

**Submission from Russian Federation with views on research dialogue, including information on technical and scientific aspects of emissions and removals of all greenhouse gases from coastal and marine ecosystems (Research and Systematic Observation-SBSTA)**

Russian Federation welcomes the conclusions of SBSTA at its thirty-fifth session (FCCC/SBSTA/2011/L.27) and the invitation to submit views on research dialogue including information on technical and scientific aspects of emissions and removals of all greenhouse gases from coastal and marine ecosystems. Russian Federation appreciates that SBSTA in cited conclusions noted the views of Parties regarding the importance of other ecosystems with high-carbon reservoirs, in particular terrestrial ecosystems, for example steppe, tundra and peatlands. These ecosystems demonstrate maximal levels of carbon accumulation in belowground sphere and are capable to maintain functions of climatic regulation on biome level.

Area of tundra ecosystems in Russia is about 280 mln. ha (16% from total country area). Carbon storages in humus and peat of soil layer in different tundra types vary from 100 to 200 t C per ha, total carbon reservoir in soil of Russian tundra is close to 28.6 Gt of C. Specific feature of tundra is permafrost, upper limit of which is in depth 50-150 cm, where significant amounts of organic matter are concentrated. Climate Change leads to permafrost degradation and to increase of seasonal thaw depth that makes tundra ecosystem extremely vulnerable. Recent scientific estimations of tundra inputs to global greenhouse gases budget have high level of uncertainties. There are some results of instrumental observations that reveal an acceleration of carbon dioxide and methane emissions in tundra under warming climate.

Peatlands are – as globally the most important long-term carbon store in the terrestrial biosphere - of utmost importance for regulating atmospheric carbon dioxide. Peatlands furthermore control fluxes of much stronger GHG gases such as methane and often nitrous oxide. Climate change has a strong feedback to these peatland functions. Degradation of peatlands is a major and growing source of anthropogenic greenhouse gas emissions. Concerted action for the protection, wise use and restoration of peatlands should therefore be a global priority with respect to climate change mitigation and adaptation, linking work at global, regional and local levels. Of all countries of the World, Russia has the largest peatland area (over 140 mln. ha, together with other wetlands more than 370 mln. ha) topђ, and the largest volume of peat carbon (from one quarter to one half of global peat carbon). Over the last 10 yrs large efforts have been made to strengthen the position of peatlands in climate change mitigation and adaptation policies. Russia has played an important role in raising awareness and in decision making with respect to peatlands in the CBD, the Ramsar Convention on Wetlands, as well as the UNFCCC. With respect to adaptation priority issues include assessment tools, methodologies and best practices development for peatlands under critical conditions (permafrost, steppe, and mountain peatlands, peat fires etc.) listed as most vulnerable to climate change, as well as influenced by human impacts (highly populated regions, extractive industries etc.). With respect to mitigation main efforts have to be directed on studying and developing incentive mechanisms for GHG emissions reduction from peatlands via protection, wise use, re-wetting and restoration.

**Steppes, meadows and its anthropogenic modifications** on chernozem soils, including fallow land and pastures, occupy in Russia more than 220 mln. ha. These ecosystems are most productive in temperate zone with net primary production up to 7-10 t C per ha per year, zonal net primary production increases one in zones of northern and south taiga. Natural steppes conserve giant amount of carbon as humus and organic-mineral compounds of chernozem soils. Almost complete agricultural cultivation of European steppes in XIX century and extensive development of virgin steppes of South Ural, West Siberia, Northern Kazakhstan and Altai in middle of XX century present two large scale crisis, that led to losses of giant amount of carbon in chernozem soils, high changes of albedo, transpiration and river flows. These changes caused to massive deliberation of greenhouse gases to the atmosphere.

Russian Federation devotes serious attention to developing of researches of climatic regulation functions of ecosystems with high-carbon reservoirs. Russian Academy of sciences (Institute of Geography, Institute of Forest Science, Centre for Ecology and Productivity of Forests etc.), Roshydromet (Institute of Global Climate and Ecology, Arctic and Antarctic Research Institute, State Hydrological Institute etc.), administrations of specially protected areas and other organizations implement different programs and projects, targeted on different problems of tundra, peatlands and steppe in relation to Climate Change. The results and lessons learned enable the identification of research priorities and adaptation actions to be applied on a local, regional, continental and world level. Nevertheless, the level of co-ordination of international research efforts is not sufficient for conservation and effective management of climatic regulation functions of these ecosystems in Climate Change conditions.

Russian Federation suggests to identify next scientific and technical questions, important in frame of the research dialogue:

- improving of system of area identification of tundra, peatlands and steppe and its anthropogenic modifications;
- detailed quantitative analysis of biogenic (biomass, net primary production, dead organic mass) and soil (humus, peat, organic-mineral compounds) components of carbon cycle in tundra, peatlands and steppe;
- a synthesis of data on carbon balance in tundra, peatlands and steppe ecosystems with accounting of its modifications due to different anthropogenic transformations (mechanical disturbances and pollutions in tundra; draining, water regimes changes, fires in peatlands; ploughing, pasturing, successions in fallow lands, invasions of non-native species in steppe);
- a development of schemes and mechanisms of economical stimulations of conservation and restoration of tundra, peatlands and steppe for purposes of carbon sequestration and emissions reductions;
- a development of technologies of monitoring of green house gases emissions due to fires in steppe fallow lands drained peatlands;
- an identification of input of efforts on conservation of tundra, peatlands and steppe ecosystems in specially protected areas, reserves and national parks to national activities on reductions of greenhouse gases emissions.

The Russian Federation proposes to hold a meeting before the 36-th session SBSTA and to discuss the proposals of the Parties to the UNFCCC dialogue on priorities and prepare a summary for a session of the SBSTA.

In addition, the Russian Federation considers that should instruct the IPCC to summarize existing research in the field of technical and scientific aspects of emissions and sinks of all greenhouse gases in different landscapes and ecosystems and to prepare a publication.