

Climate Change in Central Asia

CAREC as a Sub-regional Node (SRN) of APAN in Central Asia

Climate Change and Sustainable Energy program
Regional Environmental Center for Central Asia

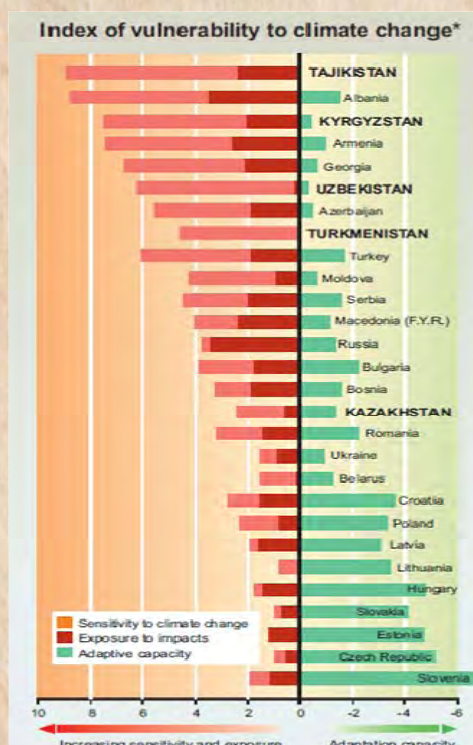


CAREC

- Promotion of multi-sectoral cooperation in addressing environmental problems in Central Asia at the local, national and regional levels.
- Government and civil society representatives
- Head office in Almaty, with country offices in Kyrgyzstan, Tajikistan and Uzbekistan
- Four main programs:
 - climate change
 - water resources management
 - environmental education
 - awareness raising



Climate Change and Central Asia



Source: World Bank (2009) Adapting to Climate Change in Europe and Central Asia



Water resources

	Total water supply to the main rivers (km3/year)	Total water withdrawal (km3/year)	Ratio
Kazakhstan*	28	33	85%
Kyrgyzstan	47	11	424%
Tajikistan	65	12	543%
Turkmenistan	3	25	12%
Uzbekistan	9	60	15%

*Southern part of Kazakhstan, Syrdarya river basin

Source: Compilation of information from AQUASTAT database and World Bank (2009)

- Skewed distribution of water resources
- Competing needs (agriculture-hydropower)



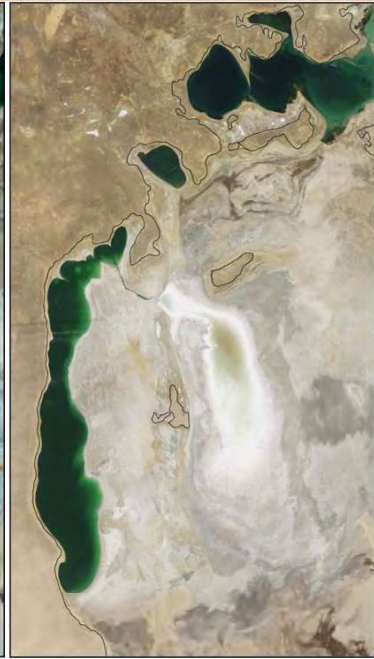
Shrinking Aral Sea



July – September, 1989



August 12, 2003



August 16, 2009

Taken from <http://geoserver.isciences.com>

10 years
carec
of Expertise for a Better Environment
The Regional Environmental Centre for Central Asia

Main climate change impacts on water resources in the region

Increased temperature – glaciers melting
Changes in precipitation



Reduced river flows (by 20% in 50 years)
Change in hydrological regime

Source: National communication reports under UNFCCC

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Retreat of Fedchenko glacier from 1933 – 2006



Photo by V. Novikov

Agriculture

- Temperature increase and decrease in rainfall and surface water in spring, summer, fall, with droughts



- Major stress on water resources for irrigation;
- Marginal grasslands at risk for aridization, desertification.



- Decline in cereal and cotton yield from water shortage from spring to fall, and from thermal stress;
- Greater water demand for rice and cotton production with higher temperatures;
- Widespread crop failures during droughts.
- Heat stress reduces milk production.



Threats to food security

Natural Disasters

changes in precipitation, melting of glaciers

+

change in land use



Increased incidence and magnitude of:

- mudflows
- avalanches
- floods
- droughts

Extreme temperature events

Source: National communication reports under UNFCCC

Number of people in Tajikistan affected by natural disasters (Top 10 Natural Disasters for the period 1900 to 2011)

Disaster	year	No Total Affected
Flood	1992	63500
Mass movement wet	1993	75357
Flood	1996	180000
Epidemic	1997	15618
Flood	1998	40974
Drought	2000	3000000
Flood	2004	400000
Flood	2007	17184
Extreme temperature	2008	2000000
Drought	2008	800000

Source: EM-DAT the International Disaster Database

Population (2010) – 6 878 000 people

Economic damage costs from natural disasters in Tajikistan (Top 10 Natural Disasters for the period 1900 to 2011)

Disaster	Year	Damage (US\$)
Flood	1992	300 000 000
Mass movement wet	1992	24 100 000
Mass movement wet	1993	149 000 000
Flood	1998	66 000 000
Drought	2000	57 000 000
Mass movement wet	2003	41 000 000
Flood	2005	50 000 000
Extreme temperature	2008	840 000 000
Flood	2010	204 000 000

Source: EM-DAT the International Disaster Database

GDP (2010) – 5 640 000 000 US\$



Main policy and institutional gaps

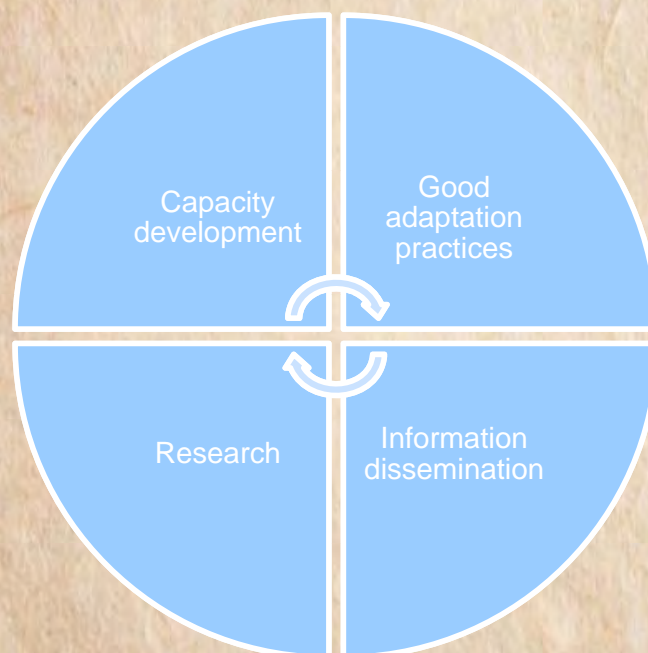
- Absence of core adaptation strategies and programs;
- Climate change risks not well reflected in sectoral and territorial development plans;
- Vulnerability and quantitative assessments with higher resolution and sectoral scale are needed;
- Foreign aid efficiency and donors coordination

CAREC (2010) Gap analysis on adaptation to climate change in Central Asia



CAREC as Sub-Regional Node of APAN for Central Asia

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Capacity development

- Trainings on climate change adaptation tools:
 - Payment of ecosystem services
 - Integrated water resource management
 - Local environmental action plans

Good adaptation practices

- Inventory of current projects in climate change adaptation

Research

- Gap analysis on adaptation to climate change in Central Asia;
- Report on current trend of donor activities in Central Asia.

Information dissemination

- Provide input into the Climate change adaptation portal
- Information dissemination through CAREC web side
- Sub-regional and national level donor coordination meetings



Activities implemented in 2011

- Gap analysis on adaptation to climate change in Central Asia;
- Good adaptation practices report;
- Side event at MCED-6;
- Report on current trend of donor activities on climate change adaptation in Central Asia

Way forward

- Launch of Central Asia Adaptation web-platform and database
- National and sub-regional level donors meeting:
 - Inventory of adaptation related initiatives
 - Identification of overlaps or gaps
 - Coordination and collaboration



Thank you for attention!

Climate Change and Sustainable Energy Program
The Regional Environmental Center for Central Asia
(CAREC)

Orbita-1, 40, 050043, Almaty, Kazakhstan
Tel.: + 7 727 229 26 19, 229 66 46, 278 50 22 |
Fax: + 7 727 270 53 37

e-mail: aumirbekov@carec.kz

website: www.carecnet.org

