

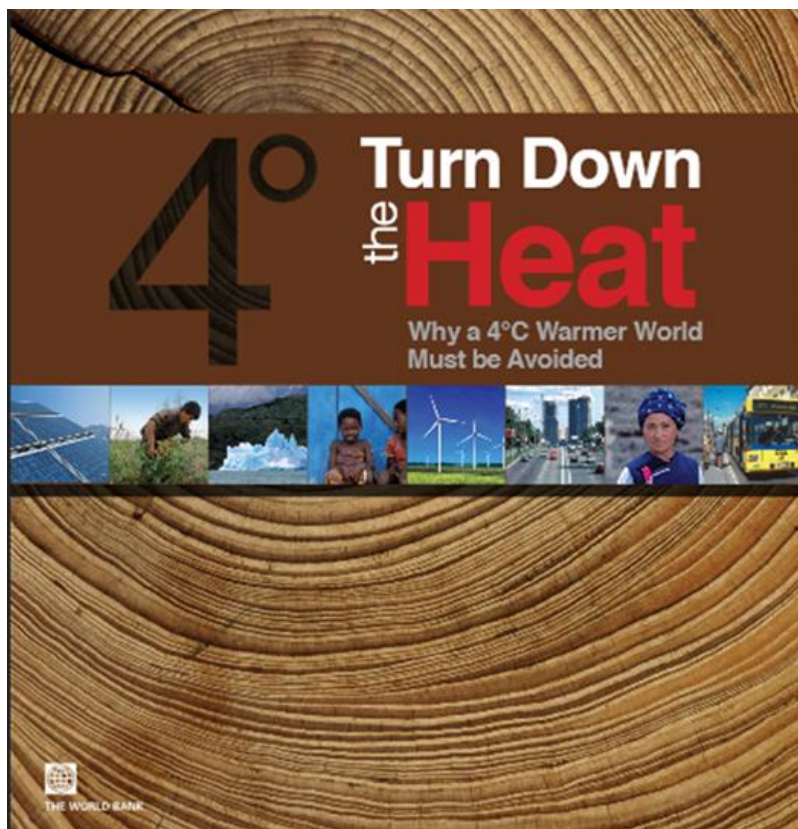


Turn Down the Heat for Central Asia: **Developing key messages**

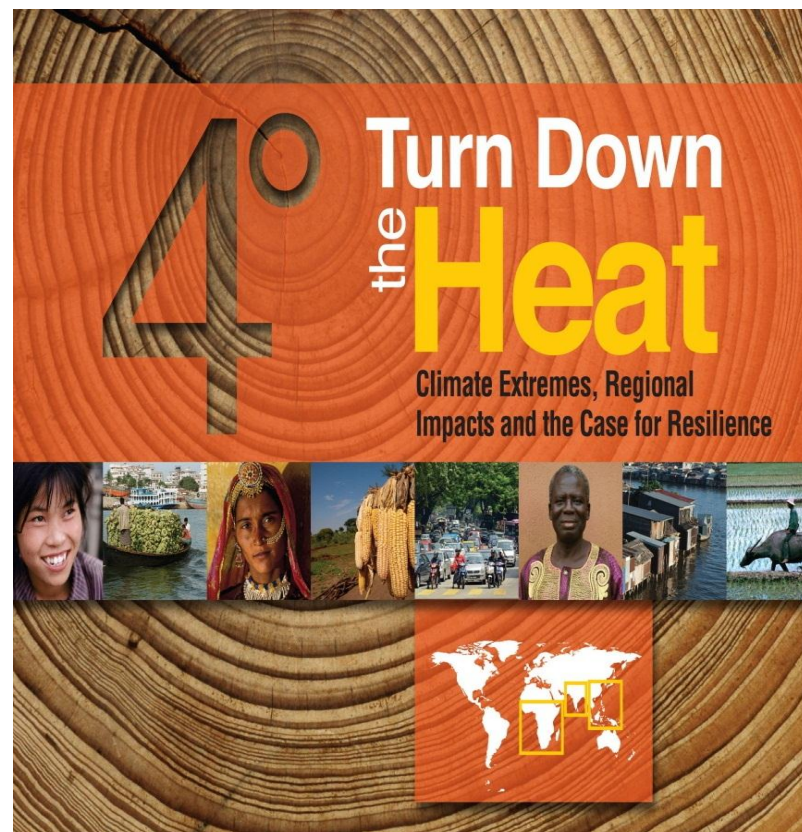
May 2014



A fundamental threat to development in our lifetime



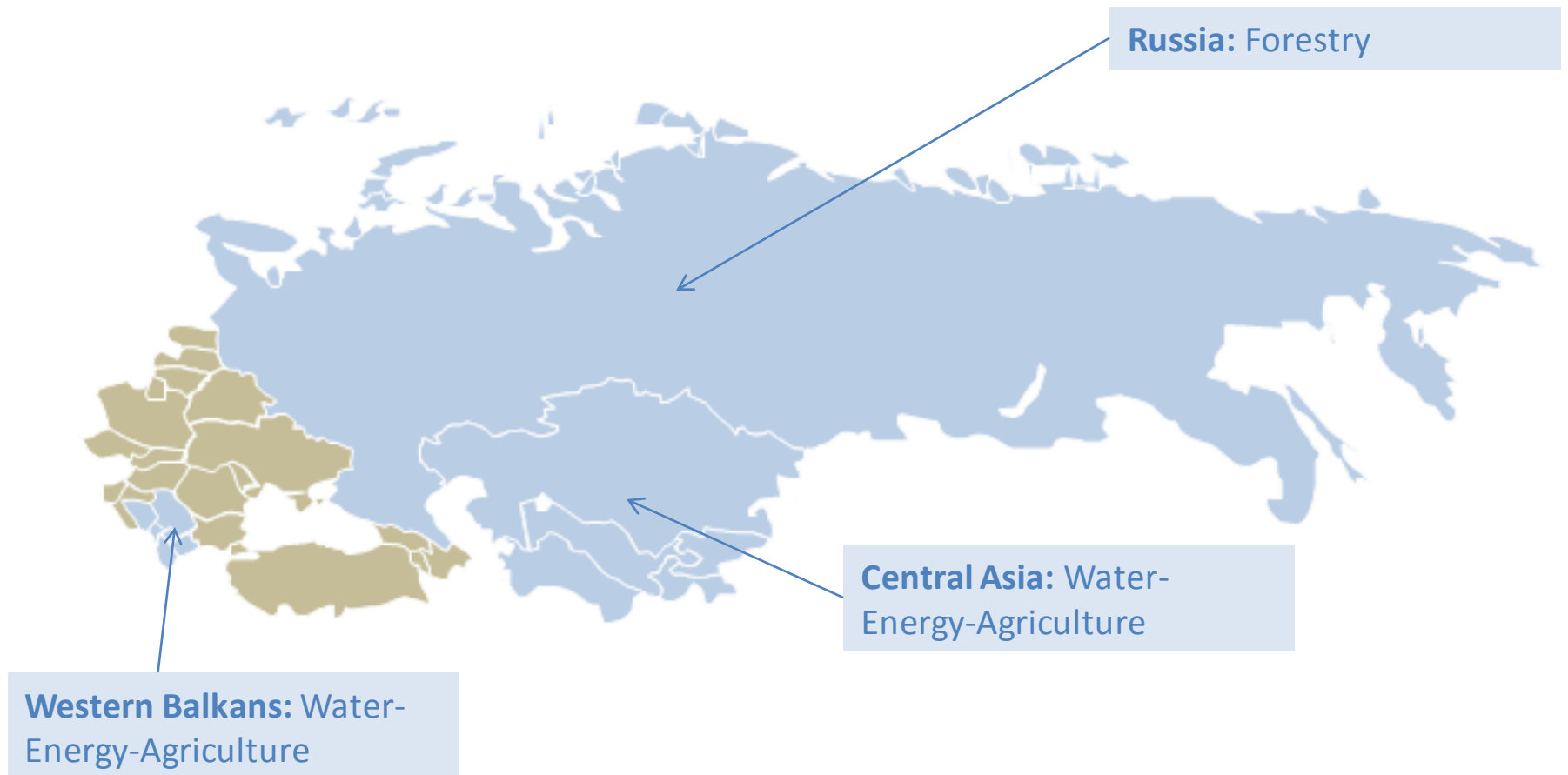
Launched November 2012



Launched June 2013

Three sub-regions, different sectoral nexus

Consistent storyline to catalyze policy and operational dialogue



Central Asia: Already vulnerable to climate change

Glacier Melt

- 10-20% of runoff in major regional rivers
- **TJ**: 20% of glaciers have retreated; small glaciers may disappear over the next 30-40 years
- **KG**: sharp decline in the past 50 years; volume could decrease at least by a factor of 2.5



Increase in Drought Conditions

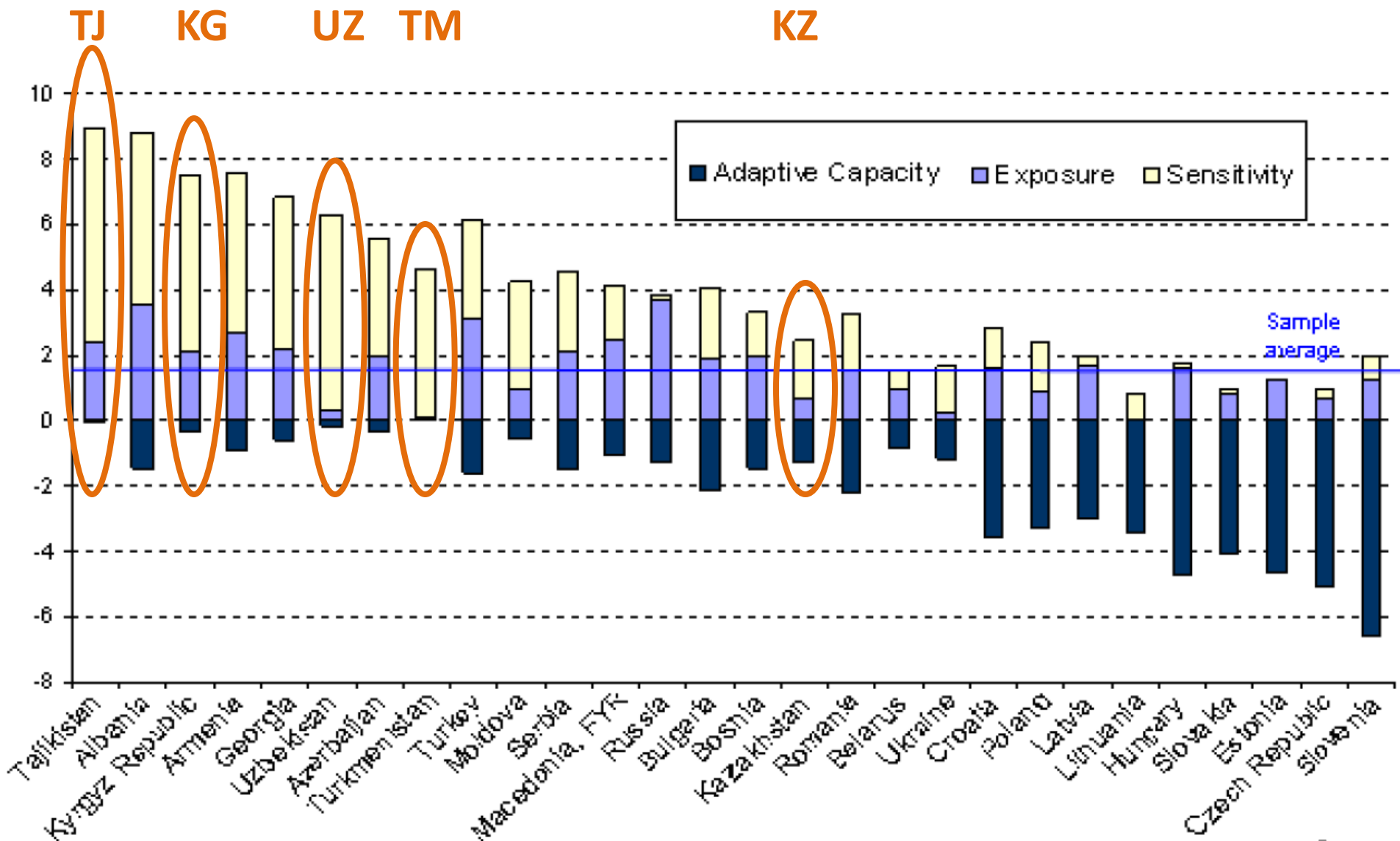
- **UZ**: 90% of water imported from other countries today; 0.8% GDP losses for agriculture during 2000 drought
- **KZ**: sharp fluctuations in wheat production (with 2008, 10 and 12 droughts), causing concerns for regional food security

More Floods and Mudflows

- **TJ, KG**: Significant damages from Amu Daria floods (2005)
- **KZ, UZ**: Significant damages from Syr Daria floods (2005)



Central Asia: Among the most vulnerable to climate change

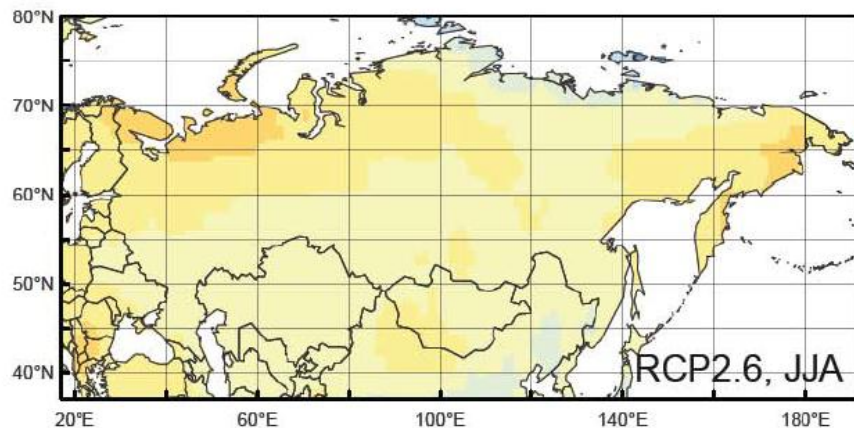


Socio-economic and institutional drivers of climate vulnerability

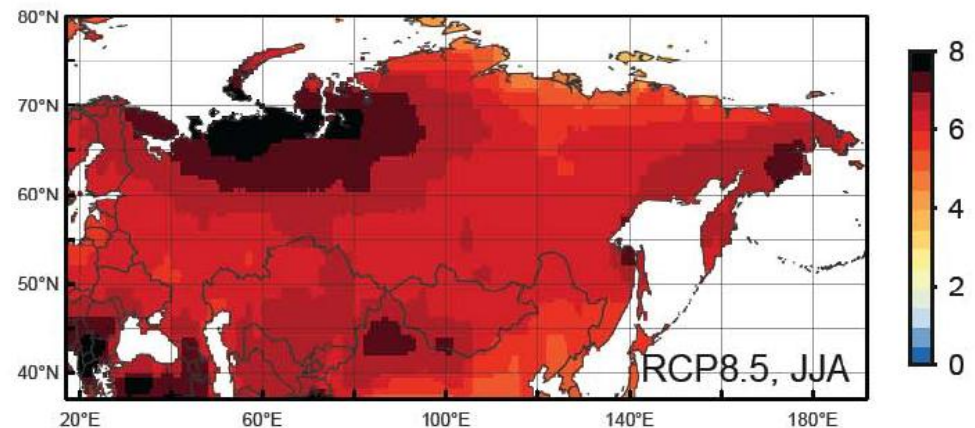
- **Significant reliance on natural base**
 - Agriculture: a main provider of jobs (30 to 60% of labor force) and the top consumer of water (75 to 100% of cropland irrigated, except KZ)
 - Power: Hydropower more than 90% of production in KG and TJ
- **Inefficient infrastructure and unsustainable land and water management**
 - Energy: losses in power (9-20% of electricity and heat supply); inefficient use (3 countries in the top-6 least efficient countries in ECA)
 - Agriculture: insufficient maintenance of irrigation and drainage systems; significant land degradation
 - Water: low water productivity (4 countries in the top-5 least productive countries in ECA, below $\$0.5 \text{ m}^{-3}$)
- **Large rural, and poor, populations**
 - Large rural populations in Central Asia: 60% on average, ranging 46% to 73%
 - Poorest are mostly rural: 60 to 75% of the “Bottom 40%” are rural
- **Institutional response not to the scale of the challenge**
 - Capacity to prioritize, design and implement cross-sectoral (and cross-country) policy and programs could be strengthened

Climate change: warmer than global average

Boreal Summer (JJA) change 2071-99 vs. 1951-80



2°C world

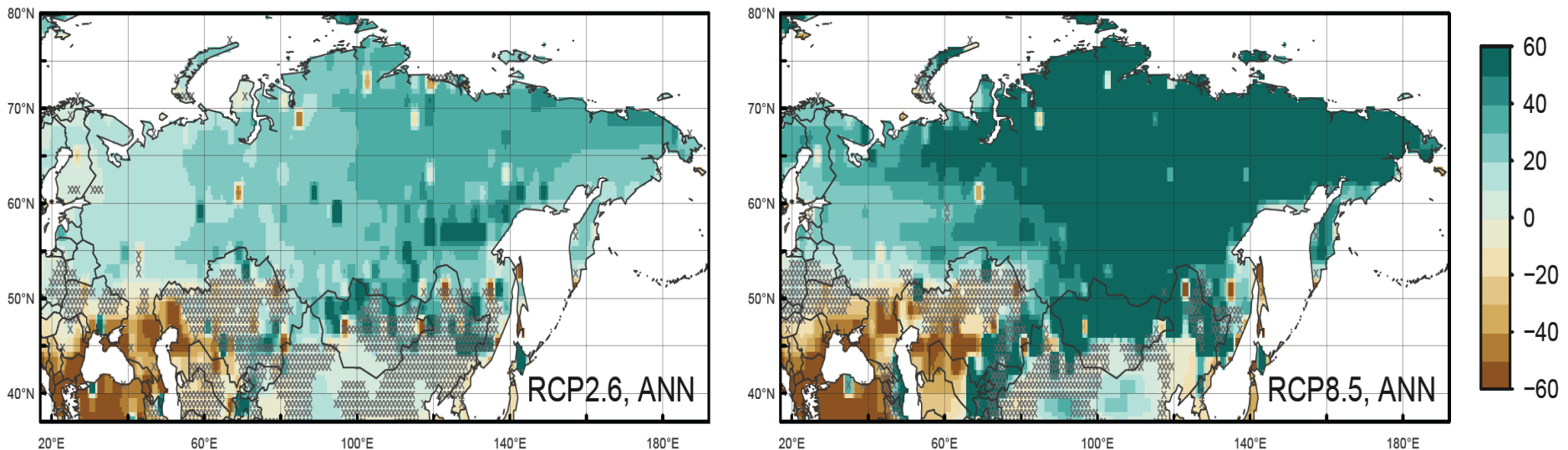


4°C world

In a 4°C world, 60-80% of summer months will be “unusually hot” and 20-40% “exceptionally hot”

Climate change: aridity

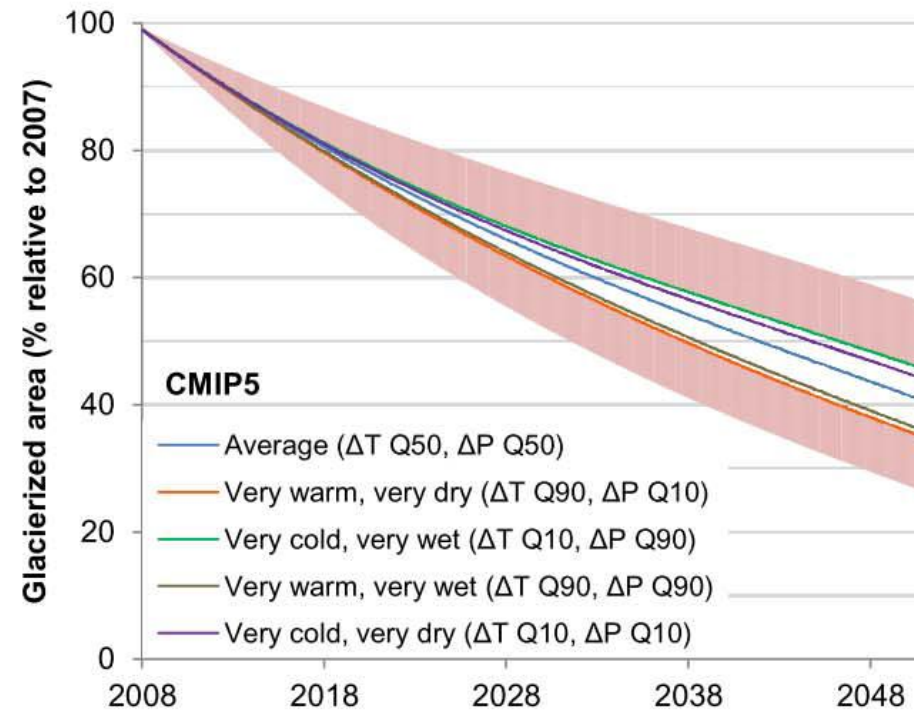
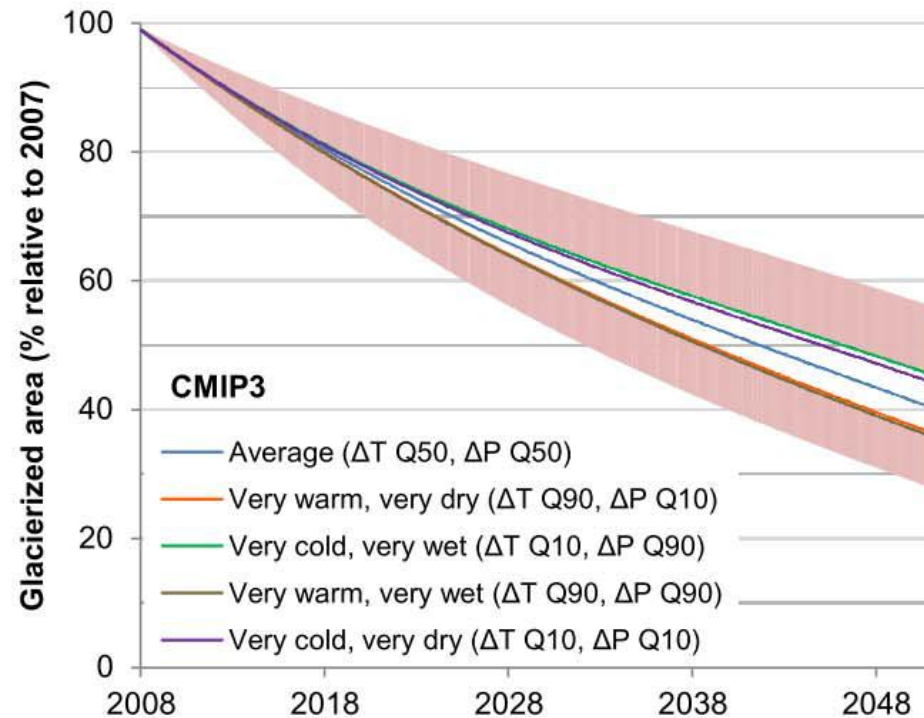
Percentage change in the aridity index, 2071-99 vs. 1951-80



The **Kyrgyz Republic**, **Tajikistan** and parts of **Uzbekistan** emerge as warming hot spots and drought-prone areas.

Climate change: increased variability and instability for water resources

Change in glacier area in Amu and Syr Darya basins over 2008-50



The rising costs of climate change in Central Asia

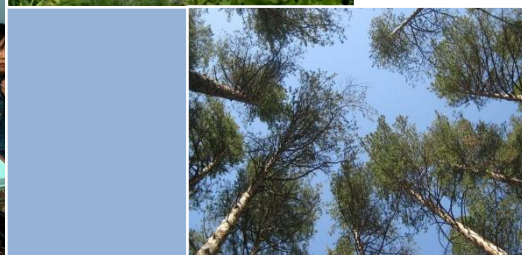
Health: Higher malnutrition rates and morbidity/mortality from extremes & water-borne diseases



Transport: Impacts on roads, railways and pipelines from extreme weather events and permafrost thawing



Agriculture: Economic losses, increased poverty rates, and impacts on food security



Forest & Pasture Management: Land degradation & reduced output



Energy: Impacts on demand, supply, infrastructure, and economics of sector

Towards climate-smart regional cooperation?

- **Climate-smart development can reduce vulnerability**
 - Food security: water management, modernization (not expansion) of irrigation, liberalization of agriculture sector
 - Energy security: rehabilitation of hydropower plants and thermal generation, loss reduction in transmission and distribution, demand side efficiency measures, supply diversification (e.g., renewables), regional trade
 - Weather-related disasters: continued modernization of hydromet services for early warning, weather forecasting, and climate change assessments
- **Regional cooperation can enhance regional resilience**
 - Economy of scale: shared research and knowledge efforts (e.g., new crop varieties, climate-related data)
 - Experience sharing: replication and scaling-up across countries of successful pilots
 - Complementarity: regional power pool, agriculture trade

=> Institutional strengthening for cross-sectoral and cross-country climate-smart planning