MOUNTAIN EVO INSIGHTS

mountain EVO
environmental virtual observatories

espa ecosystem services for poverty alleviation · Imperial College London · University of Birmingham · Wageningen University & Research · CONDESAN · Society of Hydrologists and Meteorologists जल तथा मौसम विद् समाज · UCA University of Central Asia · Cornell University · Universiteit Antwerpen · Freie Universität Berlin · UNESCO United Nations Educational, Scientific and Cultural Organization

Smartphones for Sustainability: Building 'learning landscapes' in Kyrgyzstan

New technologies such as smartphones and semi-automatic weather stations may provide a boost to agricultural outputs and livelihoods by enhancing the availability of local data, but only if newly acquired or updated information is made readily accessible to the intended public in meaningful, accessible ways.

Environmental resources form the basis of a significant part of the rural economy in the Tianshan Mountains in Central Asia.

In recent years, much **resource governance** in Kyrgyzstan has been decentralized and has devolved to community 'Pasture Committees' (PCs), yet often these PCs are still perceived as non-local agencies and their decisions are not always respected or readily adopted.[1]

As part of a process of **empowering local people** and communities,[2] and in context of the recently established University of Central Asia[3] with the long-term educational opportunities it provides, a development-oriented approach to research is being advanced under the umbrella of UCA's 'Learning Landscapes' Initiative.[4]

Three technological or **digital innovations** were successfully introduced through the Mountain-EVO project in Naryn province, Kyrgyzstan:

Smartphones for participatory data collection (*Cybertracker*)

Increasing availability of data & co-production of knowledge about pasture conditions, natural hazards, etc.

Information boards (incl. digital screens)

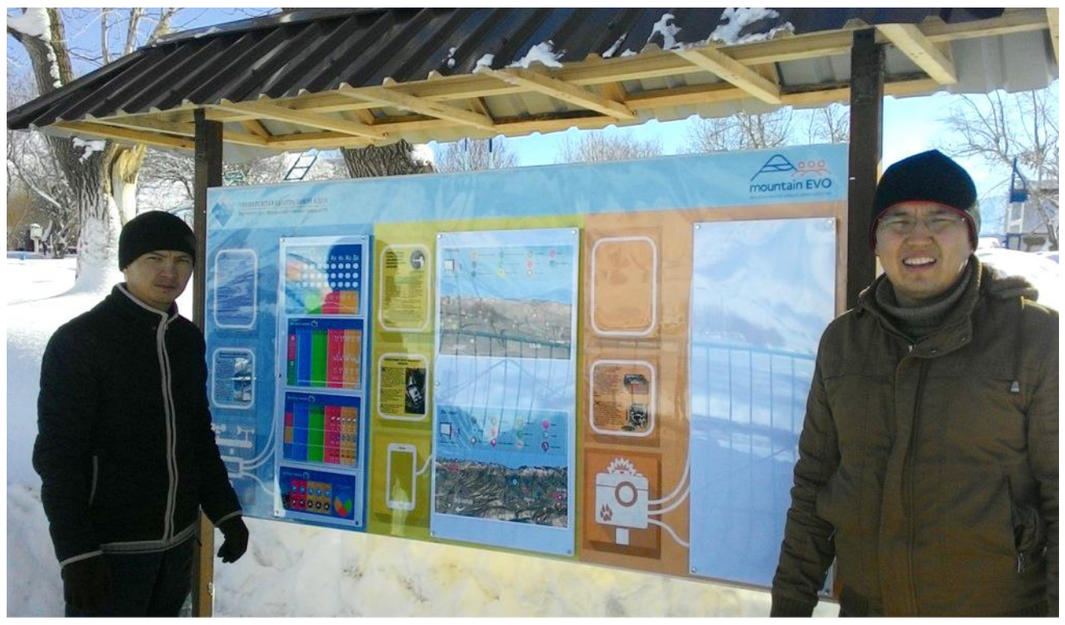
Displaying current information, synthesis of data collected by community partners, recent and current weather conditions

Weather stations (semi-automatic)

Tracking climatic conditions, enhancing predictive capacity in support of agricultural decision-making

By providing access to **new digital tools** that can enable more participatory monitoring of resources, the relevance of current locally 'owned' data for decision-making was demonstrated.

Although more study is still needed to determine the lasting impact, it is clear that several sectors of mountain agricultural communities in Naryn, Kyrgyzstan are keen to have greater involvement in the monitoring of environmental resources to better inform their **development decisions** in the future.



Information board in Eki-Naryn village, Kyrgyzstan, with recently updated data on local weather, pastures, wildlife, etc.

Resources monitored:

- Pasture conditions
- Indicator plant species
- Wildlife / snow leopard
- Under-utilized plants (mushrooms, herbal plants, etc.)
- Problems with infrastructure (e.g. roads), natural hazards
- Attractive places for tourism (e.g. mountain springs, petroglyphs)

Useful Tips for Practitioners

1. Inclusive processes in monitoring and decision-making can strengthen legitimacy and contribute to lasting outcomes
2. Use of new digital technologies must still be supported by genuine engagement with local communities and institutions
3. Targeted investments of time, finance and/or technologies that encourage local participation may enable the greatest synergies

'We became more attentive to what surrounds us. To our surprise, we found how much we missed! Springs, medicinal herbs, berries, weed plants on pastures (plants not edible by livestock) – all this information, stored and visualized on the phone, this could be very useful for many different people…'

Local herder, after beginning to use a project smartphone for data collection

References: **1**. Shigaeva, J., et al. (2016). Decentralizing governance of agropastoral systems in Kyrgyzstan: An assessment of recent pasture reforms. *Mountain Research and Development* 36(1):91-101.http://dx.doi.org/10.1659/MRD-JOURNAL-D-15-00023.1 **2**. Tengo, M., et al. (2017). Weaving knowledge systems in IPBES, CBD and beyond – lessons learned for sustainability. *Current Opinion in Environmental Sustainability* 26:17-25. http://doi.org/10.1016/j.cosust.2016.12.005 **3**. See http://ucentralasia.org/. **4**. Schmidt-Vogt, D., et al. (2016). Strengthening Mountain Societies in Central Asia in a Context of Multidimensional Change. *Mountain Research and Development* 36(3):380-383. http://dx.doi.org/10.1659/MRD-JOURNAL-D-16-00101.1

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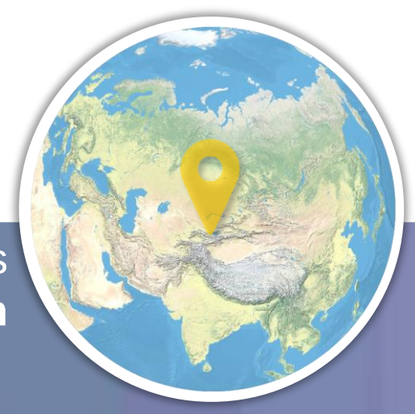

Central Tien Shan Mountains
Naryn, Kyrgyzstan