

Sustainable Mountain Development and ICT: *Furthering Cooperation between the Rocky Mountain States and Central Asia*

Baktybek ABDRIAEV, R.E. "Rusty" BUTLER, Alex STECKER
Utah Valley University
800 West University Parkway, Orem, Utah, United States

Asylbek AIDARALIEV
International University of Kyrgyzstan
255, Chuy Avenue, Bishkek, Kyrgyz Republic

Zamira DZHUSUPOVA
Center for Electronic Governance
United Nations University IIST
P.O. Box 3058, Macao, Macau SAR

ABSTRACT

This paper highlights the new opportunities presented by ICT to the mountainous developing nations with contribution from the communities of the Rocky Mountains of the United States to sustainable mountain development pursued by the United Nations. In this paper we analyze the current situation in mountain countries in Central Asia where geographical location constitutes main constraints for people in education, employment, participation in governance and business. We discuss the initiatives for sustainable mountain development by use of ICT-applications to promote values of democratic society and good governance through capacity building and networking between educators, legislators, and critical thinking among the people of Central Asia through independent e-media. The initial activities in deepening ties between the Rocky Mountain States of the Northern America and Central Asia demonstrate the increased interest among players to such type of cooperation for sustainable mountain development. In addition, we suggest further ways in facilitating networking for sustainable mountain development through use of ICT by joining efforts of all active players.

Keywords: ICT for Development, E-Government, Open Source, Sustainable Mountain Development, Mountainous Nations.

1. INTRODUCTION

It is well known today that ICTs give to everybody new opportunities for development. However, lack of access to them in mountainous regions creates obstacles to people for individual and social advancement as well. That causes challenges for them in education, employment, participation in governance and business.

Needless to say, there are many barriers to people in remote areas for access to ICT especially in mountain countries. Geographical location constitutes main constraints together with limited infrastructure, lack of necessary equipment, hardware, affordable software and low Internet penetration. Due to that,

citizens in general lack an understanding of the opportunities made available by ICT.

This paper highlights the new opportunities presented by ICT to the mountainous developing nations under the umbrella of the sustainable mountain development pursued by the United Nations with more contribution from the mountainous communities of the United States (U.S.) in networking and capacity building. The paper analyzes the current results and future potential of ICT for mountainous developing nations. The authors of this paper have participated in a number of activities in developing this new approach and further implementation steps.

The paper is organized as follows: starting with background information in Section 2, it discusses the importance of ICTs for deeper ties between mountainous nations in Section 3. Subsequently, Section 4 considers the ways and initiatives for cooperation between the Rocky Mountain States of the Northern America and Central Asia, in particular Kyrgyzstan through use of ICT applications for networking, capacity-building, and supporting independent electronic media outlets. Finally, the paper concludes with recommendations for future work in facilitating networking for sustainable mountain development through use of ICT by joining efforts of all active players.

2. BACKGROUND

Central Asian mountainous nations since independence developed ties with several states in the Rocky Mountains, such as Utah, Montana and Wyoming with an emphasis on Sustainable Mountain Development (SMD). They managed to convince several institutions from the Rocky Mountains and Utah Valley University (UVU) with the Utah-Russia Institute in particular to be pro-active in that area. As a first step, they joined the Mountain Partnership in 2006 and held different regional events in the states of the Rocky Mountains on the basis of existing worldwide programs of cooperation with a focus on Central Asia.

One of the active promoters of the idea of SMD is Central Asian nation Kyrgyzstan. It has a population of 5.2 million. Over 90% of the territory is covered by vast mountains and 65% of its population lives in mountainous areas [1]. This land-locked, mountainous country has a predominately rural population that is relatively poor. At the same time, the country has some advantages. Further integration of Central Asia and Kyrgyzstan in particular to the regional trade with a prospect of a large increase in land-based cargo could bring them benefits because of their location at the intersection of some of the largest markets in the world: China, India and Europe. Kyrgyzstan is committed more than its neighbours to democratic reform and has a vibrant civil society, including a vigorous NGO sector and a clear independent, although small, media sector [2]. National Strategy "ICT for Development of Kyrgyz Republic" with focus of effective use of ICT in the area of governance, economy and education was approved in 2002 and Council on ICT for Development was established under the President of Kyrgyz Republic [3]. More than 150 public access points established in the regions with the assistance of the international donor community with the aim to provide access to computer literacy courses and Internet services. Although the mountainous terrain of much of Kyrgyzstan makes network expansion countrywide a difficult task, but there is clearly a potential for growth [4].

Kyrgyzstan was one of the first countries who proposed in 1998 the initiative for international community to focus on the problems of the mountainous nations world-wide caused by such features of geography as high altitude, remoteness, harsh natural living conditions, etc. Due to that mountainous areas are experiencing high unemployment, poverty and becoming breeding ground for violence and terrorism. For example, data for 2006 say that of the 27 military conflicts around the world 25 took place in the mountainous areas [5].

Because of such initiative and further support to it from the global mountain communities, the United Nations designated 2002 as the "International Year of the Mountains (IYM)" [6] and held a First Global Mountain Summit in Bishkek as a sign of recognition of contribution of Kyrgyzstan to this initiative. [7].

Further, a new coordinating institution for global mountain activities, "Mountain Partnership" was created under the United Nations Food and Agriculture Organization in Rome [8] (www.mountainpartnership.org). There were the World Bank, the different U.N. institutions, developed countries like Switzerland, France, Germany, many mountainous countries in transition and NGOs among the major supporters of the "Mountain Partnership".

The U.S. supported the U.N. resolution celebrating IYM and various institutions and NGOs participated in the activities under the IYM agenda, including the Summit in Bishkek and some of them joined "Mountain partnership" [9].

However, the U.S. on a federal level was not actively involved in subsequent activities promoting the U.N. sponsored SMD initiative, as it was done by such European nations as Switzerland, Italy, France, etc. This could be explained by different priorities of the U.S. on a federal level and not enough level of awareness of those issues among the mountain constituencies nation-wide. Therefore, the initiative of Central Asia and the Rocky Mountains in joint cooperation under SMD

agenda was very timely and got support from the Mountain Partnership.

3. ICT FOR MOUNTAINIOUS DEVELOPING COUNTRIES

The Declaration of Principles, adopted on 12 December 2003 at the World Summit on the Information Society in Geneva [10], emphasized that the development of ICTs provide enormous opportunities for people in remote area who should be key actors in sustainable development.

Taking into account all challenges and opportunities for ICT use in mountainous developing countries like Kyrgyzstan it is evident, that ICT can provide more opportunities for people in remote areas by creating an environment, including through training, where they feel comfortable participating in community development activities and advocating for their needs and priorities of economic empowerment. In this regard it is important to develop ICT-based tools that address specific needs in mountains.

High illiteracy rates of citizens in mountain regions and lack of ICT training are two of the most serious barriers that prevent them from entering the information economy. Continuing gaps in education due to lack of mobility and socio-cultural practices that downplay the importance of education in remote regions, constitute enormous challenges for the mountain nations. New technologies allow the process and content of education to be adapted to learner preferences and priorities, thus opening up possibilities for designing and providing education in forms that are locally relevant. ICT literacy programmes, business planning courses, e-trainings access to market and trading information services and e-commerce initiatives can offer economic opportunities in salaried employment and entrepreneurship for rural people. As producers and distributors of goods and services they can capitalize on the potential of these technologies as knowledge and networking tools.

Organizations in mountainous area can gain access to news and pertinent information that allows them to conduct research and participate in global mountain initiatives, collect and share information on specific issues related to the life in the mountains.

It is well known now from the world-wide experience that ICT is a forceful tool to improve governance and strengthen democracy and citizen empowerment [11]. In recent years, e-governance has become a priority area of many governments resulted in the implementation of programmes that apply ICT in delivering public services and promoting transparency and accountability [12]. The main focus of e-governance shifts on using new technologies to strengthen public participation in the democratic processes and reduce the digital divide [13]. It can help foster transparent governance by enhancing interaction between government and citizens in the mountain regions, revitalizing civic institutions and public debate, promoting equity and equality, and empowering minorities. Best world experience shows that citizen centric governance involves meaningful participation of people particularly from remote area in all levels of decision-making and ensuring greater transparency and accountability in government [14].

In this regard, UNDP and UNU-IIST Center for Electronic Governance in response to Kyrgyz Government request provide advice in the field of ICT for Development () and e-governance. They help to the country's integration into the world information society, to foster use of ICT as a tool for achieving the Millennium Development Goals. Both UNDP and UNU-IIST Center for Electronic Governance promotes improvement of public services delivery and access to them by supporting development of e-public services and building human and institutional capacity in government institutions in the area of e-governance. UNDP assist the country in three key areas: national policy formation, capacity building in ICT4D and e-governance, and also practical implementation of ICT4Drelated projects. UNU-IIST Centee for Electronic Governance is contributing to capacity building activitiesin e-government.

In terms of practical ICT implementation, UNDP helped the government to establish a national computer network and create its own web presence through the governmental portal www.gov.kg. UNDP assisted the private sector with creation of the Association of Telecommunication Operators and with other donors the first Public Access Points (PAPs) have been established.

Among significant achievements of UNDP support in Kyrgyzstan in ICT4D area are establishing 12 pilot e-municipalities in rural villages including land management and local tax administration [15]. Public Information Centers (PIC) and awareness raising activities open up the opportunities for access to government information and public services. As a result citizens in those areas before going to the government agencies to receive any public service [16] can familiarize with rules and procedures for services from the government web sites. PICs provide trainings on computer literacy and e-trainings for different groups in the mountain regions on reasonable chargeable basis. The main priorities are small- and medium-business planning and land relations. People can communicate and share information and knowledge in the global networks through the worldwide Internet recourses.

However, it should be noted that there is a need to widen e-municipalities with Public Information Centres in remote areas. This will help to providea multitude of services like Internet, e-mail, computer literacy courses and e-trainings in all 527 Ayil Okmotu all over the country. They would offer an invaluable resource to enable people to use, produce, disseminate and share knowledge and information, and thereby to contribute to their communities' and countries' economic and social growth. Education and trainings in computer skills should be extended in the mountain regions. To make more affordable and accessible ICT facilities in rural area, Open Source technologies should be used more widely for knowledge sharing and distance learning.

4. COOPERATION BETWEEN THE ROCKY MOUNTAINS AND MOUNTAIN NATIONS OF CENTRAL ASIA

4.1. Approach for Cooperation

The partnership on the state level with U.N. related Mountain Partnership and Mountain Forum have the potential for deeper involvement of the U.S. mountains states in SMD globally and

in Central Asia in particular. Joint efforts of the most active actors in SMD from one side and ICT4D and e-Governance from the other side will facilitate SMD through ICT. Such approach allows mutually beneficial interaction between the two regions. One of the specific features of this approach for cooperation between two regions is engagement of private IT companies from U.S. to support joint projects and activities.

Human and institutional capacity building in mountain countries of Central Asia in the area of Democratic Governance, ICT4D, Networking and Knowledge Sharing with U.S. mountains statesand also research activities related to ICT enabled SMD are the key among joint activities. Exchange of the best practices and other knowledge resources related to mountain development can provide significant benefits to the partners from both sides. A number of exchange initiatives and ongoing projects discussed in this paper intend to facilitate networking and knowledge sharing processes between the mountain nations in U.S and Central Asia.

4.2. Networking

IUK as one of the hosts of the First Bishkek Global Mountain Summit in 2002 and an active promoter of SMD continues partnership with UVU in further expansion of networking between the key institutions in the Rocky Mountains and Central Asia interested in SMD.

International Conference "Women of the Mountains" highlighted the new approach and potential for networking in particular. Dedicated to the fifth anniversary of the IYM, it was hosted by UVU jointly with IUK and Kyrgyz National Centre for Development of Mountain Regions on March 7-10, 2007 in Orem, Utah. It was supported by the U.N., the World Bank, and others. Their representatives, the U.S. State Department officials, the Ambassadors from 5 mountainous nations to the U.S. and the U.N. took part at the Conference together with 110 officials, scholars and experts on women issues from 22 nations. [17].

The event has broken the old stereotype about the negative attitude to the U.N. in the rural part of the U.S. The Conference, which was held in a friendly and hospitable environment, was a success from all points of view. It has allowed for the first time in the U.S. to gather representatives of the majority of ts mountainous states under the U.N. agenda. Its final document titled "The Orem Declaration of Mountain Women" defined a strategy for mountain communities to deal with challenges for women's life in the mountains globally and helped the communities of North America to be deeper integrated with activities of the UN-related institution like the Mountain Partnership and the Mountain Forum [18]. It achieved also an important goal to assist mountainous nations in SMD. Currently UVU is working on preparations for the second Conference "Women of the Mountains", which is scheduled to be held in the fall of 2010 in Orem, Utah, economic realities permitting.

A permanent interactive web site of the Conference www.WomenoftheMountains.org was developed in order to disseminate information and stimulate dialogue between mountainous nations.

In this regard the Secretary General of the U.N. in his report to the General Assembly of the U.N. on SMD on August 9, 2009

mentioned among the major developments in this area that “the Rocky Mountains there established a regional network on sustainable mountain development” between mountain nations in Central Asia...“ [19].

Legislative exchanges represent an another priority area for networking and a way to promote democracy-building.

- At the beginning, the Speaker of the Kyrgyz Parliament Marat Sultanov visited Utah on February 3rd-5th, 2007 at the invitation of President John Valentine, Utah State Senate. During the visit Kyrgyz side took part at a conference call between legislators of the state of Utah, Montana, State Department and Speaker of the Kyrgyz Parliament, when all participants discussed the possibilities of further building networks and exchanges between legislators from both regions.
- In reciprocity, President John Valentine visited Bishkek on October, 1st 2007 together with Montana Senate Majority Leader Carroll Williams as a first bi-partisan legislative group from the Rocky Mountains ever to visit Central Asia. As a practical step in further networking and capacity building, President Valentine and Senator Carroll Williams discussed the idea of creation of the Parliamentary Center at Kyrgyz National University (KNU) with active use of ICT as a platform for dialogue and capacity building.
- Then, on February 2008 President John Valentine hosted in Utah a group of former members of the Parliament and opposition leaders of Kyrgyzstan led by Mr. Omurbek Tekebaev, Chairman of the “Ata-Meken” party, whom he invited during own visit to Kyrgyzstan. The visit further strengthened potential for networking of legislators between two regions.
- The same approach was used when the delegation of the members of the Tajik Parliament visited Utah in December 2007 and the following trip to Dushanbe of the group of the State Senators led by President John Valentine took place in June 2008. The goal of each visit was to exchange experiences in particular areas of SMD with further deepening of networking potential between two regions. Initiative was supported by the “Open World” program of the Library of Congress, which has sent several Central Asian delegations to Utah during 2008-2009.

Cultural Exchanges as essential tool in facilitating understanding and dialogue between both regions helped to build networking as well. UVU hosted in January 2008 a music group “Kut” from Kyrgyzstan as a part of their tour to the Rocky Mountains, arranged by VISTA 360 from Wyoming.

4.3. Knowledge Sharing and Capacity Building

This area of cooperation includes:

Educational Exchanges and Programs - UVU has ties with such educational institutions in the region as:

- IUK as a main partner in promoting the agenda of SMD between the two regions. In parallel with traditional programs of exchanges of students and faculty partners are developing a network of different NGOs and public institutions in Central Asia interested in cooperation with the Rocky Mountains. IUK expands currently its existing

project on distance education with the Contemporary Humanitarian Academy in Moscow with involvement of several universities in the region, including UVU. UVU works on applying for a Fulbright scholarship for its faculty member with experience in capacity building and knowledge sharing in mountainous areas of Mexico who will be hosted by IUK during 2010-2011.

- Kyrgyz-Turkish Manas University (KTMU), which cooperates with UVU on a number of projects, including a joint research on the traditions of the rule of law and good governance among the people of the region on the basis of the 11th century manuscript “Glory of Wisdom” written by the famous philosopher Yusuf Balasagun. During the Conference in August 24-28, 2009 in Bishkek, partners organized an on-line session of the paper presentation by UVU representatives, who took part at the Conference.
- In parallel with the networking efforts from the President of Utah State Senate, UVU is working with the KNU on establishing the independent Parliamentary Center in Bishkek as a research and analytical institution, with enabling knowledge sharing and capacity building across Central Asia. As part of the contribution to the Centers development, UVU will provide access to its e-library for students and faculty of KNU.
- Two Fulbright scholars on independent media from UVU and Brigham Young University (BYU) are already working at AUCA. UVU already has several students from Central Asia.

4.4. Independent E-Media Outlets

Project pursues two intertwined goals aimed at the audience in Central Asia: first, to promote best examples of SMD in both regions by using capacities of local media; second, to promote ideas of open societies and critical thinking in particular through presenting a diversity of views on current situation in the region and worldwide from different global sources of information.

Current regimes in the region have tightened controls over the flow of information and have put more restrictions on freedom of speech [20]. Due to that it has become even more important to expose Central Asians to the broadest possible diversity of opinions from the international mass media. The easiest and the most accessible way to do so is to publish articles translations in Russian and Kyrgyz languages about the region and global politics international English media outlets on different Central Asian websites and printed media.

A project is aimed at disseminating such type of publications by posting them to a Web-site www.Zpress.kg, of the independent news agency “Zamandash-press” created in 2007. This agency focuses on the problems of migrants from Kyrgyzstan in foreign countries.

The project was developed by the Fulbright scholar Dr. Kuban Taabaldiev at the University of Montana in Missoula (2007), who studied the experiences of local media outlets in the United States. In parallel, he was involved in SMD agenda and presented a paper on the media situation in Kyrgyzstan at the International Conference “Women of the Mountains” at UVU. Back in Kyrgyzstan, he helped to implement joint projects for UVU with IUK, KTMU, KNU, etc. As a director of a news

agency he also made the issues of the SMD and cooperation between two mountainous regions an additional priority to the activities of his agency. The Web-site has already posted under special banners information about ongoing projects between UVU and IUK, KTMU and others.

As a result, the agency translated and disseminated among more than 50 different Web-sites and regional media outlets in Russian and Kyrgyz languages 80-120 articles monthly during 2008-09. The materials produced have been published with further translation into Kyrgyz in local newspapers, such as "Uchur", «Achyk sayasat», «Zaman Kyrgyzstan», etc. More than 40 western media outlets were used as sources for the original articles, including the New York Times, Economist, Financial Times, etc. Special attention is paid to the translations of the articles from Rocky Mountain media outlets, dedicated to the SMD and issues of cooperation between two regions.

Currently the agency plans to expand its services by including media sources in languages different from English. On its part UVU plans to involve students and faculty of UVU in the project by providing additional translated materials to the ones done by the news agency in Kyrgyzstan. It also is developing a new web site for the agency.

4.5. Open Source Initiatives

An approach to breach the technology gap between mountain developed countries and the ones in developing world including Central Asia is the use of Open Source technologies, which offer a variety of applications that will greatly enhance business and government operations at a very reasonable cost [21]. It will be also very important and effective tool for enforcing women's potential in the countries of the region.

As one of the practical approaches to do so it has been proposed to establish a training program at one of the universities in Central Asia and in particular at the AUCA. The main goals are to train business and government leaders, women entrepreneurs and leaders of NGOs as well in the use of Open Source software applications. As envisioned, the program will eventually offer both undergraduate training for students at the regional university as well as seminars for government and business leaders throughout the region as follows:

1. Undergraduate training will consist of coursework that specifically teaches the skills needed to use a wide variety of open software applications. In addition to that, the applications will be incorporated into the teaching protocols of the faculty at the university itself. In this way, all students will become familiar with the applications and their uses in the organizations where they will be employed in the future.
2. Training seminars will be one to two week long taught at the university for business, government leaders, women entrepreneurs and leaders of NGOs from Central Asian countries. This training will familiarize attendees with current open source applications and give hands-on experience in their use.

It is anticipated that the program will start by focusing on the students of the university and leaders from around Kyrgyzstan in the first year. Once the program is well established, an effort will be made to promote the training throughout the region and

to bring both students and leaders from other neighboring mountainous countries to participate in an expanded training program. The size of the program will be determined by the funding that can be secured.

The selection of the applications to be taught is critical to the success of the program. The courses to be taught will need to be carefully developed to meet the needs of the mountainous region. At this moment UVU is discussing with representatives of the local universities in Central Asia, international financial institutions and several private ICT companies in the U.S. details of the joint activities under the umbrella of this project.

5. CONCLUSION AND FUTURE WORK

As a result of discussions in the previous sections we can conclude that ICTs open up new opportunities to the mountainous developing nations for SMD pursued by the United Nations. Due to high level support of key U.N. agencies in developing countries, particularly UNDP and UNU through its Center for Electronic Governance, ICT became a powerful tool for better governance, access to information and knowledge, human and organizational capacity building and hence, achievement of MDGs. The initial activities discussed in the paper demonstrate the increased interest among players to SMD. Furthermore ICTs enable mountainous communities of the U.S. in networking and knowledge sharing as well with further ability to participate in SMD worldwide.

In this paper we argue that ICTs provide huge possibilities for networking, sharing experience and expertise, training programs and independent e-media outlets through various ways and initiatives to promote critical thinking among the people of mountainous developing nations. We consider a new approach to SMD based on cooperation of mountain communities of the Rocky Mountains of Northern America with partners from Central Asia by engaging active research institutions and private IT companies.

Based on the findings of this research we can recommend for future work in the domain the following initiatives and activities:

- 1) Establishing close partnership and networking between the most active actors both in SMD and ICT4D, in particular UNU Center for Electronic Governance, Utah Valley University and such Universities in Central Asia as AUCA, IUK, KTMU, KNU for building human and institutional capacity in Central Asian region in the area of Democratic Governance, ICT4D, Networking and Knowledge Sharing and also for joint research related to SMD through ICT.
- 2) Further mobilizing private ICT companies from the Rocky Mountains to support joint research and development projects between UNU, UVU and Central Asian educational institutions and to foster effective use of Open Source technologies.
- 3) Further strengthening of the on-line Mountain Forum by creating regional Rocky Mountain network of all institutions and individuals interested in SMD and coordinating its activities jointly with the regional Central Asian mountain network.

4) As a continuation of deepening ties between Rocky Mountain States and Central Asian mountainous nations to organize a second International Conference “Women of the Mountains” with the special focus on gender issues and role of ICT in women empowerment.

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