

**Conference Mountains and Climate Change,
December 11, 2012, National Academy of Sciences, Bishkek, Kyrgyzstan**

Summary Findings

**from the Conference on Food Security and Land Resources under a Changing Climate
– Issues of Adaptation**

November 30, 2012, Kyrgyz National Agrarian University

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On November 30, 2012, AUCA's Tian Shan Policy Center (TSPC) and Kyrgyz National Agrarian University (KNAU) named after K.I. Skryabin hosted the ***Conference Food Security and Land Resources under a Changing Climate – Issues of Adaptation***. The Conference took place at the newly refurbished Science Library at KNAU.

The goal of the Conference

The goal of the Conference was to bring together experts, academics, and international organizations to share their current research, and discuss new technology and practices being developed in other parts of the world, and which are now being piloted in Kyrgyzstan. These tools can help government and communities better understand and manage the climate risks and they can improve the potential for climate adaptation.

There are a number of activities being undertaken by government agencies, international and nongovernmental organizations, and academic researchers and institutes to study the challenges that Kyrgyz agricultural communities face due to climate change. However, much of the research is new. Activities have generally not been shared or coordinated to ensure maximum benefit for affected populations and businesses at risk. Most people engaged in farming and pastoral work remain unaware of and vulnerable to the erratic weather variability brought by climate change. They do not have all of the resources, tools, or support programs they need, that could help them to build resilience and manage the risks. In the long run, this will cause Kyrgyz communities much more suffering.

The Conference

Section 1. Food Security under Climate Change

The first section of the Conference allowed speakers to present information regarding the predicted climate change impacts in Kyrgyzstan and the loss of food security.

Climate impacts will likely manifest itself in reduced losses of arable land and irrigation water, an increase in precipitation during winter causing more floods, mudflows, or landslides, and drought in summer. The academic experts suggested that scientific evidence reveals that even if Kyrgyzstan may receive temporary benefits in some areas by increased temperatures, by 2050, it will see a decrease in water outflow by between 43% and 88%, particularly in the Naryn and Issyk Kul basins. If water saving technologies are not employed, we can expect a potential decrease of by 50% of irrigated land production. As land becomes infertile or goes out of production, food prices will increase, and Kyrgyzstan will be faced with more *food insecurity*.

Areas that need particular attention by the Kyrgyz Republic and Ministry of Agriculture, and which require more budget allowances are:

- Improve irrigated land to reduce losses in agricultural production; improve soils and field protection strategies.
- Correct poor grazing practices that lead to desertification of pasturelands.
- Introduce crop rotation, drought-resistant and pest-resistant crop varieties, and best practices in cropland management.
- Reduce salinization, often mobilized by over-irrigation or waterlogging.
- Use conjunctive use strategies – that is harness groundwater, together with surface waters to improve maximum water availability to farmers during summer.
- Increase research and data on Kyrgyz lands to monitor changes that use an interdisciplinary approach.

The group of experts agreed that Kyrgyzstan lacks sufficient climate change monitoring systems and approaches. It lacks sufficient coordination with other countries in the region

that share resources. Migrants leaving rural areas will continue to grow if productivity and economic development in the agricultural areas of Kyrgyzstan is not improved. This is where the majority of migrants from KR to Russia originate.

Section 2. Promoting Food Security through Climate Adaptation

In Section 2, experts from international agencies and universities considered various technologies and tools available to Kyrgyzstan in monitoring climate change risks, disaster impacts, and climate adaptation strategies.

These tools and approaches have evolved over the past decade from traditional disaster risk management frameworks --to those that better integrate society's vulnerability and take account of the population's poverty level, access to infrastructure and basic services. These new frameworks can help Kyrgyzstan evaluate how local communities are able to adapt to climate change, what they may need to be resilient to climate change, and, in which scenarios Kyrgyzstan may experience direct losses, that cannot be adapted to and which damage cannot be repaired. Some have been developed by the IPCC, in European countries, and in the United States. Land management assessment strategies and Climate risk management tools are now just being explored by experts of the United Nations University, UN Development Program, World Food Program and other agencies in pilot projects here in Kyrgyzstan.

There is a need to improve our scientific collaboration and documentation of lessons from the many projects that have operated in agricultural regions in Kyrgyzstan. Experts agreed that we have significant 'data deficits' for advising government policy in KR. The community level projects can help the ministries better develop a roadmap for identifying where the most vulnerable communities to climate change are in the country, and helping to build future development in rural areas. Projects have been undertaken or will be ongoing in many Mountain regions, including **Suusamyр Valley, and SLM projects have been tested in Joloshu, Lenin, Kashka-suu, Alaiku among other sites.** In Suusamyр region, for example, new monitoring reveals that precipitation has decreased year after year in the past decade for a total reduction of 15.7 mm, and there is a deficit in fodder for

animal husbandry by 30-40% in winter. WFP has found in its research that Jalal'Abad suffers the highest food insecurity (48%), followed by Osh (38%), followed by Naryn and Issyk-Kul (over 20%). Household remittances from migration may be providing the major survival of some families, while those families who must eat from the land may be most at risk. Climate change is going to increase this suffering. More case studies are warranted to better understand the climate risks.

Section 3. Climate change impact on sustainable development of agriculture

This led to discussion of the third section on how to build sustainable agriculture in Kyrgyzstan. A key concern among experts was the widespread problem of animal disease. Scientists have identified that climate change will bring more pestilence and new diseases to rural communities. Academic experts in Kyrgyzstan noted that the agencies here face numerous problems in monitoring and controlling diseases, such as anthrax which affects animals now in almost every province of Kyrgyzstan. Small pox in sheep has been a similar problem. Episodic veterinary laboratories are needed. Crops are also threatened—and researchers noted that locusts and beetles have been a particularly significant problem in the region.

Economists urged that farmers need help in other areas, such as early warning systems for weather conditions. A system using cell phones as in other counties could reduce risks to agriculture. Farmers are seeking investment and training in agricultural marketing and business management. Both food safety and biosafety programs are needed to improve food security.

Section 4. Improving strategies for agricultural economics and climate resilience and food security.

In the 4th session, the results of field studies and climate risk assessments in Kyrgyzstan were discussed. A key finding voiced by many was that climate is a MAGNIFIER. It magnifies existing problems with desertification, droughts, poor land management, economic disparities and poverty. But field work, such as by the Aga Khan foundation and UN University and PALM Kyrgyz office also reveals that communities are already finding ways to adapt, such as switching from wheat to barley in Kara Kulja region, or using more efficient irrigation. This they are doing with small financial means because it

means their survival. By understanding local communities and providing them support in their development, Kyrgyz agencies can improve the resilience of rural villages. They can support farmer access to climate forecasting, access to credit and insurance, and to emergency response. The government can also encourage villages to cooperate in natural resource management, such as for protection of pastures. SLM technologies have also been piloted in various mountain regions and these lessons should be shared.

CONCLUSION

Participants agreed in the final discussion that Kyrgyzstan needs more research and development in agricultural regions. The lessons from community field studies and pilot projects are important to helping Kyrgyzstan design a roadmap to reduce climate change impacts. It is important to note a consistent theme in the findings was that unlike many countries, Kyrgyzstan has not developed a national adaptation program of action or strategic plan that has received the input of all stakeholders in the country. This is quite urgently needed.

The Participants adopted a Resolution with specific recommendations to the Government of Kyrgyzstan. These recommendations and all other Conference materials can be found at www.auca.kg/ru/tspc or in English at www.auca.kg/en/tspc.