NEESPI is an interdisciplinary program of internationally-supported Earth systems and science research that addresses large-scale and long-term manifestations of climate and environmental change.

NEESPI Study Area includes: Former Soviet Union, Northern China, Mongolia, Fennoscandia, & Eastern Europe
Life on the edge: “Most of Northern Eurasia does not receive a sufficient amount of heat and in the regions where there is enough heat there is a significant deficit of water”.

Rationale for NEESPI

1. Strong interactions in the system terrestrial ecosystem - atmosphere hydrosphere - cryosphere - human society and feedbacks to global energy, water, and carbon cycles in the region and beyond
2. Strong climatic and environmental changes
3. Strong societal impacts and feedbacks
4. Lack of tools to address science questions
The overarching NEESPI science question:

• How do Northern Eurasia’s terrestrial ecosystems dynamics interact with and alter the biosphere, atmosphere, cryosphere, and hydrosphere of the Earth?

This question can be reformulated in a pragmatic way as:

• How do we develop our predictive capability of terrestrial ecosystems dynamics over Northern Eurasia for the 21st century to support global projections as well as informed decision making and numerous practical applications in the region?
NEESPI Science plan major focuses

- Focus on transient zones that are most vulnerable in the future changes
  - Coastal zone
  - Tundra-forest
  - Forest-steppe
  - Steppe-desert
  - Mountains

- Focus on feedbacks that make the projection of the future changes uncertain
  - Biogeochemical feedbacks
  - Biogeophysical feedbacks
  - Human activity

- NEESPI Research Priorities:
  (a) the processes that directly feed back to the global Earth system and
  (b) the processes of major societal importance
NEESPI research priorities

• Environmental processes that directly feed back to the global Earth system and
• Environmental processes of major societal importance
Natural changes are accompanied by the changes caused by human activity...

For example: More than 90% of steppe and forest-steppe zones in Northern Eurasia is currently cropland (orange areas in the map)
... some of these activities lead to ecological disasters. For example, most of the Aral Sea will disappear in the next ten years.
Northern Eurasia Earth Science Partnership Initiative

FOR MORE INFORMATION SEE THE NEESPI WEB SITE: http://neespi.org

Side Note: “NEESPI” is pronounced approximately like the Russian phrase for “Don’t sleep “
“Don’t sleep “ in dry land regions of Northern Eurasia

• The NEESPI reaction is: **Regional NEESPI Focus Research Center for Dry Land Processes Studies**
  – Recommendation of the NEESPI Science Advisory Panel (Feb. 2006)
  – **The Institute of Geographic Science and Natural Resources Research of Chinese Academy of Sciences** came with a framework of the Regional FRC organization (spring 2006)
  – Preliminary Organizational Workshop (Beijing, June 2006)
  – Full Size Proposal to NEESPI, Formation of the FRC SSC, its first Meeting, and ... here we are.