



Environmental Security in Central Asia

One Bucket at a Time

Landlocked Central Asia is home to two major rivers, the Amu Darya and Syr Darya, as well as two inland seas, the Caspian and Aral. But water resources in the region are disputed. The Caspian Sea is heavily polluted and the Aral Sea is on the verge of extinction. Massive irrigation systems were developed in the past to sustain water-intensive crops such as cotton, wheat and rice in the steppes and deserts of Kazakhstan, Uzbekistan and Turkmenistan. These systems have caused Central Asia's largest environmental disaster - the drying up of Aral Sea – and they have the potential to further threaten the livelihoods of Central Asia's population.

Water has been a matter of contention between upstream and downstream countries, in particular between downstream Uzbekistan and the two upstream countries. Kyrgyzstan and Tajikistan. Water management problems are at the heart of regional political and economic tensions. But any successful effort to deal with environmental issues also faces multiple challenges at the national level, from technical deficiencies to lack of capacity and resources to lack of political will and economic incentives. The infrastructure inherited from the Soviet era is, in some cases, no longer viable, and in others, it requires heavy maintenance, which the weak and impoverished states are not able to afford.

As pressing a problem it is, water management is just one part of the wider environment-security nexus in Central Asia. The region is prone to earthquakes, mudflows and landslides. It has been severely affected by climate change and it still has hazardous Soviet nuclear waste that must be cleaned up. Considering Central Asia's lack of disaster preparedness, weak governance, insufficient resources and growing populations, the region seems especially vulnerable to extreme weather events.

A joke in Central Asia says that if every researcher who has assessed the regression of the Aral Sea in the last two decades had brought a bucket of water instead of writing an article, the problem would have been solved. And indeed, the amount of research has been overwhelming. But research on the problem has been poorly coordinated, and often, policy makers in the wider donor community have not consulted it. International donors have given substantial attention to environmental issues in general and to water management in particular, but so far, there have been few results. There are two main reasons for this failure to achieve significant changes: poor donor coordination and lack of responsiveness from Central Asian elites.

Donor coordination on problems that are largely regional by nature is difficult. Large donors are active in the re-

gion, such as the United Nations, international financial institutions such as the World Bank and the Asian Development Bank, the European Union and certain European countries such as Finland and Switzerland. But how can such a diverse group create a single set of priorities, let alone also involve large investors in infrastructure that has a direct impact on the environment, such as China and Russia? Severe disputes between the Central Asian countries further complicate effective donor coordination, because it means the countries are not positively engaged in finding solutions. Since coordination is most effective on a national level between donors that follow OECD-DAC guidelines, active stakeholders have increasingly chosen to focus on small community projects that make a direct difference - thus bringing along their bucket of water.

Meanwhile, the responsiveness of Central Asian states is weak and the policies they have adopted are short sighted. The rent-seeking elites have no interest in environmental hazards, while water management questions have become matters of international dispute. One of the most serious tensions involves Tajikistan and Uzbekistan, who disagree over Tajikistan's plans to build the enormous Rogun dam. The World Bank is caught up in the dispute, since it has to judge the feasibility of the dam, and so risks falling out with one or both of the parties. The most influential external actors. Russia, the EU. the U.S. and China, prefer to stay out of local squabbles over water resources. Donors can help to bring about improvements at the community level, even when local governmental support is low. But eventually, larger issues need to be addressed through locally grown regional cooperation – and there are, as yet, no signs that this is likely to happen.

This newsletter seeks to draw attention to the urgency of environmental problems in Central Asia. Just as development and human values are linked to security, so too are environmental matters. First up is an interview with Laura Rio, Senior Programme Manager at ENVS-EC, an initiative of six international organisations that is an active player in the field of environment and security in Central Asia and beyond. Next, Sébastien Peyrouse talks about Central Asia's lack of preparedness to face the region's frequent natural disasters. And finally, Marlène Laruelle examines water resources and agriculture in Central Asia. The newsletter concludes with a short update on recent EUCAM publications.

Editorial by By Jos Boonstra, EUCAM Head of programme and Nafisa Hasanova, EUCAM Associate



2 EUCAM Watch No. 13

Table of Contents

Editorial: One Bucket at a Time	1
EUCAM interviews ENVSEC	2
The Lack of Disaster Preparedness in Central Asia	3
Water in Central Asian Agriculture: No time to waste	4
EUCAM Publications	5

Interview

EUCAM interviews ENVSEC about their work in Central Asia

Laura Rio, Senior Programme Manager

1. What are some of the main challenges in ENVSEC's work?

The most challenging area has been capacity development. Despite ENVSEC's technical assessments of environmental threats and projects, the countries in the region are still building up their capacity to manage threats and linkages, and they require support from the international community. Another challenge has been measuring impacts on security, building capacity in data collection and improving the availability of information. This often involves dealing with sensitive issues at a very high political level. But it is within this context that the concept of environmental threats leading to security risks is most relevant and most needs to be addressed in Central Asia.

2. What is the link between environment and security in Central Asia?

There are several key environmental issues that threaten human security in the region. These include the growing demand for water and energy, along with the difficulties the countries face in agreeing on water allocation. The region must find solutions to deal with increased pollution, changes in hydrological regimes and the legacy of past industrial and agricultural practices. These challenges could lead to high security risks. There is a growing understanding that environmental degradation, inequitable access to natural resources and trans-boundary movement of hazardous materials can increase the probability of conflict, and thereby pose a risk to national and regional security, especially to human security. Environmental problems, such as resource scarcity stemming from diverse factors including over-exploitation and population growth, can act as threats to people's security. This has the potential to cause conflict both at community and national levels. However, the links between resource scarcity and conflict are not always clear and require greater study and research.

3. How can the hazards concerning radioactive waste maintenance be dealt with?

Radioactive waste threats require solutions that reduce the community's vulnerability. Vast amounts of radioactive waste from the Soviet era are distributed across waste sites in Central Asia, often in water catchment areas, jeopardising the health of the region's population and the environment. ENVSEC addresses

the urgent problems of the uranium legacy by supporting the development of long-term, joint regional cooperation projects that ensure the safety of radioactive waste tailings, for the wellbeing both of the environment and of current and future generations.

4. And how can climate change and natural disasters be addressed?

In Central Asia, climate change has moved from being a purely environmental and development issue to a problem of national and international security. Failures to adapt to climate change, such as decreased precipitation, glacial melting or heat waves, can lead to societal instability and may evolve and exacerbate conflicts or multiply threats. The increased likelihood of prolonged drought means that farming communities need techniques or crops that rely on lower water use. For example, increased vegetation around water courses prevents erosion and minimises the effects of floods.

Central Asia is a disaster-prone area, exposed to natural hazards such as floods, droughts, avalanches and rockslides. Even though impacts of natural disasters usually call for solidarity and cooperation, such events may strain relations between neighbouring states, especially if there is no understanding or common agreement on what constitutes adequate preventive measures. The need to prevent such events or mitigate their effects offers an opportunity for cooperation between the relevant authorities, and specifically between the ministries of emergency situations. By involving local authorities, disaster response organisations and the communities in the areas at risk, the benefits of cooperation can be further enhanced, particularly with regard to industrial sites or radioactive waste deposits with a high risk of trans-boundary pollution.

5. How do you see the challenges Central Asia faces in water management?

Central Asian countries are dealing with a complex web of power and water agreements, which have been passed on as a legacy of the Soviet era. The upstream countries, which are closer to the rivers' sources, have to ensure fair management of the resource for countries downstream. Typically, this is exchanged for energy, based on the old Soviet systems, but the arrangement has been in flux in recent years. Increased focus on energy independence has meant more interest in hydro-power, which raises concerns about the sustainability of water management. Some countries in the region are heavily dependent on thirsty crops such as cotton, while others want to expand their agricultural sectors. Resource scarcity is causing problems. Some regions may be unable to continue to produce their crops, leaving entire communities without livelihoods.

6. Is there enough coordination between external actors in support of improving water management?

It has been estimated that between 15 and 20 international organisations have provided assistance in water management since the early 1990s. Assessments of these projects have revealed that the potential for cooperation and dialogue is great, but more coordination is required. However, coordination is difficult, largely due to the complex upstream-downstream dynamics of water management. ENVSEC also tries to contribute to coordination in water management programming in relation to the activities implemented by the six ENVSEC individual partners. By doing so, we hope to offer a model of interagency cooperation.

7. What role could the EU or European countries play in fostering cooperation in the field of environment in the region?

The EU together with European countries such as Finland, which has been an active participant in water management initiatives, can play a positive role in fostering cooperation on environment and security through supporting capacity for cooperation and providing models of cooperation on specific areas, such as, for example, dam safety. The EU and member states need to support an enhanced understanding of climate change as a security challenge in the context of the wider Eastern European neighbourhood (Eastern Europe, South Caucasus and Central Asia). This can be achieved by building the capacity of policy makers and the local community to respond in an effective and timely manner to diverse climate change challenges.

ENVSEC - Transforming Risks into Cooperation

The Environment and Security Initiative (ENVSEC, www.envsec.org) is a partnership of six international organisations with specialised but complementary mandates and expertise: the Organisation for Security and Co-operation in Europe (OSCE), Regional Environment Centre for Central and Eastern Europe (REC), United Nations Development Programme (UNDP), United Nations Economic Commission for Europe (UNECE), United Nations Environment Programme (UNEP), and the North Atlantic Treaty Organisation (NATO) as an associated partner. ENVSEC works to provide an integrated response to environment and security challenges.

ENVSEC recognises that the best way to address environmental and security concerns is through prevention, international dialogue and neighbourly cooperation. The Initiative assists governments and communities in identifying common solutions and developing joint projects for achieving them. It facilitates dialogue and collaboration across borders among policy makers, environmental experts and civil society, working with national experts, ministries and national agencies, as well as with NGOs and research institutes.

The mission of ENVSEC is to contribute to the reduction of environment and security risks through strengthening cooperation among and within countries in four regions: Central Asia, Eastern Europe, Southern Caucasus and South-Eastern Europe.

The Initiative's on-the-ground experience and extensive portfolio of lessons learned are valuable assets. The ENVSEC work programme in Central Asia has made important achievements through the implementation of multi-country projects with environment-security related benefits. These projects include: In-depth assessment of environment and security linkages and impact in the Amu Darya River Basin; Capacity building for cooperation on dam safety in Central Asia; Strengthening coordination of project formulation and mobilisation of resources for sustainable radioactive waste management in Central Asia; and A comprehensive study on glacial melting in Central Asia.

Analysis

The Lack of Disaster Preparedness in Central Asia

Sébastien Peyrouse, EUCAM researcher

All the countries of Central Asia are, to varying degrees, at considerable risk of experiencing natural disasters, especially earthquakes, landslides and floods. Kyrgyzstan and Tajikistan, the most mountainous countries, are also at risk from avalanches

and mudslides. What capabilities do the Central Asian states have to deal with these types of threats? In contrast to Russia, where the Ministry of Emergency Situations, EMERCOM, is now fully modernising, the Central Asian organisations in charge of disaster readiness remain poorly prepared in theoretical, human and technical terms, and receive scant attention from the authorities.

Ministries of Emergency Situations (MChS, in the Russian abbreviation) exist in all the Central Asian countries, but international organisations and specialised NGOs consider them to be poorly prepared for managing risks. So, they have been encouraged to focus their actions on risk prevention, instead of on simple management. Central Asian institutions are fundamentally reactive and not preventive, and management aimed at future events does not form part of the working methods inherited from the Soviet regime. Kazakhstan is presently the only country to have committed to major long-term efforts, under its '2030 Strategic plan for the environment and natural resources'. The Kyrgyz government has been criticised several times for refusing to take the warnings of seismologists into account. For example, the government was warned about seismic movements in the Osh region two days before the earthquake of 1 January 2008, but it neither warned the population nor took measures to deal with a potential quake.

Local means and capabilities remain limited. Evacuating populations living in high-risk areas requires budgets that the weakest Central Asian states simply do not have. The capability of the governments to respond to an earthquake as bad as the one that occurred in Armenia in 1986 is lower today than it was during the Soviet period. With the exception of Kazakhstan, few plans or tools have been developed to respond to a major event, and financial resources remain inadequate. There is no concordance between the projected annual budget for risk management and the magnitude of potential economic losses caused by catastrophes; to cover costs, budgets should be about 100 to 200 times larger, but this level of increase is unlikely to take place. The funds set aside for natural catastrophes amount at most to about \$1,000 per disaster victim for Kazakhstan, and to some hundreds of dollars in the other states. As things currently stand, the vast majority of the population as well as the companies hit by such events would have to cope with any disaster using their own financial means.

Many experts think that there is a need to create individual insurance for such cataclysms, like the programme supported by the World Bank in Turkey. Currently, only 1 per cent of the Central Asian population is covered by disaster insurance, which tends to be expensive and to offer little compensation. The poorest members of the population cannot be insured, and even the middle classes refuse to invest in changeable and corrupt insurance companies. In addition, the few local insurance companies do not have the technical and human competencies required to mount adequate responses and reactions in cases of natural disaster.

The lack of regional cooperation palpably increases the risks. Some limited forms of regional cooperation have been set up, for example, between the Russian and Kazakh MChS, which cooperate in border areas. In October 2010, a memorandum was signed between the Ministries of Emergency Situations of Kazakhstan, Kyrgyzstan and Tajikistan for the creation of a Central Asian Centre for Risk Prevention and Resolution. The centre will be in charge of the UN development programme for 'strengthening risk prevention potential in Central Asia', which is financed

4 EUCAM Watch No. 13

by the EU. In the long term, it will help to establish cooperation between ministries, provide better evaluations of regional risks and participate in international risk management networks. International organisations have suggested to local governments that they should set up stand-by financing with the World Bank and the Asian Development Bank. This would give them immediate access to cash assets in disaster situations. But so far, the governments have been reluctant to finance risks that are only potential.

The Central Asian governments, even the most closed such as Turkmenistan, prefer to rely on national or international non-state programmes, often conducted by NGOs such as the Red Cross/Crescent. They also hope that the Shanghai Cooperation Organisation or the Eurasian Economic Community would provide financial assistance if a large-scale catastrophe were to occur. And the regimes rely on the institutions present in the region, such as UNDP, the Office of United Nations for the Coordination of Humanitarian Aid and UNICEF, as well as donors such as the Swiss Development Cooperation and Japan's International Cooperation Agency.

With the exception of Kazakhstan, which has started to look into the issue, the other Central Asian states mostly rely on international cooperation to improve their capabilities to react to and prevent natural catastrophes. This is characteristic of the low level of interest that the authorities display on questions of human security. The local political systems are used to working in a reactive manner. The administrative system is too corrupt to be efficient, which is clearly evident in the natural risk management sector. And the Central Asian states do not have the capital required for prevention: they are especially disorganised in the spheres of meteorology and geology, they lack competent engineers and they show little logistical efficiency.

The Central Asian countries also mistakenly overlook the political risk linked to the management of natural catastrophes. There is considerable risk of localised conflicts around water, and it is easy to imagine the onset of a political crisis provoked by, for example, a flood from a dam situated upstream in a neighbouring country. Moreover, inadequate disaster response could have significant domestic risks. The incapacity of a state to cope with a natural situation that threatens its population could lead to a fundamental undermining of state authority. This scenario seems particularly plausible in Uzbekistan, Tajikistan and Kyrgyzstan. Political risks should, therefore, be taken into account alongside natural risks in assessing the significance of the lack of Central Asian disaster preparedness.

Water in Central Asian Agriculture: No Time to Waste

Marlène Laruelle, Head of Central Asia Program at George Washington University and EUCAM researcher

Water in Central Asia is often discussed as if it were a scarce resource. But in theory, the region is not in a state of water stress. With only 60 million people, Central Asia should be sufficiently supplied by the rivers of the Aral Basin, the major ones being Amu Darya and Syr Darya, and in the eastern part of Kazakhstan, by the Tarim Basin. Nonetheless, the water needed for agriculture and consumption has turned into a security problem for the states and their populations.

To get a sense of the overall picture, it is instructive to look at the total water used per capita. On a person-by-person basis, Turkmenistan is the largest consumer of water in the world, followed closely by Uzbekistan. With just 700,000 inhabitants, water consumption in Ashgabat, the capital of Turkmenistan, is equivalent to that of the city of Chicago, which has a population of 2.7 million. Even in the U.S., which is known for its excessive water consumption, average use is far below Central Asian levels, with the exception of that of Kazakhstan. At the other end of the spectrum, in Israel – located in a region even more arid than Central Asia and with a very developed agricultural sector – per capita water consumption is 5 per cent that of Turkmenistan (281 m³ per capita versus 5,400 m³). Therefore, the 'water issue' in Central Asia is not only down to a lack of the resource but also caused by bad management and waste.

Total water withdrawal per capita by country

Country	Total water withdrawal per capita (m3)
Turkmenistan	5,415
Uzbekistan	2,358
Kirghizstan	2,015
Tajikistan	1,740
United States	1,550
Kazakhstan	1,304
Israel	281

Source: http://www.fao.org/nr/water/aquastat/main/index.stm

Household and industrial water usage is largely inefficient, but waste appears to be most rampant in the agricultural sector. The Central Asian countries have two paradoxical factors working against them: their Soviet heritage, which left them with extensive agricultural sectors that use a lot of water and chemicals that pollute the soil, and the end of the Soviet era, which has seen the deterioration of irrigation infrastructure due to a lack of investment by the independent states and the continual postponement of maintenance.

About one-third of the Central Asian population (22 million out of 60 million) lives directly or indirectly from irrigated agriculture, which produces 20 to 40 per cent of GDP depending on the country. However, attempts to control water consumption more efficiently remain modest. Although Central Asia was one of the birthplaces of irrigation, contemporary irrigation infrastructure is poorly managed. The governments no longer wish to invest the significant amounts necessary for renovation. Management is left to the regions or to individual collective farms, which do not possess the means, technical knowledge or logistics to carry out maintenance. As a result, 30 to 50 per cent of the water flowing through a damaged irrigation canal is lost to evaporation. Pumps and gates are repaired in an improvised manner and parts are cannibalised from other machinery. Individual farmers tend to clandestinely divert water in order to irrigate private areas of land. While collective farms still exist, they also divert water to irrigate new, often unreported areas. Not only have these diversions made water supply unpredictable, but they also exacerbate soil pollution. An increasing amount of land is becoming salinised and waterlogged. And hundreds of polluted, stagnant bodies of water and artificial lakes have been created, with a corresponding drop in crop yields.

Irresponsible water management is sometimes even part of policy

objectives. This is the case with the 'Lake of Golden Century', which the Turkmen regime has created in the middle of the Karakum Desert. The lake will collect over 10 billion cubic meters of irrigation water from surrounding areas and drain it into the Karashor depression. Initially promoted by President Saparmurat Niyazov and continued by current president, Gurbanguly Berdymukhammedov, the lake is intended as a means to bring about the future irrigation of the Karakum Desert. It is likely to have devastating consequences. Already abused irrigation networks will be dried up and the lake will evaporate on a massive scale during the summer. The area around the lake will be desertified and sand and chemicals will be displaced by wind.

Water management is also used as a geopolitical instrument, as seen in the increasing competition between Tajikistan and Uzbekistan over the Rogun dam project. The international community shares some of the responsibility for agreeing to discuss the water issue according to the terms laid down by the Central Asian regimes, involving gigantic water management projects. These terms were inherited from Soviet times, and the international community should instead have drawn on other, more recent, successful examples. The future of Central Asian agriculture still lies in the spread of drip irrigation systems, which save water and fertilizer by allowing water to drip slowly to the roots of plants through a network of pipes, tubing and emitters. Borrowing from Israel's success, for example, has so far been limited, although a growing number of Israeli, Western and Asian firms are trying to gain foothold in the region, particularly in Uzbekistan.

The difficultly in reforming water usage in agriculture is closely linked to the socio-economic structures of the countries in the region. With the exception of Kazakhstan, agriculture is the basis of the Central Asian social fabric, and thus of the political legitimacy of local, regional and national elites. Reforming water usage would require changing power relations and attitudes in the agricultural sector, with potential consequences that would go far beyond sustainable water use and improved environmental conditions. This implies the need to address the issue of rural poverty. World Bank studies show that the decline of irrigated land will accelerate in the coming decades, which will directly affect household consumption. It is thus necessary for decision makers to choose agricultural methods that are sustainable over the long term and limit capture strategies by local elites. Several other World Bank studies demonstrate that economically viable schemes exist and can be implemented, and states that have the capacity to subsidise less costly irrigation schemes, both in terms of money and water.

The social tensions in the Central Asian agricultural sector cannot be resolved using only the existing social safety valve of labor migration. Environmental problems are closely linked to social, economic, security and political issues. Improved water management is an important part of a more global reassessment of the agricultural system across Central Asia, and has clear links with the region's security.

New EUCAM Publications

Policy Briefs

U.S. Central Asia policy: Still American Mars versus European Venus?

Marlène Laruelle, EUCAM Policy Brief No. 26, September 2012

U.S. and EU policies towards Central Asia are both evolving. But are they moving in the same direction and do they have similar objectives? This brief offers critical analyses of the U.S. approach, of which Europeans need to be aware.

Download: http://www.eucentralasia.eu/fileadmin/user_upload/PDF/Policy_Briefs/PB_26_Eng-1_final.pdf

European National Policies Series

Even as the European Union has consolidated its approach to Central Asia, many European countries, including non-EU members, have developed national policies towards Central Asia or towards specific countries in the region. The 'European national policies series' seeks to map the policies of European states towards Central Asia in the fields of politics and democratic and human rights values, trade and energy, and security and development. What are the approaches of Portugal, the Netherlands, Denmark and Spain?

Portugal and Central Asia

Licínia Simão, EUCAM *National Series* Policy Brief No. 5, September 2012

Download: http://www.eucentralasia.eu/fileadmin/user_upload/PDF/Policy_Briefs/PB5_PT_1.pdf

The Netherlands and Central Asia

Merijn Hartog and Lawrence Kettle, EUCAM *National Series* Policy Brief No. 6, September 2012

Download: http://www.eucentralasia.eu/fileadmin/user_upload/PDF/ Policy Briefs/National-PB8-SP.pdf

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Niels Martin Andersen, EUCAM *National Series* Policy Brief No. 7, September 2012

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Nicolás de Pedro, EUCAM *National Series* Policy Brief No. 8, September 2012

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Established in 2008 as a project seeking to monitor the implementation of the EU Strategy for Central Asia, EUCAM has grown into a knowledge hub on broader Europe-Central Asia relations. Specifically, the project aims to:

- Scrutinise European policies towards Central Asia, paying specific attention to security, development and the promotion of democratic values within the context of Central Asia's position in world politics;
- Enhance knowledge of Europe's engagement with Central Asia through top-quality research and by raising awareness among European policy-makers and civil society representatives, as well as discuss European policies among Central Asian communities;
- Expand the network of experts and institutions from European countries and Central Asian states and provide a forum to debate on European-Central Asian relations.

Currently, the broader programme is coordinated by FRIDE, in partnership with the Karelian Institute and CEPS, with the support of the Open Society Institute and the Finnish Ministry of Foreign Affairs. The main outputs of the project are a series of policy briefs and comprehensive reports on key issues facing the Europe-Central Asia relationship.

Please follow our work on www.eucentralasia.eu. If you have any comments or suggestions, please email us at email.eucam@gmail.com



FRIDE is a European think tank for global action, based in Madrid, which provides fresh and innovative thinking on Europe's role on the international stage. Our mission is to inform policy and practice in order to ensure that the EU plays a more effective role in supporting multilateralism, democratic values, security and sustainable development. We seek to engage in rigorous analysis of the difficult debates on democracy and human rights, Europe and the international system, conflict and security, and development cooperation. FRIDE benefits from political independence and the diversity of views and intellectual background of its international team.



Founded in 1971, the Karelian Institute is a unit of the Faculty of Social Sciences and Business Studies of the University of Eastern Finland. It engages in basic and applied multi-disciplinary research, supports the supervision of postgraduate studies and researcher training, and participates in teaching. It focuses mainly on three thematic priorities: Borders and Russia; Ethnicity and Culture; and Regional and Rural Studies.



The Centre for European Policy Studies (CEPS) in Brussels is among the most experienced and authoritative think tanks operating in the European Union today. It aims to carry out state-of-the-art policy research leading to solutions to the challenges facing Europe today and to achieve high standards of academic excellence and maintain unqualified independence. CEPS provides a forum for discussion among all stakeholders in the European policy process.