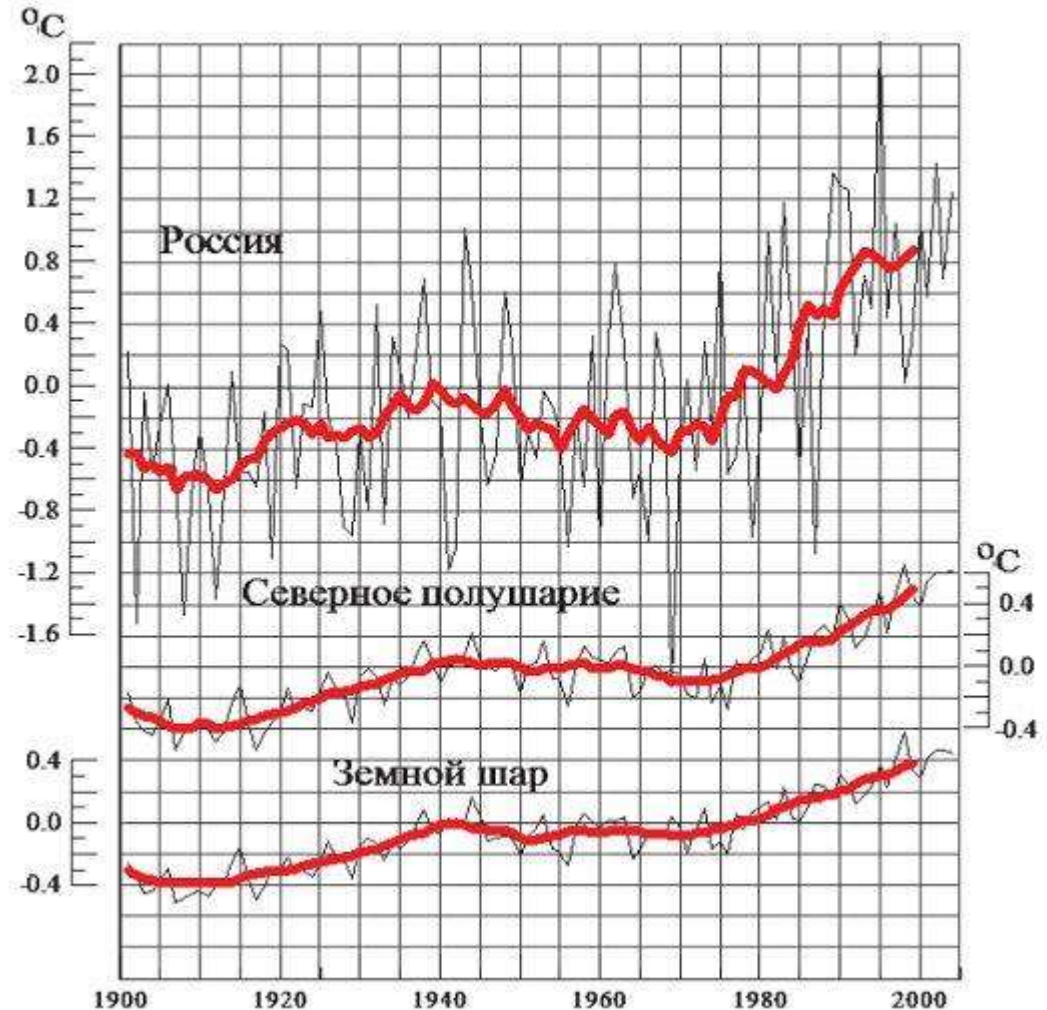
- promotion of EU-Russia co-operation on climate change;
- expert assistance to the Russian government;
- awareness-rising and capacity-building;
- analytical work;
- practical projects on mitigation and adaptation in Russian regions, etc.

Climate Change in Russia: temperature growth

Temperature had increased by 1,29°C in Russia in 1900-2004 in comparison with global 0,74°C growth.

Surface air temperature changes in Russia, the Northern Hemisphere and the World, 1901-2004.

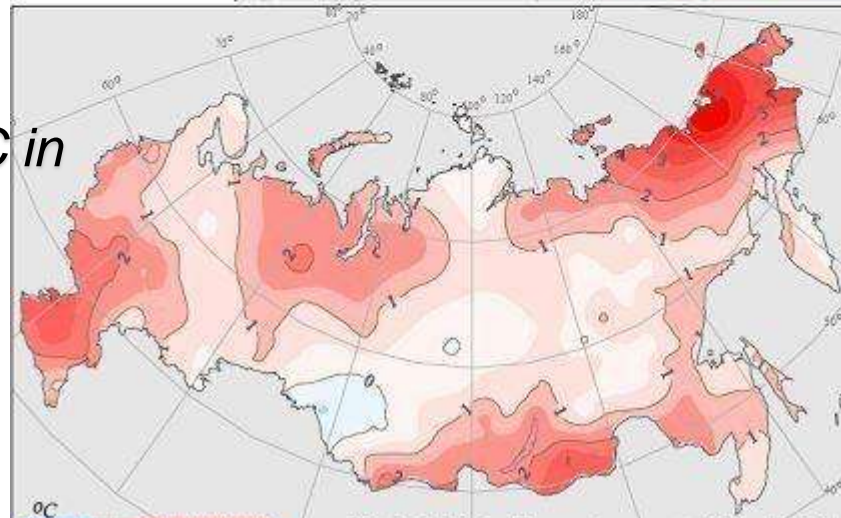
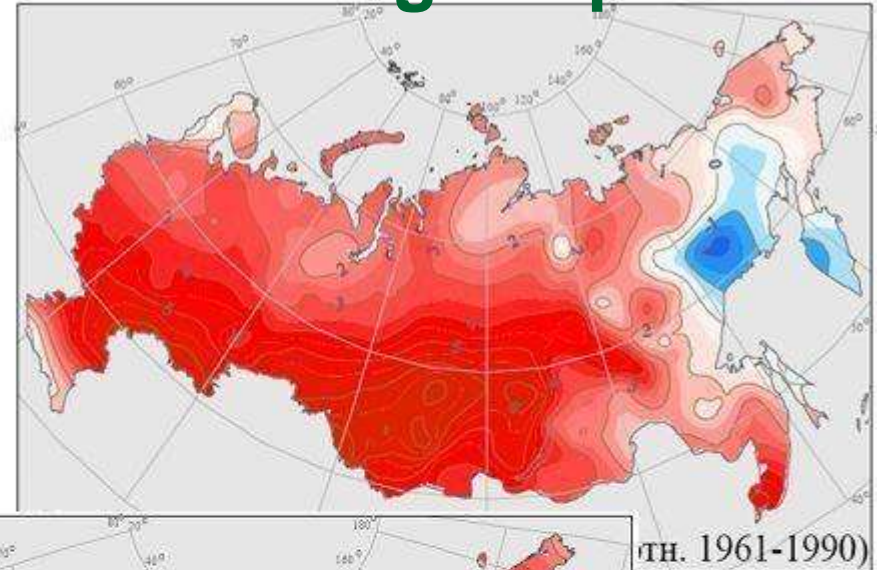
Source: Strategic Prediction, Roshydromet, 2006.



Climate Change in Russia: uneven distribution of climate change impacts

Due to its vast territory and variety of geographical conditions, climate change effects have considerable spatial and seasonal variations in Russia.

Surface air temperature in winter and summer 2007, °C in comparison with an average for 1961-1990.



Source: Report on climate features
In Russia in 2006, Roshydromet, 2008.



Climate Change Vulnerability: Southern regions

Water shortages and significant crop-yield decrease in Northern Caucasia, Volga, Ural and Western Siberia



Astrakhanskaya oblast,
Kaspian region.

Photo: A. Bezlepkin, 2007



Climate Change Vulnerability: mountain areas

Intensified ice-melting and weather extremeness -> increased avalanche and mud-flow risks, risks for traditional way of life of local people

Bolshoy Azau glacier, Elbrus, North Caucasus

august 2007



1958



august 1958



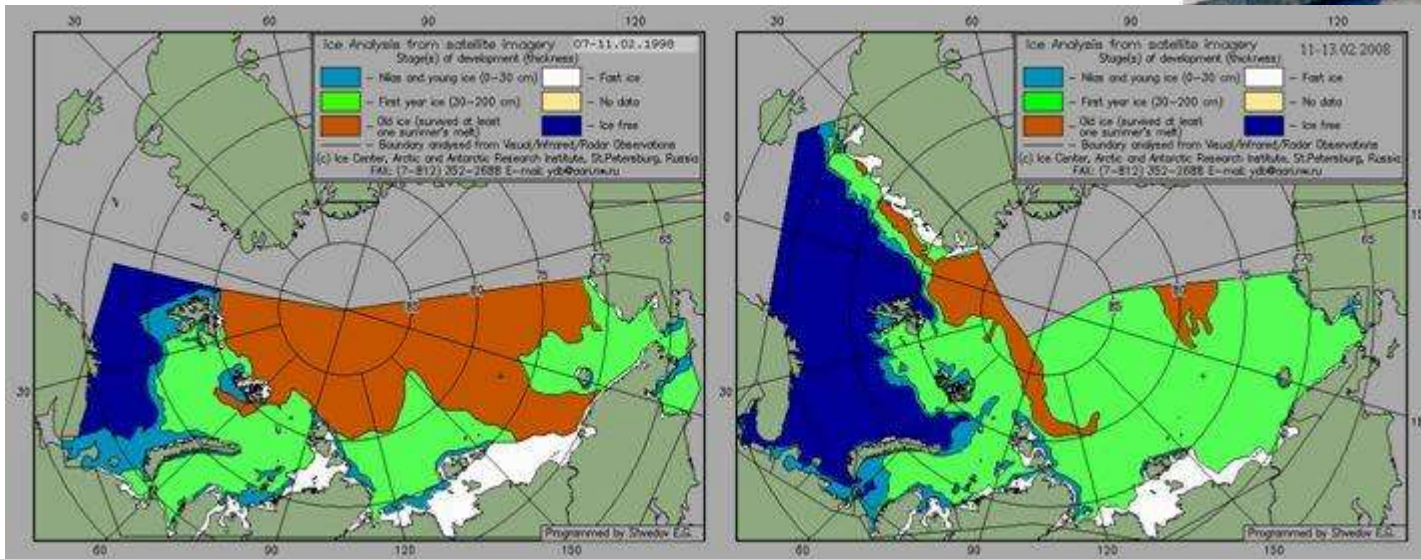
2007

Source: MSU Faculty of Geography, RREC.



Climate Change Vulnerability: Arctic regions

Arctic regions: infrastructure damages because of permafrost thawing, coastal erosion, sea-level rise, threat to ecosystems, traditional way of life of indigenous people...



Dynamics of the ice thickness of the Arctic sea waters (February 1998 and 2008). (green – first-year ice; orange – old ice; blue – ice free) [AANII]

columnar deflection
Norilsk, 2006
Photo: V.Konitshev



Adaptation process in Russia

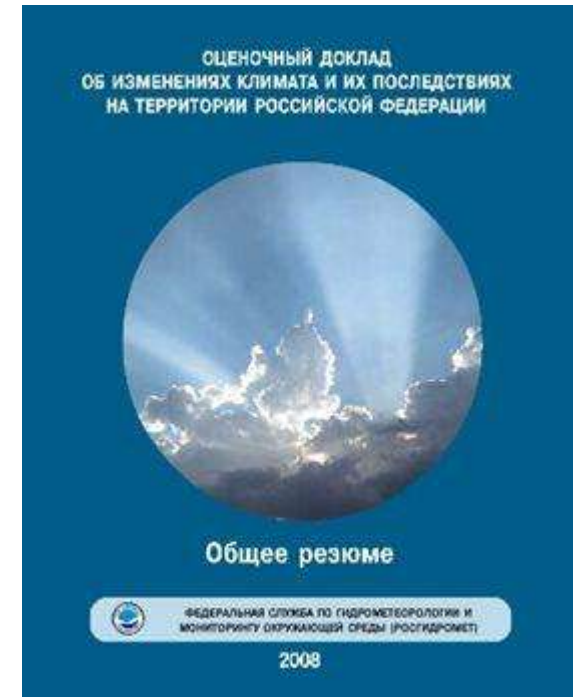
1. Late start comparing with other Annex I countries, because:

- Climate change skepticism;
- “Negative role” of positive climate change impacts (development of the Northern Sea Route, extension of arable land, increase of crop-yield, and reduction of heating costs) -> popular misunderstanding that global warming is favourable for a northern country like Russia;
- Climate change is not among top-priorities for federal and regional government;
- More focus on energy efficiency and environmental needs at the local level;
- Lack of long-term vision and robust practice of incorporation of environmental concerns into development programmes.

Adaptation Process in Russia

2. ... however, strong science basis:

- a significant number of institutes and research centres carrying out climate monitoring, climate change impacts assessment, climate modelling, GHG observation, etc.;
- coordinating role of Roshydromet - a national hydrometeorological service that is a national focal-point for the UNFCCC and Kyoto Protocol in Russia;
- Russian scientists contribute to the IPCC reports and technical papers and other international research works;
- regular presentation of climate monitoring reports by Roshydromet;
- although, lack of economic assessments.





Adaptation Process in Russia

3. There is no regulatory framework

- there is no national climate change or climate adaptation strategy in Russia (the same is true for individual regions);
- adaptation measures are not included into sectoral or regional development programmes.

4. Stakeholders involvement

- lack of experts dealing with adaptation issues (more attention is paid to mitigation, role of Russia in the post-2012 negotiations, carbon trading);
- poor interministerial interrelations and no “top-down” political signals -> lack of information in the ministries and specialized agencies, esp. responsible for regional development;
- Weak cooperation between scientists, decision-makers, business, general public



Adaptation process in Russia

5. First practical steps

Government initiatives:

- First Russian Assessment Report (2008)
- Climate Doctrine of the Russian Federation (draft presented in 2009)

Sectoral projects:

- UNDP/Embassy of Norway project 'Climate Change Impacts on Public Health in the Arctic region' (2008)
- Public preparedness (awareness-rising and capacity-building activities of NGOs)

Regional initiatives:

- UNDP/RREC project in Murmansk oblast (2008-2009)





UNDP/RREC Project (2008-2009)

“Integrated Climate Change Strategies for Sustainable Development of the Russian Arctic Regions (case-study of Murmansk oblast)”

Objectives:

- to perform a comprehensive assessment of climate change impacts in the individual region of the Russian Arctic (Murmansk oblast), including impacts on its economic development, social aspects;
- to provide recommendations for decision-makers on development of adaptation and GHG emissions reduction strategies for various regional economic sectors to be further incorporated into socio-economic development programmes;
- to stipulate attraction of attention to climate change issue among decision-makers, businesses, broad public of the Russian Arctic, and in the country as a whole.



UNDP/RREC Project (2008-2009)

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Murmansk oblast:

- situated in the Arctic region;
- high vulnerability of northern ecosystems, society and economy to climate change impacts;
- high concentration of strategically important, however, climate-reliant economic sectors (maritime transport, fishery, infrastructure, etc.);
- higher population density in the region, compared to other Arctic territories of Russia (over 40% of the Russian Arctic population);
- vulnerable social groups (indigenous people, elderly people, etc.);
- new strategic region: new opportunities due to climate change and new GHG emissions (development of the Northern Sea Route, oil and gas extraction in the off-shore area, tourism, increased wind-power production).





UNDP/RREC Project (2008-2009)

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Activities:

- **International conference on adaptation to climate change**, organised under the auspices of Roshydromet and Administration of Murmansk oblast (Murmansk, 13 May 2008);
- **Expert round-table** to elaborate a detailed action plan on adaptation for Murmansk oblast (Murmansk, 14 May 2008);
- **Comprehensive study** to underpin the role of integrated approach to climate change tackling at regional level (2008-2009);
- **Presentation of the project results** at the Murmansk International Economic Forum (October 2009): **expert round-table** to discuss the outcomes & **press-conference**





UNDP/RREC Project (2008-2009)

“Integrated Climate Change Strategies for Sustainable Development of the Russian Arctic Regions (case-study of Murmansk oblast)”

What is new?

- An integrated approach: adaptation + mitigation
- Pilot comprehensive climate change project in the Russian Arctic
- The first project on adaptation implemented at a regional scale
- Consolidation and peer review of existing information and activities in the field of climate change in Russia



UNDP/RREC Project (2008-2009)

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Recommendations

ADAPTATION: key sectors

- Ecosystems and environment
- Fishery
- Mining industry in the shelf areas
- Energy sector
- Maritime transport
- Infrastructure: coastal zones and permafrost areas
- Extreme weather events
- Agriculture and forestry
- Tourism
- Public health
- Indigenous people

MITIGATION: potential activities

- Energy efficiency and energy-saving;
- Development of wind-power;
- Development of small-hydropower;
- Utilisation of biogas;
- Development of tidal-energy;
- Increase share of natural gas in the fuel balance;
- Carbon capture and storage (CCS) – in the long-term perspective



UNDP/RREC Project (2008-2009)

Comprehensive approach

Potential integrated projects for Murmansk oblast' that, on the one hand, would lead to GHG emission reduction, and on the another hand, would help reducing climate risks:

- Projects aimed at use of biomass (primarily agricultural and forestry residual waste) for heat and electricity generation in villages, in particular in the remote areas;
- Introduction of new energy efficient technologies and review of energy consumption norms in buildings;
- Establishing of ecovillages and development of ecotourism in the northern areas, especially those inhabited by indigenous people;
- Development of demonstration "low-carbon", renewable energy sites

(all these projects may be replicated in other Arctic regions)



UNDP/RREC Project (2008-2009)

Recommendations: further steps

1. immediate actions (2009-2012)

- development of the National Climate Strategy;
- establishment of a special body responsible for climate change;
- development of integrated climate strategies for the Arctic regions;
- revision of sectoral regulations with regard to climate change factor;
- energy-saving activities and promotion of renewable energy, etc.

2. mid-term actions (2012-2020)

- implementation of comprehensive climate strategies;
- development of risk insurance system;
- development of innovative schemes to finance activities on adaptation;
- implementation of large-scale regional programmes on sustainable energy, etc.

3. long-term actions (until 2050)

- creation of "zero carbon" areas;
- considerable increase of the renewables in the regional energy balance;
- introduction of CCS practice into energy production technology;
- implementation of large-scale regional programmes on adaptation, etc.

+ awareness-rising, capacity-building and strengthening co-operation



UNDP/RREC Project (2008-2009)

Uncertainties and knowledge gaps:

- **Lack of climate change data, especially at the regional level. The following activities may fill in this gap:**
 - development of monitoring systems;
 - promotion of regional climate modelling;
 - establishment of a unified on-line open data base of the climate changeability parameters, etc.
- **Lack of economic assessments of climate change, costs and benefits of adaptation and mitigation measures. What is needed:**
 - an inventory of greenhouse gas emissions in the Arctic regions;
 - Economic studies for better understanding of climate change effects, cost of adaptation measures and their economic benefits;
 - Assessment of co-benefits and cross-cutting issues, etc.



Conclusions

- Russia is just at the beginning of the adaptation process
- However, recent activities of the Government show that climate change and specifically adaptation issues are gaining importance
- The “top-down” decision-making approach so typical for Russia should be complimented with the “bottom-up” one. Climate change strategies are needed, on the first hand, at regional and local levels with regard to specific climate, environmental and socio-economic circumstances of the territory
- adaptation strategies should go hand in hand with mitigation. Such integrated approach will help to use resources more efficiently, reduce costs and avoid duplication of work
- Awareness-rising and capacity-building (especially of regional decision-makers and local communities) are critical for further climate change tackling actions
- Co-operation between stakeholders, regions and countries of the Arctic could promote sharing of best experience, knowledge and practices in elaborating and implementing climate change strategies

Thank you for your attention!

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