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## Central Asia regional meeting

# Climate change impacts, adaptation and development in mountain regions

Dushanbe, Tajikistan

Ismaili Centre, 9 -11 November 2011

## Background

**Climate change is severely affecting mountain ecosystems**, impacting people's lives in high-altitude mountain regions (highstream) as well as in cities and environments (downstream populations) dependent on mountain goods and services.

**Effective adaptation strategies are required in response to climate change impacts in mountain regions.** In order to better integrate scientific evidence and mountain people's experience into international discussions, experts from Azerbaijan, Iran, Kyrgyzstan, Mongolia and Tajikistan met at the Ismaili Centre in Dushanbe, Tajikistan, from 9 to 11 November 2011. Organized by the Mountain Partnership Secretariat and the University of Central Asia in collaboration with the Government of Tajikistan, this meeting was held within the framework of the World Bank's Development Grant Facility (DGF) on climate change impacts, adaptation and development in mountain regions.<sup>1</sup>

## Issues of regional importance and recommended actions

The meeting participants identified a number of priority issues which are of concern for, or interest to, Central Asia and thus require urgent attention at various levels, including in international ongoing processes. These processes include the forthcoming UNFCCC COP17 to be held in Durban from 28 November to 9 December 2011 as well as UNCSD Rio+20 to be held from 4 to 6 June 2012.

<sup>1</sup> The meeting in Central Asia follows the one held in Latin America at the end of October (26-28 October 2011, Chile). A third meeting will be held in Africa (16-18 November 2011, Uganda)



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- **Branding:** There is an overarching need to define and better communicate why Central Asian mountains are of *global* importance. Also there is a need to emphasize the strong interconnectedness linking highlands to lowlands, namely, high altitude mountain people and environments to lowland populations.

#### **Actions:**

**Develop** a brand concept for mountains, i.e. one comparable to the well known "the Amazon rain forest is the lungs of the earth". Here are some unique characteristics of mountains for consideration: "Natural water reservoirs", "Clear indicators of climate change", "Biodiversity hotspots". **Consider conveying** the intertwined nature of highstream-downstream interactions by using the concept of "H2O", i.e. "Highlands to Oceans".

- **Advocacy for mountain countries:** the voice of mountain people often fails to get across in national and international policymaking debates. This makes it difficult for negotiators to ensure that mountains stand tall on the international agenda. In this context, the Mountain Partnership plays a key role encouraging members to "act as one".

#### **Actions:**

The group of national negotiators **should be composed of** competent people – specialists and experts in the field of sustainable management of natural resources who are well aware of the problems of mountain areas. There are already several groups of negotiators from developing countries, and these **should be used as the basis for** the creation of a single group comprising representatives of each group and thus representing the problems and needs of the various countries. **Continue strengthening** capacity of national negotiators by providing appropriate training. **Consider fostering** action-based, multi-stakeholder partnerships working at the highest international level to ensure that mountain issues are adequately included in the negotiations. As an example, **identify** a range of opportunities to draw attention to mountain issues in a collective way (e.g. International Mountain Day as one example). **Do not restrict** work to a one-time workshop but ensure continuity through networking.



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**Transfer** messages on mountain issues to the various international processes and **take advantage** of the networking opportunities offered by the Mountain Partnership. **Reduce** the vulnerability of mountain people and environments by applying to donors for specific project funding.

- **Renewable energy:** from hydropower to wind, solar, geothermic or bioenergy, Central Asia holds very high potential for renewable energy generation. Projects in renewable energy based on biofuels or solar cells/panels are particularly attractive for investors. Clearly a sensitive issue, hydropower could substantially contribute to unlocking economic development. However it raises concerns on environmental risks.

#### **Actions:**

**Ensure** that renewable energy is better included under UNFCCC discussions. **Promote** construction of water reservoirs in addition to dams feeding hydropower plants, with the objective to better control water flows, taking into consideration the glacier melting forecasts in a warmer global climate regime. **Continue** addressing transnational impacts addressed in bilateral and regional negotiations. **Further develop** agreements with downstream countries and water flow regimes. **Evaluate** long term trends on water resources reduction affecting downstream countries. **Benefit** from already existing renewable energy centers and build on existing capacity, while introducing new technologies and giving priority to local initiatives.

- **Sustainable use and management of water resources:** integrated water resource management is a top priority, given the issue of glacier monitoring. Glacier melting provokes change in river water flows, resulting in less water storage capacity, which in turn affects agriculture and food and water security. Direct impacts include sedimentation, fauna (fish) migration and pollution (mining, waste, etc.). In the absence of accurate, reliable and credible information on glacier melting, planning is very ineffective.

#### **Actions:**

**Improve** monitoring of glaciers and snow cover in mountainous ecosystems at three different levels: institutional, legal framework and information. On the



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institutional level, **consider establishing** Basin Councils involving all stakeholders (water, environment, hydro energy, local governance and communities, NGOs, women's councils, etc.), within the framework of the Integrated River Basin Management (IRBM). On the legislative level, **promote** laws and regulations supporting the work of the Basin Council (work procedures, access to information, introducing fees for ecosystem services). On the information level, **make available** data on melting of glaciers, the state of water resources (in terms of water security) and their monitoring ,seasonal, annual and long-term forecasts with special attention to floods and flash floods and droughts; public awareness. **Connect** to international processes: consider the Helsinki convention on transboundary water flows.<sup>2</sup>

- **Monitoring network, data, mega data:** databases are outdated and fail to comply with international requirements, making it difficult to perform medium and long term forecasts or to communicate at the international level.

#### **Actions:**

**Strengthen** monitoring networks for good planning of adaptation measures. **Utilize** modern tools and technologies to retrieve and present appropriate data. In particular, **ensure** having access to remote sensing data and technologies. **Strengthen** level of competency in modern information technology among staff. **Use** all existing networks and research institutions, including those dealing with migration issues - also as related to gender, which is a key issue in Central Asia.

- **Forest degradation:** overexploitation of forest resources in mountains results in soil erosion and reduced water storage capacity, and also contributes to deadly mudslides, avalanches and other disasters.

#### **Actions:**

**Consider implementing** a global programme for mountain forests to promote afforestation and other measures to increase forest cover. **Promote** scientific investigation and raise public awareness in order to increase an adequate, climate-change appropriate, variety of trees. **Make better use** of International

<sup>2</sup> [http://europa.eu/legislation\\_summaries/environment/water\\_protection\\_management/l28059\\_en.htm](http://europa.eu/legislation_summaries/environment/water_protection_management/l28059_en.htm)



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Mountain Day 2011 to focus on the changes in mountain ecosystems, connecting mountains to trees, considering that 2011 has been declared by the United Nations the International Year of Forests.

- **Financial mechanisms:** significant investments in infrastructure (hydropower, water reservoirs, distribution networks, green building, transport, etc.), strengthening capacity, research, networking and institution establishment require appropriate funding mechanisms in order to improve adaptation to climate change impacts.

#### **Actions:**

**Opt** for benefit-cost analysis to show that positive developments in mountains benefit lowlands and highlands alike. **Call** for the establishment of a fund for mountain region development. **Highlight** through the Mountain Partnership the worldwide importance of mountain goods and services at international negotiations.

- **Land use changes and land degradation:** recent structural changes in agriculture have resulted in suboptimal management of many grazing areas in Central Asian mountain regions. Overgrazing of common pastures near villages is a common scenario as small farmers can rarely afford to transport their herds to distant pastures. The latter, in turn, fall prey to bush encroachment, losing their pasture value.

#### **Actions:**

**Consider** the peculiarity of Central Asian mountain conditions in policy development, as distinct, for instance, from the Hindu Kush and the Himalayas (HKh). In degradation of mountain soil, countries in the Asian region lie at the heart of a continent and suffer from the impact of arid environments and deserts. Therefore the importance of water is a lot higher than in HKh. Accordingly, **select** drought-resistant resistant crops, water and soil conservation methods. These issues should be addressed within the context of the UN Convention to Combat Desertification. **Improve** prevention activities related to pasture and land degradation. **Encourage** a more integrated approach to natural resource use by means of inexpensive and accessible conservation technologies and techniques,



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including sustainable pasture management. **Promote and support** the establishment of local institutions responsible for this.

- **Risk and natural hazards/disasters:** Central Asia and its mountain regions in particular are prone to natural hazards such as floods, landslides, mudslides, avalanches; glacial lake outburst floods (GLOF) as well as earthquakes. Long-term development efforts can often be destroyed within minutes, causing high death tolls and heavy material damage. Some countries have responded or are responding by establishing a specific Committee (Tajikistan) or Ministry (Kyrgyzstan) to deal with emergency situations. Risk avoidance is also related to land use and land degradation, forest management and water resource management.

#### **Actions:**

**Enhance** preparedness adaptation of the local population. **Increase** public awareness, conducting trainings on how a changing climate might affect human activities and the ecosystems on which societies have come to depend.

**Strengthen** the capacity of hydro meteorological diagnostics in presenting user-friendly information on high-impact weather and climate and on climatic changes. **Develop** policies on sustainable land resource management. **Promote** investment in reconstruction of infrastructures, improving riverbanks, bridges, water flows, retaining walls, etc. **Conduct** surveys to establish the impacts in agriculture or health, as a consequence of the incidence of diseases caused by climate change. **Reflect** these issues in international processes by means of the National Adaptation Plan of Action (NAPA), to be presented to the Mountain Partnership Secretariat as well as cofounders, for consideration.

**Dushanbe, 11 November 2011**

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