

Current status of operations of NEACOF

Valentina Khan
North Eurasian Climate Center



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

**WMO International Workshop on Global
Review of Regional Climate Outlook
Forums, Ecuador, 5 – 7 September 2017**

NEACOF background



NEACC is coordinating the NEACOF on the base of Hydrometcenter of Russia. NEACOF has been held twice per year, at the end of spring and at the end of autumn (physical and on-line sessions) Winter and summer are target seasons.

The seasonal forecast is in interest for application in different socio-economy sectors such as agriculture, construction, emergency situations agency, energy, transportation, health etc. The housing and communal services, agricultural sector are most demanded in forecast information. Seasonal forecasts successfully used to estimate natural gas/coal consumption to operate electricity and heating systems in energy sector. The outlook information is useful for strategic planning of financial and human resource for emergency protection work including forest fires.

Existing funding mechanisms:

Partial Roshydromet funding

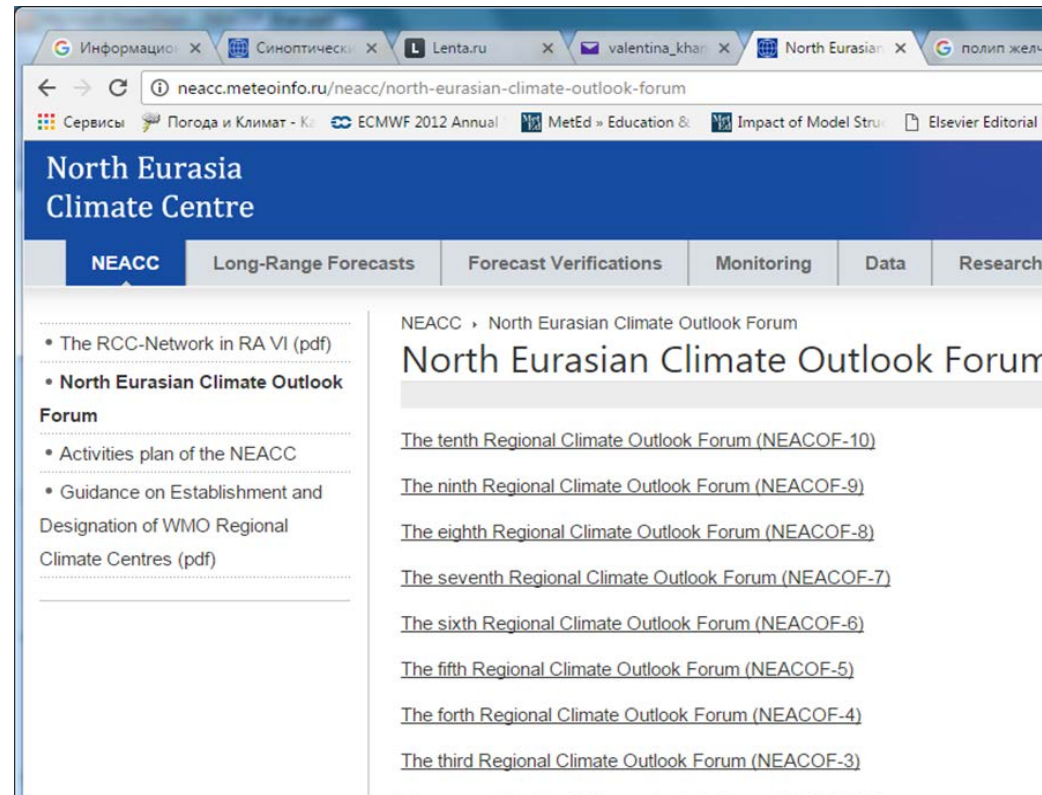
Partial Hydrometcenter of Russia support

Grants from Russian Foundation for Basic Research

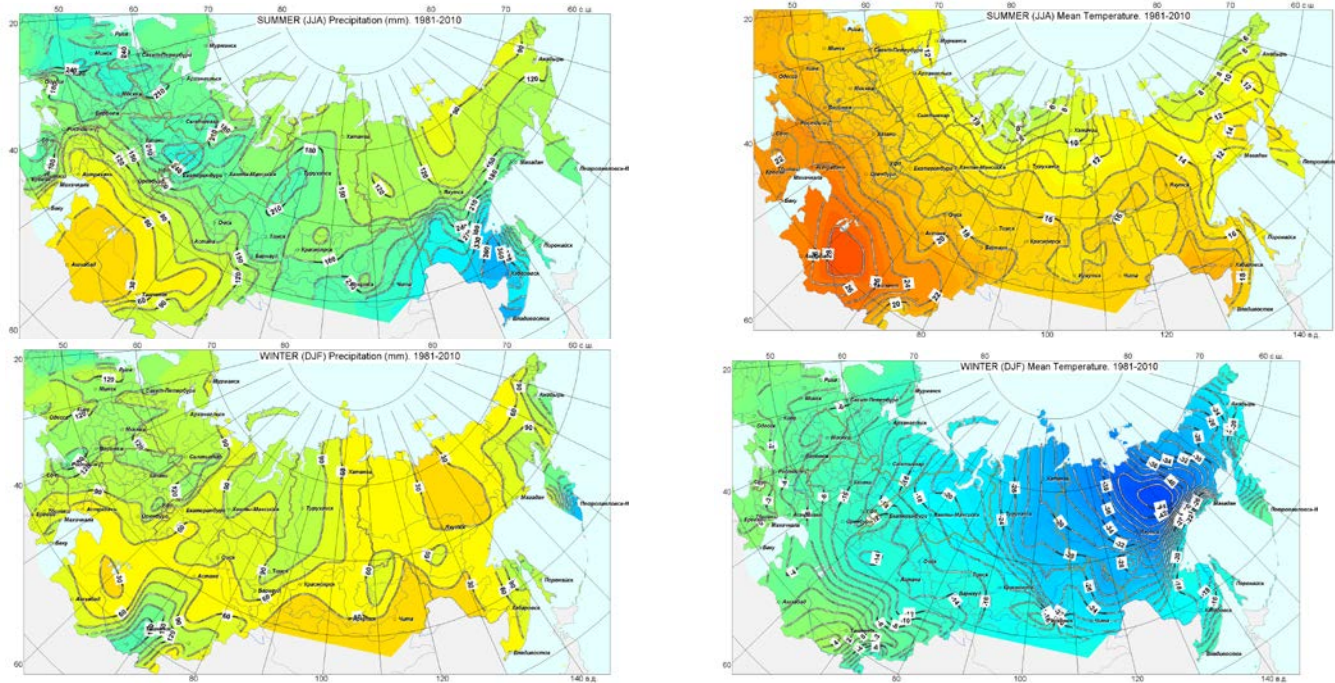
Support of Regional Hydrological Center of Central Asia

through World Bank

WMO support



NEACOF background



Major forcings of the regional climate - interplay of advection of the warm and wet air from the North Atlantic, advection of cold and dry air from the Arctic and Siberia and invasion of dry and warm airflow from Africa and Central Asia region. The Far East is characterized by monsoon climate: warm and wet during summer season, dry and cold for winter time. Cyclones of arctic front, and polar cyclones are acting during a year. Seasonal summer cyclones persist over Asia region during summer. The influence of intensity and expansion of Siberian High is characterized for winter season. Wave activity, and blockings plays also important role.

The NEACOF process (1/3)

Available data and products for NEACOF

Data:

- Observational climate data for FSU region (period varies from station to station),
- Climate normals (1961-1990, 1979-2007),
- Digital forecast data PLAV and MGO models for period from 2011 up to now

Monitoring products:

- State of SST, sea ice extent, snow cover and circulation indices (PNA, EA, WA, WP, EU, NAO) are considered as an sources of predictability for the FSU region. Influence of ENSO is weak.
- The current climate conditions and state of large scale circulation patterns have been monitored. This information is available via NEACC website.
- Long-term tendencies of air temperature and precipitation over FSU, anomalies of t2m and P for the last year, the highest regional anomalies for previous year ranked on record are provided in the climate monitoring outlook and distributed via NEACC website.

Seasonal predictions:

- PLAV and MGO models from Russia
- output of empirical models,
- GPCLRFs, RCCs forecasts
- input from APCC, EUROSIP, LC-MMELRF
- contribution from NHMSs of FSU

The NEACOF process (2/3)

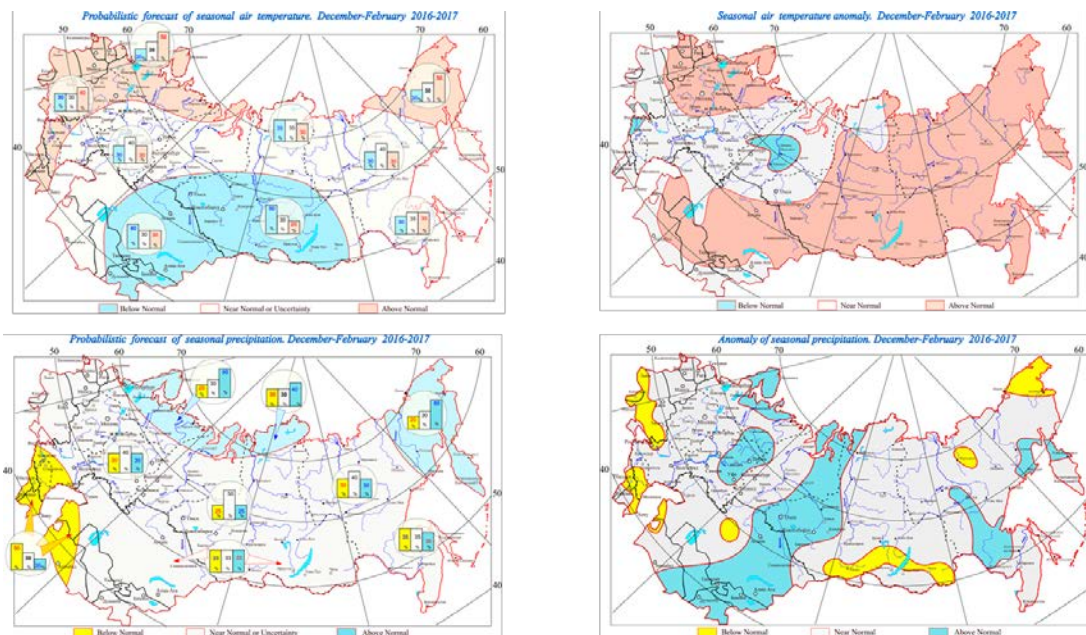
Stages in developing seasonal forecasts

- Forecast objects
- Sources of predictability and physical assumptions
- Climate monitoring background
- Oceanic Forecasts: Sea Surface Temperature
- Atmosphere: General circulation and climate indices
- Air temperature and precipitation forecasts over North Eurasia and areas under consideration (GPCs, RCCs, NHMSs, other institutions)
- Synthesis and analysis of available monitoring and forecast information
- Verification of previous forecasts
- Group discussion and formulation of consensus forecast
- Consensus statement of expected climate conditions for upcoming season

The NEACOF process (3/3)

GPCs and NEACC forecast skills have been monitored, specific models are identified with relatively better performance for the region of interest

COMPARISON OF CONSENSUS SEASONAL FORECASTS WITH OBSERVATION AIR TEMPERATURE DJF 2016-2017



Consensus seasonal outlook are evaluated qualitatively.

Consensus outlook is disseminated to national users using NEACC web resources as well.



Capacity Development activities (1/2)

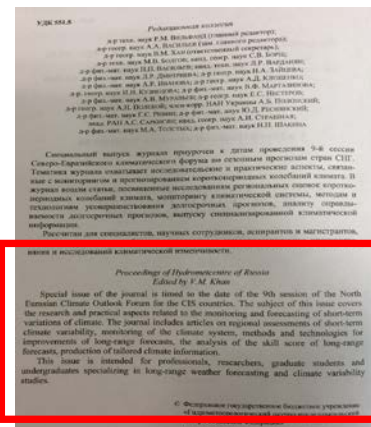
The NEACOF program during physical sessions includes training component focusing on long-range technology issues.

The physical session of training course usually carried out one day before the NEACOF.

The distant training course has been developed using web resources of RTC-Moscow.

Current training activities are partially addressing the main capacity development needs in NHMSs. There is a necessity to increase duration of training course with considerable part of practical exercises.

Research activities are underway within bilateral international projects (Kazakhstan&Russia, Belorussia@Russia)



Special issue of scientific-technical journal “Trudy Gidrometcentra Rossii” under framework of NEACOF-9 was published. NEACOF-9 participants submitted various papers

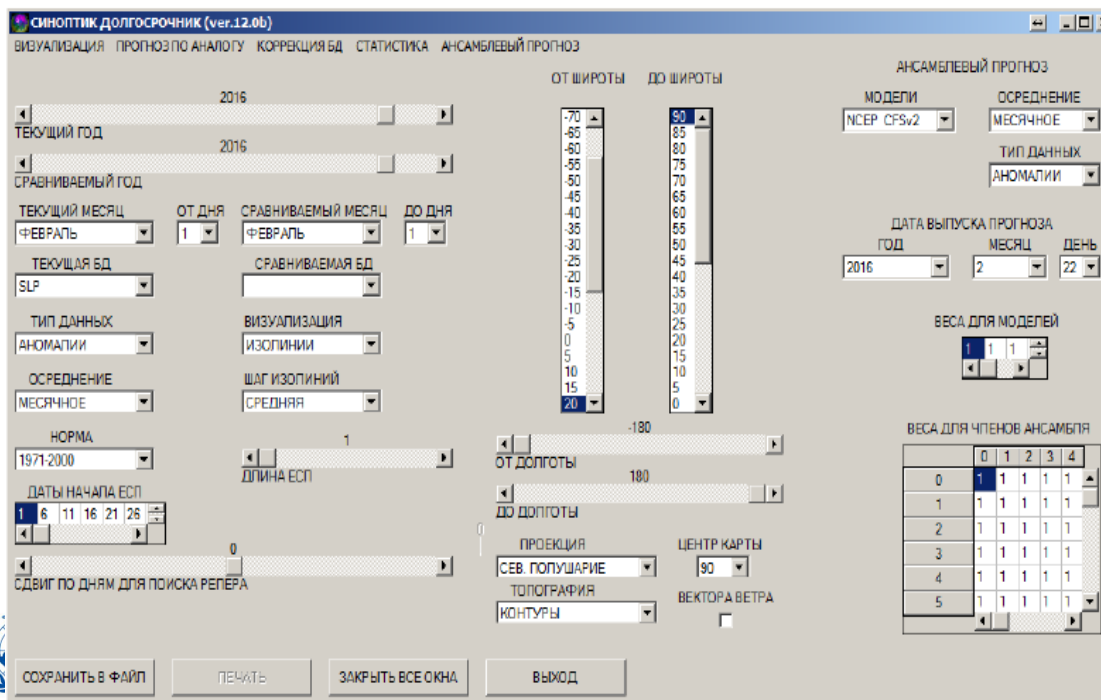
For upcoming NEACOF-13 special issue of scientific-technical journal “Trudy Gidrometcentra Rossii” will be published again. Participants of NEACOF-13 are in process of submitting papers for publication.

Capacity Development activities (2/2)

Special software was developed for analysis and interpretation of climatological and forecast data.

“Long-range forecaster” software is interactive tool developed by V. Tschepelev from Roshydromet using IDL programming language.

The main objective of this software to assist long-range forecasters from NHMSs to analyze and interpret forecast information.



There are following main modules in the software

- Developing long-range forecasts using synoptical statistical methods
- Visualization and analysis of ensemble seasonal forecasts from hydrodynamical models
- Integration of empirical and hydrodynamical forecasts
- Statistical analysis of climatological and forecast data

User Involvement

Sector oriented discussions are in the program of NEACOF. Results of successful interdisciplinary collaboration are presented during NEACOF sessions.

The program of the forthcoming NEACOF (November 2017) includes three round tables focusing on health, water resources, agriculture and forestry sectors.

NEACOF mechanisms is used for collecting NHMSs feedback.

The major stakeholders are interested in using specialized models where climate information is accounted. The most successful experience of using climate products by sectoral users is in water resources, agriculture and forestry sectors.

SWOT analysis

Strengths: NEACOF is the most effective mechanism for coordination and cooperation of NHMSs of FSU in climate services provision; there is a visible progress in capacity building of NHMSs specialists

Weaknesses: A limited number of participants from FSU can participate in NEACOF; audience from economy sectors is not enough active

Opportunities: New projects are under consideration to sustain NEACOF; development of new user oriented models is ongoing on within the framework of scientific research activity

Threats: There is a risk for sustainability of organization of physical sessions of NEACOF and training courses

Way Forward

Research activity within scientific projects (Russian National Foundation, Bilateral Scientific Projects) will lead to the development and improvement of the regionally oriented climate products for the CIS countries.

User engagement will be enhanced through NEACOF mechanism and advertisement of NEACOF products

New projects will be submitted to sustain NEACOF (WB project, Russian Foundation for Basic Research Projects, UNDP cooperation).

Training courses will be more specific covering different topics of forecast technology. Increasing the duration of training course is under consideration.

Agenda of NEACOF is adaptive to respond user needs.

There is a plan to modify the content of forecast bulletin.

New approaches will be developed to efficiently evaluate the NEACOF consensus forecasts.

Opportunity of RCCs coordination and cooperation in RAI and RAVI through NEACOF mechanisms will be considered.

Thank you Merci



WMO OMM

World Meteorological Organization
Organisation météorologique mondiale