

THE CHINA AND EURASIA FORUM QUARTERLY

Central Asia-Caucasus Institute & Silk Road Studies Program

Volume 8, No. 2

Summer 2010

**Energy, Environment and the
Future of Security in Central Asia**



*Central Asia- Caucasus Institute
Silk Road Studies Program*



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Editor-in-Chief

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Institute for Security and Development Policy



*Central Asia- Caucasus Institute
Silk Road Studies Program*

The *China and Eurasia Forum Quarterly* is a publication of the Central Asia-Caucasus Institute & Silk Road Studies Program.

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The China and Eurasia Forum Quarterly is currently noted in the International Bibliography of the Social Sciences (IBSS) and is also available through EBSCO Research Databases.

Subscriptions

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Map used in the cover design is courtesy of the University of Texas Libraries, The University of Texas at Austin.

This publication was made possible with the support of



The Swedish Ministry for Foreign Affairs

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THE CHINA AND EURASIA FORUM QUARTERLY

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All statements of fact, opinion, or analysis expressed in this collection of papers represent the views of the authors. They do not necessarily reflect the official positions or views of the sponsoring organizations of the workshop, or of the organizations with which the speakers and participants are affiliated. The papers in this volume have been published with the consent of the authors.

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Guest Editors' Note

Dear Readers,

Since holding an initial workshop in late 2009 considering strategic issues emanating from the nexus of energy, environmental, and more traditional security-related dynamics in the Central Asia region, events in the region have underscored how the future increasingly demands our immediate attention. The workshop *Energy, Environment and the Future of Security in Central Asia*, held in Rome on October 15-16 2009, was the first of a series of workshops on the security implications of critical energy and environmental trends in Eurasia. It is also marked the beginning of a broader project aimed at developing an *Eurasian Strategic Foresight Network*: a platform for enhancing strategic knowledge and warning capabilities regarding Eurasian energy and environmental security issues and their broader significance for international security.

The event was sponsored by the U.S. Department of Energy, the Italian Ministry of Foreign Affairs and the Stockholm-based Institute for Security and Developmental Policy. The Link Campus University (Rome) and the Gino Germani Research Center (Rome) organized the workshop. It was attended by 40 participants from 14 different countries, including the five Central Asian nations. The professional and disciplinary backgrounds of participants were diverse. Governments, inter-governmental organizations, academia, think-tanks, the corporate sector and NGO's were represented.

The principal goal of the workshop was to generate strategic insights for government and private-sector decision-makers, within and outside Central Asia, regarding emerging energy and environmental security issues in the region and how such issues will influence the region's future security and stability. The workshop sought to develop a broader, holistic and future-oriented view of Central Asia's security dynamics that would contribute to avoiding "strategic surprise" and to helping policy-makers understand emergent security issues before they become serious threats.

The workshop's design, based on a combination of speaker presentations, brainstorming sessions and interactive group work involving all

participants, was aimed at encouraging “strategic conversation” among experts from different countries and diverse disciplinary and professional backgrounds. It also aimed to foster a cross-disciplinary inter-organizational network on the strategic issues affecting this region. This methodology stimulated creative thinking about Central Asia’s security futures, emphasizing reflection about future security challenges that have not yet been clearly identified and even about issues that currently are not on the radar screen at all.

The workshop stressed the need of moving beyond the topics usually discussed by the Western expert community that deals with Eurasian energy and geopolitical issues. This community focuses mostly on the “new great game” in Central Asia: the competition between external powers (Russia, China, the USA, EU, Japan, India, Iran, Pakistan, etc.) over access to and influence over Caspian energy resources, and for geopolitical influence more generally. The main concern of these experts is the potential contribution of Central Asia to Western and European energy security rather than the security of the region itself (including its energy security).

A broad multi-dimensional concept of security was adopted at the workshop. This concept included both “hard” threats (military, political, terrorist and insurgent challenges to the state) and “soft” threats (economic, environmental, societal and human security issues), and emphasized the connections between these two issues.

The event produced:

1. A series of strategic insights for decision-makers.
2. An interdisciplinary and holistic view of security dynamics in the region integrating different dimensions of security (military, political, economic, societal, environmental, human).
3. Nascent relationships between different expert communities that deal with Central Asian issues but are generally not well-connected to each other.
4. New ideas for interdisciplinary research.

Readers will find that the current issue covers challenges for the region from environmental, economic, political, and “hard security” - or traditional security - perspectives. The editors would like to thank the authors who contributed to this issue, as well as Mike Hutton of the U.S.

Department of Energy, for his invaluable assistance in preparing this volume. We are confident that this issue will be of timely interest to a wide range of readers.

Carol Dumaine and L. Sergio Germani

Guest Editors

Welcome Speech for the Workshop

Vincenzo Scotti

Deputy Minister of Foreign Affairs and Secretary of State, Italy

Workshop on

Energy, Environment And The Future Of Security In Central Asia

October 15-16, 2009

Rome, Italy

It is my great pleasure to open this workshop aimed at kick-starting the “Eurasia Strategic Foresight Network” project. I wish to thank, therefore, the organizers of this event, sponsored by U.S. Department of Energy, the Italian Ministry of Foreign Affairs and the Institute for Security and Development Policy, namely the Department of Strategic Intelligence and Security Studies of Link Campus University and the Gino Germani Center for Comparative Studies of Modernization and Development.

From a security point of view, environmental protection and energy supply are becoming increasingly relevant all over the world. Indeed, the intensive exploitation of natural resources as a consequence of the population boom and the legitimate aspiration to better life conditions can put relations between states under severe stress, and be the trigger of serious conflicts.

As everywhere, environment and energy security in Central Asia are closely linked. On one side, climate change has a direct influence on water management, hence agriculture and food supply and ultimately on the use of energy sources. On the other side, an intensive use of energy can entail regional pollution problems and contribute to global warming. These issues play, therefore, a delicate role in the relations between the countries of the region.

For these reasons, the sustainable use of environment and water and the security in energy supply should stay at the top of the political agenda. Active cooperation in these fields is a form of confidence-building measure, because it helps keep and develop peace and stability within a region and with bordering areas. This is true for Europe, Central Asia

and the rest of the world. Therefore, our common aim – and it seems to me that this point of view is becoming widely shared – should be the correct and respectful use of environment and the setting up of transparent and efficient energy markets.

As far as energy security is concerned, there is no doubt that Italy and Central Asian countries should enhance their current cooperation, adopting a partnership approach. In exchange of energy supply, Italy can offer equipment, investments and know-how in order to participate in the implementation of new energy transport networks, the financing of new infrastructures and the setting up of legal and operational rules aimed at creating a positive environment for further investments.

Italy, within the framework of the European energy policy, is highly interested in cooperating with Central Asia in the development of new gas and oil pipelines, which could be part of the Southern corridor, currently under consideration with all the main energy actors in Eastern Europe, Caucasus and the Caspian area. This is especially true for the gas transport sector, where the implementation of the Trans-Caspian pipeline and its connection to the European network and to the new pipelines, from ITGI (Interconnection Turkey-Greece-Italy Corridor) to Nabucco, could have critical consequences for the development of the European economy.

This is especially true for Italy, due to its high dependence on imported fossil energy sources. Around 30 percent come from Eastern Europe, 30 percent from Northern Africa and the Middle East and 30 percent from Northern Europe. We need therefore to further diversify our energy supply, together with our energy mix, in order to enhance our energy security. At the same time, we need to create a comprehensive economic partnership with our suppliers in order to establish with stable and balanced relations.

As far as environment and water are concerned, Italy, together with the European Commission, has the task to coordinate, on behalf of the EU, the cooperation with Central Asia. Our first aim is to create a common ground and set up a common agenda. For this reason Italy is enhancing bilateral contacts by agreeing to a regular schedule of meetings both at the political and technical levels. The first of these meetings was held in December last year in Ashgabat, which helped both delegations to have a first exchange of views on a draft agreement on regional cooperation, that we hope could be finalized during the third EU-Central Asia meeting, to be held in Rome on the 5th and 6th of November.

To strengthen the partnership between Europe and Central Asia is not an option, but a fundamental requirement for a balanced development of both regions. In this context environment and energy issues play a crucial role and should therefore be addressed both at the academic and governmental level. I am confident that this workshop and those which will follow, together with the implementation of the “Eurasia Strategic Foresight Network”, will contribute effectively to reach this goal.

Vincenzo Scotti

October 15, 2009

Introduction

*Carol Dumaine and L. Sergio Germani**

The Workshop “Energy, Environment and the Future of Security in Central Asia”

The workshop “Energy, Environment and the Future of Security in Central Asia”, held in Rome on October 15-16, 2009, was the first of a series of workshops on the security implications of critical energy and environmental trends in Eurasia¹. It also marked the beginning of a broader project aimed at developing a *Eurasian Strategic Foresight Network*: a platform for enhancing strategic knowledge and warning capabilities regarding Eurasian energy and environmental security issues and their broader significance for international security.

The event was attended by 40 participants from 14 different countries, including the five Central Asian nations. The professional and disciplinary backgrounds of participants were diverse. Governments, inter-governmental organizations, academia, think-tanks, the corporate sector and NGO’s were represented.

The principal goal of the workshop was to generate strategic insights for government and private-sector decision-makers, within and outside Central Asia, regarding emerging energy and environmental security issues in the region and how such issues will influence the region’s future security and stability. The workshop sought to develop a broader, holistic and future-oriented view of Central Asia’s security dynamics that would contribute to avoiding “strategic surprise” and to helping policy-makers understand emergent security issues before they become serious threats.

* Carol Dumaine is Deputy Director for Energy and Environmental Security, U.S. Department of Energy, USA. L. Sergio Germani is Director, Eurasia Strategy: Center for Strategic Research on Eurasia, Link Campus University, Rome, Italy.

¹ The U.S. Department of Energy, the Italian Ministry of Foreign Affairs and the Stockholm-based Institute for Security and Developmental Policy sponsored the event. The Link Campus University (Rome, Italy) and the Gino Germani Research Center (Rome) organized the workshop. The views expressed in this paper represent those of the individuals and not of the institutions.



The workshop's design, based on a combination of speaker presentations, brainstorming sessions and interactive group work involving all participants, was aimed at encouraging "strategic

conversation” among experts from different countries and diverse disciplinary and professional backgrounds. This methodology stimulated creative thinking about Central Asia’s security futures, emphasizing reflection about future security challenges that have not yet been clearly identified and even about issues that currently are not on the radar screen at all.

The workshop stressed the need of moving beyond the topics usually discussed by the Western expert community that deals with Eurasian energy and geopolitical issues. This community focuses mostly on the “new great game” in Central Asia: the competition between external powers (Russia, China, the USA, EU, Japan, India, Iran, Pakistan, etc.) over access to and influence over Caspian energy resources, and for geopolitical influence more generally. The main concern of these experts is the potential contribution of Central Asia to Western and European energy security rather than the security of the region itself (including its energy security).

A broad multi-dimensional concept of security was adopted at the workshop. This concept included both “hard” threats (military, political, terrorist and insurgent challenges to the state) and “soft” threats (economic, environmental, societal and human security issues), and emphasized the connections between these two issues. The event produced:

1. A series of strategic insights for decision-makers.
2. An interdisciplinary and holistic view of security dynamics in the region integrating different dimensions of security (military, political, economic, societal, environmental, human).
3. Nascent relationships between different expert communities that deal with Central Asian issues but are generally not well-connected to each other.
4. New ideas for interdisciplinary research.

Perceptions of Central Asian Security Threats and Risks

One of the key themes that emerged both in presentations and brainstorming sessions throughout the workshop related to the intellectual challenges of thinking about the future of security in Central Asia. How security threats in the region are perceived by decision-makers in the West and in Central Asia itself was discussed, and the limits of these perceptions were highlighted.

The Limits of the Conventional Western Paradigm of Security

There was substantial agreement among participants that the conventional Western paradigm of security as applied to Central Asia

(the standard narrative which emphasizes certain well-known “hard” security threats while underestimating “soft” threats/risks and neglecting the ways in which “hard” and “soft” threats are connected) is no longer useful for understanding and anticipating the security challenges that the region must address in the coming years and decades.

In Central Asia it is the precisely the “soft” security issues - such as energy, ecological and climate change-related threats - that are set to play an extremely important role in shaping the region’s future security situation. Issues such as water scarcity, energy crises, food security crises, the decline of agricultural productivity, multiple environmental stresses caused by hydrocarbon production, and loss of control over radioactive materials could in the future become key factors that trigger major social upheavals, destabilization of regimes and conflicts among regional states.

Three Horizons of Risk

Another intellectual challenge of thinking about the future of security in Central Asia is the need to consider not only well-known and well-defined risks and threats (as conventional thinking tends to do), but also the less well-defined and more ambiguous issues as well as issues that are off the radar altogether. In order to address this challenge, a model was presented in the beginning of the workshop which depicted three “horizons of risk”: “horizon one” issues are the clearly-identified risks, “horizon two” risks are less clearly perceived, and “horizon three” risks are issues of which we are still unaware.

The Security Thinking of Central Asian Elites

Workshop discussions explored the security thinking of Central Asian élites. The latter’s security perceptions tend to be dominated by the concern for regime survival: the primary concern of these élites is domestic security, which is perceived as the security of the regime and of the ruling élite’s power and wealth². The dominant concern for regime security is accompanied by short-term security perceptions (“short-termism”), lack of strategic planning, a tendency to neglect threats which are not perceived as endangering regime stability in the short term, and a lack of interest in deepening regional security cooperation.

Security threats that are not considered central for regime survival (such as, for example, narcotics trafficking, environmental stresses, water scarcity, deterioration of the energy sector, decay of infrastructure,

² This assessment was made by several speaker presentations. See for example Paul Quinn-Judge’s paper “Conventional Security Risks to Central Asia: A Summary Overview” (included in this volume). The security perceptions of Central Asian élites are not usually analyzed by experts and academic researchers. One notable exception is Kirill Nourzhanov, “Changing Security Threat Perceptions in Central Asia,” *Australian Journal of International Affairs* 63, 1 (March 2009).

radioactive threats) are often assigned a much lower priority, even though in the future they may potentially bring about massive security crises.

Regional élites are reluctant to consider threats to energy, environmental and economic security as top priority issues. On the other hand, the security narratives of such élites emphasize above all two types of threats: (a) the threat of Islamist terrorism and insurgency; and (b) the challenges of external great powers to national sovereignty and independence. To a greater or lesser extent in all Central Asian regimes, the activities of political opponents or even critics of the regimes are “securitized” and often labeled as terrorist or criminal threats.

A Holistic View of Central Asian Security Challenges

A holistic and integrated view of security threats and dynamics in Central Asia emerged from workshop presentations and break-out group discussions. Participants generally agreed that Central Asia’s security challenges will become more numerous and complex in the coming years. The interdependence between different security challenges will increase. Moreover, two global strategic trends - the world economic crisis and climate change - will pose unprecedented challenges to the region.

The regional security impact of competition among external powers for the Central Asia’s energy resources and pathways will become more ambiguous and complex. Up to now, regional élites have skillfully exploited the growing strategic importance of the region and rivalries among great powers in order to manage external security problems and maintain internal stability and regime security³. This may prove more difficult in the future, as great power rivalries may pose greater dangers for the sovereignty and stability of regional states. Some speakers stressed the negative security consequences of Russian ambitions in the region (Moscow’s goal of re-establishing its historical sphere of influence in the “Near Abroad”) and of the growing Chinese economic inroads and political influence.

The Interdependence of “Hard” and “Soft” Security Issues

Presentations and brainstorming sessions explored an array of security threats and risks, many of which are interdependent. Threats and risks were divided into the two broad categories of “hard” security and political threats (these were also named “traditional” issues) and “softer” (non-traditional) threats. Discussions emphasized that the “hard” and the “soft” issues should not be analyzed separately, since they are often

³ This point is made in Stephen Blank’s paper “Energy and Environmental Issues in Central Asia’s Security Agenda” (included in this volume).

closely connected, overlap and reinforce each other⁴. (See Table 1 for an overview of key security issues identified by participants.)

Table 1. Types of Security Threats.

“HARD” SECURITY AND POLITICAL THREATS	“SOFT” SECURITY THREATS
▪ Jihadi terrorism/ insurgency (re-infiltration of IMU and other Islamist militants from bases in Pakistan and Afghanistan); ▪ Intra-regional conflict (due to border disputes among Central Asian states, competition over water and mineral resources, or ethnic tensions)⁵; ▪ Succession struggles and their potentially destabilizing impact; ▪ Elite corruption and rent-seeking (undermines the governing capacity of regional states and increases public alienation from governments); ▪ Organized crime penetration in regional governments; ▪ Undermining by great powers of national sovereignty and independence; ▪ Potential nuclear proliferation threats connected to the expansion of the nuclear industry.	▪ Decay and potential collapse of infrastructure, especially hydropower, transportation, and irrigation infrastructure; ▪ Environmental deterioration: air and water pollution due to oil and gas production; soil erosion and degradation leading to agricultural decay; ▪ Radioactive threats posed by due to uranium tailing and mining dumps; ▪ Water scarcity; ▪ Energy crises; ▪ Deterioration of educational infrastructure; ▪ Narcotics trafficking and its environmental, human and societal security consequences.

⁴ This point is particularly emphasized in Niklas Swanström’s paper, “Traditional and Non-Traditional Security Threats in Central Asia: Connecting the Old and the New” (included in this volume).

⁵ The visible manifestation of tensions among the five Central Asian states is an uncontrolled arms race.

Regional governments and the international community are rightly concerned about the re-infiltration into Central Asia of IMU (Islamic Movement of Uzbekistan) militants and other Islamist insurgents from their bases in Afghanistan/Pakistan⁶. It was pointed out during the workshop, however, that analysts and decision-makers, within and outside the region, often do not look at the connections between the radical Islamist threat and the enormous “soft” security challenges the region is facing. The interconnectedness of “hard” and “soft” threats was exemplified by several speakers by looking at the ways in which the aggravation of soft security issues (such as energy and environmental threats as well as the deterioration of educational infrastructure) could lead to an escalation of the Islamist threat in the region.

One presentation identified the mechanisms through which infrastructural decay and energy crises in Central Asian countries (in particular Tajikistan and Kyrgyzstan) could favor the expansion of Islamist insurgency in the region. The deterioration of irrigation infrastructure leads to declining fertility of land, which in turn favors rural-urban migration flows. Because of energy deficits urban enterprises are unable to absorb such migrants. These would be then vulnerable to recruitment by Islamist movements. Moreover, villages left deserted by migration could be used by militants to set up bases, training centers, and laboratories for the production of narcotics and explosives. This is an example of how Islamist movements can draw strength from the soft security threats that regional governments have failed to act upon.

Another example of how eroding soft security could stimulate the increase in the strength and influence of radical Islamism is the deterioration of educational infrastructure, which could stimulate the expansion of radical Islamist madrassas in the region. Public educational systems in Central Asia, especially in rural areas, are rapidly deteriorating. Schools are also affected for long periods by a lack of heating and electricity.

The Interconnectedness of the Region

A key point that was stressed during the discussions was the interdependence of the five Central Asian states: security breakdowns or major instability in one country can very quickly affect the others. Long frontiers and weak border security make it very difficult to prevent instability from spilling over from one country to another. For example: a

⁶ Several participants underlined that the IMU threat in Central Asia should not be underestimated and that there may be significant gaps in our knowledge of this organization. The IMU leadership is reported to have close ties with the “Pakistani Taliban” and Al-Qa’ida, and IMU is now a broad-based radical Islamist movement, attracting radical Islamists from across Central Asia, the south and north Caucasus and some of the Moslem republics of the Russian Federation.

security breakdown in Tajikistan would have immediate implications for Kyrgyzstan and Uzbekistan. Violent social upheaval in Uzbekistan would have profound impact on the region as a whole. Economic or environmental collapse in any of the five countries would trigger destabilizing population movements across borders. Such movements could determine the flaring-up of inter-states border disputes and/or ethnic tensions⁷.

Crises and instability not only easily spread from one Central Asian country to another, but also from one security area (or dimension) to another, generating a mutually reinforcing spiral of insecurity. For example, water scarcity in Tajikistan and Kyrgyzstan, by negatively affecting hydropower facilities, has triggered energy crises; both the water and energy crises have threatened food security in these countries⁸.

“Soft” security crises in the region tend to affect several areas of security simultaneously, and can potentially evolve into political and “hard” security crises. Brainstorming sessions explored possible scenarios involving such domino effects.

The Impact on Central Asia of Instability in Afghanistan and Pakistan (and Vice-Versa)

The interdependence between Central Asian security dynamics and the evolving security situation in Afghanistan and Pakistan were discussed throughout the workshop. There are significant risks that the Afghan war may spread north into Tajikistan and beyond. The Taliban are present on Afghanistan’s border with Central Asia and the U.S. relies heavily on supply routes in the region for resupply of the war effort. Some participants also pointed out the concern of the Tajik authorities about activities of the Taliban movement in the northern borders of Afghanistan and in Tajikistan’s southern frontiers.

The re-infiltration into the region of IMU and possibly other Central Asian jihadist organizations - from their bases in North and South Waziristan may already have begun. IMU fighters concentrated in the northern borders of Afghanistan are reportedly looking for contacts on the other side: in Tajikistan, Uzbekistan, and perhaps Turkmenistan.

Another key source of instability that originates in Afghanistan and affects the whole of Central Asia is narcotics production and trafficking - a security challenge that is closely connected with that of radical

⁷ This point was stressed in Paul Quinn-Judge’s paper.

⁸ The risk of spill-over of crises from one security area to another was stressed both in discussions and in speaker presentations, such as, for example, Renat Perelet’s paper “Climate Change and Water Security: Implications for Central Asia”(included in this volume). This theme is also explored in Matteo Fumagalli, “The Food-Energy-Water Nexus in Central Asia: Regional Implications and the International Response to the Crises in Tajikistan,” *EUCAM EU-Central Asia Monitoring*, No. 2, October 2008.

Islamism. Afghanistan has emerged as the single largest producer of heroin (94 percent) in the world and trafficking northwards through post-Soviet Central Asia to markets in Russia, China and Europe is increasing. Workshop discussions emphasized that the potentially destabilizing impacts on the region of narcotics trafficking from Afghanistan should not be underestimated. One example of these impacts is the increasing vulnerability of Central Asian's political systems to organized crime infiltration, corruption and co-option.⁹

Can “Muddling Through” Still Work?

One of the workshop papers noted that the more pessimistic predictions about the potential for regime breakdowns and regional destabilization put forward by some analysts since the late 1990s have not come to pass. Analysts have periodically warned that widespread poverty, unemployment, decaying health care and educational systems were making most Central Asian countries vulnerable to ethnic conflicts, the spread of Islamic extremism, and societal and elite turmoil.

As the above-mentioned paper and various speakers pointed out, though, regional elites have managed to maintain regime stability and internal security by “muddling through” crises, ad-hoc responses to emergencies and above all by “multi-vector diplomacy”. The latter refers to the skillful exploitation of the energy and geopolitical competition in the region among great powers (USA, China, and Russia) in order to mitigate the external security problems of regional states and to extract more and more financial resources from these powers. A considerable portion of such resources were - and are - devoted to the maintenance of the internal and regime security of Central Asian states.

The regimes have made it necessary for external powers to negotiate with them regarding military bases on lease, the price of natural gas, access routes to Afghanistan and partnerships with collective security bodies. They strive to maximize the concessions and advantages that they obtain from the great powers in terms of financial resources to strengthen internal security and also in terms of external security assistance. This security strategy has, since the early '90s, allowed Central Asian elites to “muddle through”, to maintain internal stability despite the precariousness of the regimes, and to avoid regional inter-state conflict despite tensions among regional states.

Several panelists stressed that, in the emerging global and regional threat environment, this security strategy will no longer be adequate to maintain stability. In other words, given the increase in the number and

⁹ Some panelists pointed out that significant sectors of Central Asian political and security elites may be involved in narcotics transport from Afghanistan to Russia, China, and Europe.

complexity of security challenges facing the region, “muddling through” no longer appears to be an option. Regional élites’ narrow focus on regime security, their pursuit of multi-vector policies and their exploitation of great power rivalries will no longer be sufficient to ensure the future internal and external security of Central Asian states.

A key theme throughout the workshop discussions was the need for regional governments and the international community to adopt a strategic approach to security and longer-term strategic planning as opposed to “muddling through” and ad-hoc responses to crises¹⁰. Four elements of such a strategic approach were identified:

1. An emphasis on regional security cooperation, which is increasingly necessary given that security problems in one country spill across national borders and can affect the entire region.
2. An integrated, multidimensional approach to security: many security issues in the region are intertwined and must be addressed together.
3. Addressing the two most important structural causes of Central Asia countries fragility and potential instability: state weakness and economic underdevelopment (see below).
4. A clear perception (and integration into strategic planning) of the close security interdependencies between Central Asia and Afghanistan.

Central Asia’s Structural Vulnerabilities and the Impact of Global Strategic Trends

Workshop discussions highlighted the inadequate attention devoted by decision-makers and analysts - both in the region and beyond it - to the deep structural factors (“structural vulnerabilities”) that affect Central Asia’s evolving security situation. Several participants and speaker presentations stressed the necessity to go beyond the analysis of the surface manifestations of security threats in order to research the deeper systemic causes of such threats. Two key “structural vulnerabilities” of the region were identified and discussed: state weakness and economic underdevelopment.

¹⁰ Some participants argued that today’s Central Asian ruling élites will not be able to successfully meet this challenge because they are structurally unable to adopt a longer-term security perspective. Others did not agree with this pessimistic assessment. They argued that, with considerable international cooperation, the existing regimes have a good chance of coping with the new threat environment while pursuing developmental and state-building agendas.

State Weakness as a Threat Multiplier

The problem of state weakness - the weak governing capacity and fragile legitimacy of central institutions of governance - affect to varying extent all Central Asian countries, including Kazakhstan, which has been relatively more successful in its state-building efforts than the other countries of the region. One indicator of state weakness is the lack of government control over certain areas of a country that are outside major cities.

State weakness (which is not incompatible with highly autocratic rule) makes it difficult for regional élites to deal effectively with emerging security problems, especially those that are not perceived as central to regime security, such as environmental and human security issues. Like weak states in other parts of the world, Central Asian regimes have insufficient resources and little political will to deal with soft security threats. The result is that such threats tend to multiply in the region.

In the region, corruption and rent-seeking characterize the behavior of state structures at all levels. Various participants included corruption among Central Asia's emerging security challenges, since it undermines the effectiveness, functioning and legitimacy of regional states. Some participants noted that corruption is one of the causes of infrastructural decay throughout the region, especially in the energy and irrigation sectors.

The weakness of regional states also favors the expansion of organized crime and Islamic militancy: two types of non-state actors that, in different ways, challenge the power and authority of Central Asian regimes. In fact, the region's political systems are, to varying degrees, vulnerable to the penetration of state structures by organized crime.

Tipping Points and the Risk of State Failure

The negative security dynamics fostered by state weakness in Central Asia can lead to further weakening of the effectiveness, functioning and legitimacy of state institutions. In the more fragile states, this trend could potentially reach a "tipping point" and undergo a sudden amplification, and state weakness suddenly could become state failure: a higher and more dangerous level of instability. In failed states, the central institutions of governance and security are unable to function throughout a state's territory¹¹.

¹¹ Several participants identified Tajikistan and possibly Uzbekistan as two countries that are at risk of serious instability and potential state failure. One participant pointed out that Tajikistan (a country that is crucial to the stabilization of Afghanistan) may be quietly sliding into the category of failed state, a slow but steady process of decline

Economic Underdevelopment and Distorted Economies

Problems of economic underdevelopment and distorted economies in Central Asia were looked at by participants through the “lens” of security implications. Despite economic reform efforts conducted by Central Asian governments, performance on development goals is mixed and regional economies are affected by serious distortions. These economies remain highly dependent on natural resource exports (oil, gas, gold, copper, and a few other commodities) as well as on migrant labor remittances. Large sectors of the region’s populations are living below the poverty line (ranging from 20 percent of the population in Kazakhstan to over 50 percent in Turkmenistan and 64 percent in Tajikistan). Rates of child mortality are high and 20 percent of the region’s population is estimated to be undernourished.

From a security perspective, distorted and unstable economic systems are a serious structural vulnerability. Some panelists underlined the connections between economic underdevelopment and the expansion of organized crime and narcotics trafficking in the region. In certain areas of Central Asia, organized crime (which manages the illegal narcotics industry) assures a minimum of economic and social stability for distressed population groups.

A number of participants identified the cotton industry in Uzbekistan, Kyrgyzstan and Tajikistan as a clear example of a key sector of Central Asian economies that not only contributes to poverty and economic stagnation, but also generates significant threats to environmental security and human health.

Can Oil and Gas Revenues Contribute to Long-Term Development and Stability?

The “resource curse”¹² and the impacts of energy-related corruption on stability were running themes throughout the workshop. The oil and gas wealth of the hydrocarbon-rich countries of the region could potentially contribute to their long-term stability and development. These countries’ élites could potentially use the income from oil and gas exports to

triggered by environmental degradation, decline of the health system and outbreaks of disease. A more drastic scenario of security breakdown, however, cannot be excluded as a result of the impact in Tajikistan of the global economic crisis. The latter could undermine migrant labor, which provides 40 percent of the country’s GDP and is a security valve to prevent mass anti-government protests. The Uzbek regime, despite its harsh internal security system, is potentially vulnerable to collapse as a result of internal or external political shocks (such as Karimov’s death, infighting among élite clans, and pressures by Islamist insurgents).

¹² The “resource curse” refers to the tendency of many energy-rich countries around the world to develop distorted and unstable economies and to waste energy revenues on corruption, acquisition of advanced weapons, and the expansion of security forces to protect the ruling élites from any challengers.

promote economic diversification and modernization. There was broad agreement, however, among participants about the uncertainty of this scenario.

Several speakers argued that the hydrocarbon-rich countries of the region are showing clear signs of the “resource curse”. According to this view, the flow of energy revenues into Central Asia is strengthening systems of élite corruption and rent-seeking connected to the energy sector, which undermine both economic development and long-term political stability. A significant portion of energy revenues is used for financing the extensive internal security apparatuses of these regimes and is also distributed to the various (usually family-based) élite clans.

One presentation stressed that Central Asian political systems, precisely because they are characterized by élite rent-seeking in the energy and other natural resource sectors, require strong autocratic rule to maintain a modicum of internal stability. Only a strong autocratic leader can prevent infighting among élite clans for the control over strategic resources from getting out of hand and threatening regime stability. Only such a leader can keep systemic corruption from surpassing certain limits and becoming a seriously destabilizing factor. For this reason such regimes are inherently fragile and unstable even though they may appear stable¹³. The weakening or death of the autocratic leader may therefore trigger a dynamic of visible and turbulent regime destabilization.

Global Strategic Trends That Will Affect Central Asia's Security Futures

Brainstorming sessions also discussed the implications of two transnational strategic trends which participants said are bound to become increasingly relevant to Central Asian security dynamics: the global economic crisis and global climate change. These two trends will have significant geopolitical and security implications around the world and in the region.

- I. *The global economic crisis*: The global economic crisis has only very recently begun to have an impact on Central Asia. The crisis is likely to increase already existing socio-economic, environmental and energy stresses in the region as well as aggravate the population's alienation from governments and widespread popular anger about corruption¹⁴.

¹³ This is argued in Gavin Hayman's and Tom Mayne's paper “Energy-related Corruption and its Effects on Stability in Central Asia” (included in this volume).

¹⁴ Up to now such public moods have not been channeled into mass anti-government activism because of the generalized “de-politicization” of Central Asian populations (the scarce interest in politics of Central Asian publics). One example of the potentially negative impact of the economic crisis on Central Asia's stability is the deportation of Central Asian migrant workers from Russia and Kazakhstan. Remittances from migrant

2. *Global climate change*: Global climate change will aggravate existing threats to Central Asia's environmental security, energy security and economic security. Climate change, which contributes to the melting of Central Asia's glaciers, is expected to exacerbate the problem of water scarcity in the region, which undermines both energy security and agricultural productivity. Worsening water supplies could significantly increase the potential for inter-state conflict and domestic political turmoil.

Focus on Five Critical Energy and Environmental Security Issues in Central Asia

Break-out group discussions and several presentations focused on five specific energy and environmental security issues:

1. The inter-related issues of water scarcity and energy security.
2. The impact of climate change on the water-energy nexus and on agriculture.
3. Environmental degradation in the Caspian region related to oil and gas production.
4. Radioactive threats related to uranium tailing and mining dumps.
5. Expansion of the nuclear industry and uranium production.

These issues, their interconnections, and their broader implications for the future of security in Central Asia were discussed during the workshop. There was wide agreement among participants about the need to enhance understanding of such implications through interdisciplinary research and strategic dialogue among different expert communities.

Water Scarcity and Energy Crises

Discussants explored the issue of water scarcity - which is at the heart of Central Asia's developmental and security challenges - and its close relation with the region's energy security: the water-energy nexus. The five Central Asian countries crucially depend on the availability of sufficient amounts of annually renewable freshwater for hydropower production in the upstream countries and for irrigated agriculture in the downstream ones. Some participants referred to this issue as the "water-energy-agriculture nexus" since the problems of agricultural deterioration and food security (one of the most urgent issues facing the region's populations) are entangled with water shortages and energy insecurity.

laborers are estimated to provide over 40 percent of Tajikistan's GDP, while remittances contribute 15-20 percent of the national incomes of Kyrgyzstan and Uzbekistan.

There was substantial agreement among participants that the increasing problems of the water-energy nexus could potentially reach a “tipping point” and trigger a serious destabilization of the social and political situation in several Central Asian countries and even an escalation into armed conflict of existing inter-state tensions over water and energy resources. Several workshop papers discussed the water-energy nexus from a security and geopolitical perspective and explained how and why it is evolving into a potential threat to regional stability. The following background points were emphasized:

1. During the Soviet era, there was a centrally administered system of water management. The Soviet command economy would order the upstream countries to collect water in their dams to be released to the downstream countries in spring and summer during irrigation periods. In return, the fossil-fuel rich downstream countries were ordered to provide the upstream countries with the energy resources they needed (oil, gas and electricity).
2. After the break-up of the Soviet Union, the mechanism of water-energy compensations imposed from above ceased to function. Competition between upstream and downstream countries over water and energy resources became increasingly common and has sometimes turned into economic warfare. Central Asian élites perceive control over water as critical to national security (which means above all regime security). Water is a vital resource for power generation in Kyrgyzstan and Tajikistan and for irrigation in Uzbekistan and Southern Kazakhstan. Regional élites have developed a zero-sum mentality regarding water and energy resources. This undermines efforts aiming at enhancing regional cooperation. In fact, numerous agreements have been signed between Central Asian states on water-sharing but very few have been effectively implemented.
3. The upstream countries accuse the downstream countries of charging gas and electricity prices that they cannot sustain. Due to unpaid fuel and electricity debts by the upstream countries, the downstream countries stop supplying fossil fuels to upstream countries, leaving Tajikistan and Kyrgyzstan without electricity and gas from time to time during winter, the period of greatest need for them. For example, in the winter of 2007-2008 gas supplies to Tajikistan were cut off, leaving thousands of houses in the freezing cold.

4. The downstream countries in turn accuse the upstream ones of decreasing year by year the amount of irrigation water released from the dams and thus endangering agricultural production in Uzbekistan and Kazakhstan.
5. The construction of new dams in Kyrgyzstan and Tajikistan is increasing the tension between upstream and downstream states. To escape from the annual disputes and to have an independent energy infrastructure, Tajikistan and Kyrgyzstan are planning to build more dams to produce electricity both to meet their own energy demands and sell it to Pakistan, Afghanistan, Iran, and India¹⁵. The three downstream countries are opposed to this idea, because their economies heavily rely on cotton, wheat and rice which, without the water coming from the upstream countries, will be impossible to grow.

The water and energy crisis that occurred in Central Asia during the 2007-2008 winter (which hit Tajikistan and Kyrgyzstan the hardest) was considered by participants as a harbinger of even more dramatic future security crises and humanitarian disasters in the region if the water-energy nexus is not addressed strategically by regional states and by the international community¹⁶. The crisis was frequently mentioned as a clear example of how the combination of water scarcity, decaying energy infrastructure and climate challenges (such as an extremely harsh winter) can provoke an acute energy crisis with a dramatic impact on human security and the exacerbation of social discontent.

The Impact of Climate Change on the Water-Energy Nexus and on Agriculture

The following points were made during workshop discussions regarding the potential impact of climate change dynamics on various security issues:

1. Climate change will worsen water supply and thus aggravate the water-energy nexus threat and the existing problem of declining productivity in the agricultural sector¹⁷.

¹⁵ One presentation described the interest of the Afghan and Pakistani governments in Tajikistan's and Kyrgyzstan's electricity export plans.

¹⁶ Renat Perelet, "Climate Change and Water Security: Implications for Central Asia" (included in this volume).

¹⁷ In relation to this issue, it was noted during discussions that Kazakhstan is looking to Russia to divert some water from the Siberian River to the Central Asian region to enhance its food security. Russia's "green" movement strongly opposes such projects due to their uncertain environmental consequences. Such projects were once rejected during the Soviet era.

2. Rising temperatures are already melting 46 of Central Asia's glaciers. This melt is expected to ultimately reduce water flow in the Amu-Dariya and Syr-Dariya rivers by up to 40 and 30 percent respectively and affect downstream areas and thus aggravate access to water of low-lying countries. This may increase instability in the region.
3. The hydropower and irrigation infrastructure that was built during Soviet times is rapidly decaying and vulnerable to collapse as a result of the adverse impacts of climate change. The shrinking of glaciers due to rising temperatures could destabilize critical mountain slopes, leading to landslides and catastrophic damage to dams¹⁸. Other significant environmental risks in the region connected to the dynamics of a changing climate include flooding in the Caspian coastal area.
4. Increasing frequency of droughts and reduced agricultural productivity are also widely expected. Agricultural production in downstream countries showing signs of widespread yield decrease. The losses of soil fertility are mainly due to widespread soil salinization caused by insufficient drainage of excess irrigation water.

Environmental Security Consequences of Oil and Gas Production

Although the hydrocarbon-rich Central Asian countries will necessarily have to exploit their energy resources in order to generate much-needed capital and foreign investment to develop their economies, workshop discussions emphasized that large-scale exploration, refining and export of oil and gas create additional threats to environmental security in a region already facing enormous ecological security problems. Such ecological threats often have serious negative impacts on local economies, the health of populations and also increase the potential for social unrest in already unstable societies¹⁹. These broader security implications are often underestimated by regional and external government and private-sector decision-makers.

¹⁸ Tobias Siegfried, "Potential Security Implications of Environmental Change in Central Asia" (included in this volume).

¹⁹ One presentation underlined that ecological stresses in the Caspian region have significant societal security impacts: migrations, lack of protein food, endemic diseases, pollution, and unfair distribution of benefits from use of bio-resources. (See Timur Berkeliev, "Environment and Security in the East Caspian Region," included in this volume).

Participants discussed the impact of oil and gas exploitation on the evolving environmental stresses in the East Caspian region, as well as on the effects of these stresses on economic and human security. Major projects involving hydrocarbon exploration, drilling, production and export contribute in various ways to the environmental degradation of the Caspian Sea's ecosystem. Discussions emphasized the negative impacts on biodiversity and habitat. Biodiversity loss, in turn, threatens the commercial fishing industry, and thus the economic security and food security of populations that depend on this industry, especially in Turkmenistan. The ensuing economic hardship and ecological deterioration that affect populations favor the strengthening of organized crime, which acquires control of illegal poaching.

Several participants emphasized that societal stresses are accumulating as a result of these environmental trends and manifest themselves in the form of labor unrest and violent protest that erupt from time to time in the oil cities of the Caspian Sea and on the site of oil and gas operations.

Several speakers pointed out that the need to maximize energy revenues and rents to distribute to various élite clans (so as to maintain regime stability) leads Central Asian governments to pursue exploitation of energy resources with a minimum of limitations and with little regard to environmental security consequences and potential impacts on social stability. This is another example of how the threat perceptions of Central Asian élites are dominated by a concern for regime security, which leads to underestimating or ignoring environmental threats²⁰.

Uranium Tailing and Mining Dumps

Workshop discussions identified radioactive contamination as a serious threat to ecological, economic and human security in the region, even though Central Asian governments do not perceive radioactive security as national and regional security issue. The region is vulnerable to radioactive threats because during the Soviet-era, Central Asia was the nuclear weapons testing ground and uranium was mined in the region for use in the Soviet nuclear arsenal. Presently, there are uranium storage facilities, tailing and mining dumps in numerous sites in Kyrgyzstan, Uzbekistan, and Tajikistan.²¹

²⁰ Also underlined in this regard was the fact that Russian and Chinese investment in the region's energy sectors is more attractive for Central Asian élites because it comes with fewer environmental and social restrictions.

²¹ Tailings are the materials left over after the process of separating the valuable fraction from the worthless fraction of an ore. The extraction of minerals from ore requires that the ore be ground into fine particles, so tailings are typically small and range from the size of a grain of sand to a few microns. (U.S. EPA Definition).

One presentation discussed the threat posed by Soviet-era uranium deposits in Kyrgyzstan (where there are 43 million cubic meters of radioactive waste in uranium waste sites dating from Soviet times) to Central Asia as a whole²². Four types of radioactive security dangers were described:

1. Pollution of the environment with radionuclide and other toxic elements in the regions of radioactive waste storage.
2. The potential destruction of radioactive waste tailing dumps by climate change events, natural disasters (typical of mountainous and seismic regions) as well as by anthropogenic catastrophes.
3. The risk of large land avalanches in radioactive dump areas located near the Mailu-su river basin, which is one of the affluxes of the Syr-Dariya River. Destruction of these tailing dumps by avalanches could cause the discharge and spread of radioactive substances into the Mailu-Suu River and could expand throughout the densely-populated Fergana valley (the Syr-Dariya flows through the Fergana Valley).
4. Tailing dumps (which are insufficiently protected) could be the target of terrorist attacks, causing environmental security and public health disasters.

A trans-boundary radioactive security disaster would provoke not only damage to the environment and the economy, but also trigger large-scale migration. Moreover, several participants underlined some of the potential spill-over effects into the radioactive security area of various natural or man-made security threats discussed during the workshop: insufficient water resources due to climate change and melting glaciers; conflicts among regional states over water and energy; energy crises in Kyrgyzstan and Tajikistan; induced seismicity in areas where large hydropower stations are situated; desertification; flooding of valleys; glacial degradation. All of these issues can interact with and exacerbate the radioactive threats stemming from Soviet-era uranium deposits.

The capacity of Central Asian governments to monitor and prevent potential radioactive security disasters is weak, as is their capacity to manage and mitigate such disasters should they occur. These governments lack sufficient financial and technical resources and personnel to deal with uranium dumps and rehabilitate potentially dangerous radioactive waste storage sites.

In order to deal effectively with radioactive threats governments must adopt a strategic approach, which entails first of all regional

²² Kaliia Moldogazieva, "Radioactive Tailings in Kyrgyzstan: Challenges and Solutions" (included in this volume).

cooperation. Tailing dumps, in fact, are often located near the basins of trans-boundary rivers. Moreover, radioactive threats must be addressed in an integrated manner together with other soft security issues, given the strong interdependence between radioactive security and other dimensions of security in the region.

Expansion of the Nuclear Industry and Uranium Production

Central Asia is poised to become a major producer and supplier of uranium for the world markets, while Kazakhstan is planning to develop its own nuclear industry²³. This development adds a new dimension to the regional security environment.

One presentation discussed the security implications of the introduction of nuclear energy and the expansion of uranium production in Central Asia²⁴. Increased uranium exports from Central Asia are expected to have positive effects in terms of economic development; however, expanded uranium production and introduction of nuclear energy to the region also entail several potential risks for the region's security and stability. These potential risks include nuclear proliferation, nuclear terrorism, environmental and public health risks, mass anti-nuclear protests, potential weakening of control over nuclear facilities and radioactive materials in case of domestic political instability, increasing competition between Central Asian business élites for the control of the lucrative uranium export and nuclear energy business, increasing geopolitical competition among external powers for access to Central Asian uranium.

Although all Central Asian countries are committed to preventing nuclear proliferation, Kazakhstan -- the only country for now that is planning to introduce nuclear energy and some stages of the nuclear fuel cycle -- is not considering any nuclear weapons-related program, there are proliferation risks associated with nuclear energy development. There are also potential risks of an environmental, public health, and socio-political nature.

Spent nuclear fuel is a proliferation risk, if reprocessed and not properly controlled. Since the government of Kazakhstan has shown no intention of reprocessing spent-fuel, the risks then will be to the environment and to public health. There are currently no facilities for spent-fuel storage and no firm plans as yet on how to manage the spent-fuel from a proposed nuclear power plant. Nuclear facilities, if not properly secured and managed, are potential terrorist targets. The Soviet

²³ Kazakhstan is already one of the world's largest uranium producers and is expanding its nuclear fuel cycle capacity. All five Central Asian states have plans to explore uranium reserves and expand uranium production.

²⁴ Togzhan Kassenova, "Uranium Production and Nuclear Energy in Central Asia: Assessment of Security Challenges and Risks" (included in this volume).

legacy of lax controls over its nuclear fuel cycle will make this a concern, until demonstrated otherwise. The expansion of uranium production and the introduction of nuclear energy to the region increase environmental security risks due to radioactive wastes and the environmental costs of building nuclear power plants. The expansion will exacerbate radioactive contamination and environmental degradation of the affected areas. Radioactive waste is generally viewed as a threat if it were to be used as source material for a radioactive dispersal device (RDD). While the environmental and health impact of an RDD would be limited, its use or a threat of its use could cause considerable panic and have a strong psychological impact.

Finally, some countries in the region lack the capacity to implement strong export controls over sensitive materials, which represent a related security concern.

Conclusion: Key Insights and Critical Uncertainties

The following is a summary of key insights that emerged from workshop presentations, discussions and brainstorming sessions:

1. *“Soft” security issues will become key factors in influencing Central Asia’s future security and stability:* Security analysts and decision-makers within and outside Central Asia tend to focus on certain well-known “hard” security issues (such as Islamic militancy and great power threats to sovereignty of regional states) while neglecting “soft” security issues, such as energy, ecological and climate change-related threats. However, “soft” security threats will play an extremely important role in shaping the region’s future security situation. Issues such as water scarcity, energy crises, infrastructural decay, food security crises, the decline of agricultural productivity, environmental stresses caused by hydrocarbon production, and radioactive contamination could in the future become key factors that trigger major social upheavals, destabilization of regimes and conflicts among regional states.
2. *In Central Asia, “hard” and “soft” security issues are often closely connected:* The “hard” and the “soft” issues should not be analyzed separately, since they are often connected, overlap and reinforce each other. Analysts and decision-makers, within and outside the region, often do not look at the connections between conventional “hard” threats (such as militant Islamism) and the enormous “soft” security challenges the region is facing. Militant Islamism and organized crime- two types of non-state actors which challenge

Central Asian regimes - will draw strength from “soft” security deficits and crises that regional governments fail to act upon.

3. *In the absence of effective regional cooperation, the region's interconnectedness increases its fragility:* The close interconnectedness among the five Central Asian countries is a factor of fragility and of vulnerability to domino effects. Security breakdowns or major instability in one country can very quickly affect the others. Moreover, crises easily spread also from one security area to another, generating a mutually reinforcing spiral of insecurity. For example, water scarcity has triggered energy crises, and the latter has aggravated problems of food security, increasing the risk of serious social unrest.
4. *There is a significant risk of instability in Afghanistan and Pakistan spilling over into Central Asia, and serious instability in Central Asia would have a significantly negative impact on Afghanistan and Pakistan:* There are significant risks that the Afghan war may spread north into Tajikistan and beyond. The Taliban movement is active in the northern borders of Afghanistan and in Tajikistan's southern frontiers, while a significant re-infiltration into the region of IMU and possibly other Central Asian radical Islamist organizations - from their bases in North and South Waziristan may already have begun. Another key source of instability that originates in Afghanistan and affects the whole of Central Asia is narcotics production and trafficking - a security challenge that is closely connected with that of radical Islamism
5. *“Muddling through” and traditional security strategies will not be able to deal with a more complex threat environment:* Central Asia's security challenges will become more numerous, complex and interdependent in the coming years. Two global strategic trends - the world economic crisis and climate change - will pose unprecedented challenges. Up until today, ruling élites in the region have managed to maintain internal stability by focusing narrowly on regime security, “muddling through” crises, and engaging in “multi-vector diplomacy” vis-à-vis external powers. In the emerging global and regional threat environment this security strategy will no longer be adequate to maintain stability. Regional governments should adopt a strategic approach to security and longer-term strategic planning as opposed to “muddling though” and ad-hoc responses to crises.

6. *State weakness is a key structural vulnerability:* The weakness of Central Asian states (the weak governing capacity and fragile legitimacy of central institutions of governance) make it difficult for regional élites to deal effectively with emerging security challenges and future crises, especially in areas that are not perceived as central to regime security, such as environmental, economic and human security. State-building and consolidation of sovereignty should therefore be a top priority for Central Asia's ruling élites.
7. *Corruption and rent-seeking in energy sectors undermine long-term stability and development:* The oil and gas wealth of the hydrocarbon-rich countries of the region could potentially be used to promote the economic diversification and modernization, thus contributing to the long-term stability of these countries. However, there are indications that the flow of energy revenues into Central Asia is strengthening systems of élite corruption and rent-seeking, undermining both economic development and long-term political stability. Corruption and rent-seeking in general, which characterize the behavior of Central Asian élites and state structures, undermine the effectiveness, functioning and legitimacy of regional states. They are also among the chief causes of infrastructural decay throughout the region.
8. *The water-energy nexus could trigger serious instability and intra-regional conflict:* The increasing problems of the water-energy nexus (the interdependent threats of water scarcity and energy shortages) could potentially reach a "tipping point" and trigger a serious destabilization of the social and political situation in several Central Asian countries and even an escalation into armed conflict of existing inter-state tensions over water and energy resources. The water and energy crisis that occurred in Central Asia during the 2007-2008 winter should be seen as a harbinger of even more dramatic future security crises and humanitarian disasters in the region²⁵.

²⁵ Water scarcity may force the Central Asian region to pay more attention to this natural resource and use the virtual water concept in the development of their economies, thus turning to water efficient production facilities and products and looking for such innovative technologies elsewhere (the U.S., the EU countries). Debt-for-nature exchanges could become advantageous for such countries as Tajikistan, while other countries such as Kazakhstan and Turkmenistan may opt for exchanges of western technologies for access to their environmental resources. These moves could have a salutary effect: in addition to stabilizing the region's economic security, it could reduce corruption levels in the CA region since such deals do not involve heavy cash flows.

9. *Global climate change will increase potential conflict and instability in the region:* Global climate change will worsen water supply in Central Asia and thus aggravate the water-energy nexus threat and the existing problem of declining productivity in the agricultural sector. Worsening water supplies could significantly increase the potential for inter-state conflict and domestic political turmoil. The hydropower and irrigation infrastructure that was built during Soviet times is rapidly decaying and vulnerable to collapse as a result of the adverse impacts of climate change.
10. *Environmental deterioration caused by hydrocarbon exploitation can undermine economic and societal security in the Caspian Sea region:* The hydrocarbon-rich Central Asian countries will necessarily have to exploit their energy resources in order to generate much-needed capital and foreign investment to develop their economies. However, large-scale exploration, refining and export of oil and gas contribute in various ways to the environmental degradation of the Caspian Sea's ecosystem, threatening biodiversity and habitat. Such ecological threats often have serious negative impacts on local economies, the health of populations and also increase the potential for social unrest in already unstable societies.
11. *The insecurity of uranium tailing and mining dumps is a potentially serious security threat for Central Asia:* The region is vulnerable to radioactive threats because during the Soviet era uranium was mined in the region for use in the Soviet nuclear arsenal. Inadequate security at uranium storage facilities, tailing and mining dumps in numerous sites in Kyrgyzstan, Uzbekistan, and Tajikistan is a serious threat. Dumps could be destroyed by climate change events, natural disasters (typical of mountainous and seismic regions) as well as by anthropogenic catastrophes. The resulting spread of radioactive pollution would not only damage the environment and the economy, but could trigger large-scale population movements.
12. *Central Asia's emerging role in the global nuclear renaissance will add a new dimension to the region's security challenges:* Increased uranium exports from Central Asia are expected to have positive effects in terms of economic development; however, expanded uranium production and introduction of nuclear energy to the region also entail several potential risks for the region's security and stability. These potential risks include nuclear proliferation, nuclear terrorism, environmental and public health risks, mass anti-nuclear protests, potential weakening of control over nuclear facilities and

radioactive materials in case of domestic political instability, increasing competition between Central Asian business élites for the control of the lucrative uranium export and nuclear energy business, increasing geopolitical competition among external powers for access to Central Asian uranium.

13. *A strategic approach to regional and national security and longer-term strategic planning is urgently needed in Central Asia:* In order to deal effectively with the region's emerging threat environment, regional governments and the international community should adopt a strategic approach to security and longer-term strategic planning as opposed to "muddling through" and ad-hoc responses to crises. The three key elements of such a strategic approach are: (a) an emphasis on regional security cooperation, which is increasingly necessary given that security problems in one country spill across national borders and can affect the entire region; (b) an integrated, multidimensional approach to security, since many security issues in the region are intertwined and must be addressed together; (c) the need to address the two most important structural vulnerabilities of Central Asian political and economic systems: state weakness and economic underdevelopment; (d) the need to take into account the close security interdependencies between Central Asia and Afghanistan and integrate them into strategic planning.

The broad assessment of many (though not all) participants was that major instability in the region is a real possibility, and that energy and environmental factors could play a crucial role in triggering it. Though the time-frame for such a scenario of dangerous instability is difficult to assess, governments should pay careful attention to its potential consequences for international security (for example, military intervention in the region by one or more external powers, or the collapse of one of the Central Asian regimes followed by the takeover of parts of its territory by Islamist militants).

It remains uncertain whether the region will go down the path of serious instability, state failure and massive security breakdowns or, on the contrary, will successfully deal with multiple security challenges and even move towards greater stability. The direction of Central Asia's future evolution will depend on an array of critical unknown factors ("critical uncertainties"), many of which were identified during workshop discussions. The following critical uncertainties were highlighted by participants:

1. *Great power geopolitical and energy competition in the region:* How will the geopolitical and energy strategies of the great powers evolve vis-à-vis the region? Will the West (U.S. and EU) develop a coherent long-term policy towards Central Asia? How will Russian ambitions in the region evolve? Will there be a conflict between Russia and China for dominance in the region?
2. *Developments in Afghanistan and Pakistan:* Will instability spread from Afghanistan and Pakistan into Central Asia? Will the re-infiltration into Central Asia of Islamist militants assume greater proportions? How will a failure to stabilize Afghanistan impact on Central Asia? Will Pakistan be affected by major destabilization and how will that influence the region?
3. *Developments in Iran:* Will the Iranian regime collapse or be substantially reformed? As a result of regime change or reform, will Iran be reintegrated into the global economy and international order? How will geopolitical and energy competition between external powers in Central Asia be affected by regime change in Iran? How will internal political developments of Central Asian states be affected?
4. *Intraregional competition and cooperation:* How will the geopolitical ambitions of Central Asian states evolve? How will inter-state tensions over the control of water resources and over hydroelectric projects play out? Will regional states move toward greater cooperation on common “hard” and “soft” security threats?
5. *Central Asian ruling élites and state-building:* Will ruling élites move away from a narrow focus on regime security toward a more strategic approach of security? Will they be able to pursue more effective state-building agendas? Will they be able to manage a succession crisis? Will a new generation of Western-educated élites, more oriented to modernization, rise to power? Will organized crime and its penetration into state structures be effectively brought under control?
6. *Energy development paths:* What energy development paths will the hydrocarbon-rich regional countries follow? What will these choices mean for economic diversification and modernization? How severe will the environmental stresses of energy exploitation be? How will the revenues from energy resources be used? Will such revenues strengthen stability or exert a corrupting influence on governance? Will the companies involved in energy exploration and extraction be Chinese, Russian or Western?

7. *Impact of environmental, energy and human security crises on socio-political stability:* How severe will future environmental, energy and/or food crises in the region be? How strong will their impact be on socio-political stability? Will they trigger social upheavals and popular anti-regime revolts? Will the political passivity of populations prevent such crises from provoking regime collapse?
8. *Impact of climate change dynamics:* What will be the intensity of climate change impacts on infrastructure? How acute will water shortages become as a result of climate change? What degree of damage will it inflict to agricultural productivity? Could climate change impacts produce cascading effects in various areas (water, energy, food, and infrastructure) that could trigger massive security breakdowns?

Traditional and Non-Traditional Security Threats in Central Asia: Connecting the New and the Old

*Niklas Swanström**

ABSTRACT

This article analyzes how traditional and non-traditional threats in Central Asia interact and reinforce each other. It argues that analysts need to overcome the intellectual separation between “hard” and “soft” threats and to better understand how “hard” and “soft” security issues overlap and in many ways reinforce each other. The weakness of Central Asian states seriously impairs their capacity to deal with security threats, especially non-traditional ones (including environmental threats). The result is that security problems in the region tend to multiply. The combination of weak states with old and new security threats in Central Asia weakens government structures even more and creates a vicious cycle.

Keywords • Greater Central Asia • Afghanistan • Narcotics Trafficking • Organized Crime; Islamic Radicalism • Non-traditional Security Threats • Human Security

Introduction

Since the end of the Cold War, there has been growing awareness on the need to widen the concept of security and distinguish between “hard/traditional” and “soft/non-traditional” security threats. This is increasingly accepted, even if the implementation of strategies to face “soft” security threats has been less prominent.¹ The implementation has

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¹ Many of the so-called new (soft) security threats are neither new nor particularly soft. Narcotics trade as one example has existed since time immemorial. Environmental security has as another example brought states to an end even far before modern man

improved somewhat in the last few years, even if there is much to be hoped for. One of the new challenges we now face is the intellectual separation between hard and soft security threats; a separation which has been almost total and in too many ways, artificial. The focus on non-traditional security challenges has been a positive trend in terms of elevating the soft security threats. However, there has also been a failure to understand how traditional and non-traditional security threats overlap, and in many ways, reinforce each other.

Non-traditional (which tends to be transnational) threats to security have risen to prominence, primarily in developing and post-communist areas and then particularly in Greater Central Asia.² Among these, the trade in illicit drugs arguably carries the largest societal, political and economic consequences in many areas. It threatens the fabric of societies through addiction, crime and disease. It exacerbates corruption in already weak states which impairs their economic and political functioning. Moreover, through links to insurgency and terrorism, the drug trade is an increasing threat to regional and international security in the most traditional, military sense.³ As such, the drug trade affects both “hard” and “soft” security. However, there are a multitude of other soft security threats that have a devastating potential to hurt the security of the state and society.

Arguably, nowhere is the damning effect of soft security threats higher than in the Greater Central Asian region. This is mainly because it is interlinked with traditional security threats and trans-national implications. One departure point for analysis would be the drug trade, which carries multiple dimensions of threats to security and has become

realized the importance of such threats. The terminology of soft/non-traditional and hard/non-traditional will be used interchangeably in this text.

² Much of the soft security threats have shown to be much more transnational in its structure than the traditional security threats. Economic and environmental threats are not only transnational but increasingly global in its stretch. See Niklas Swanström, “The Narcotics Trade: A Threat to Security? National and Transnational Implications,” *Global Crime* 8 (2007): 1-25; Niklas Swanström, “Political Development and Organized Crime: The Yin and Yang of Greater Central Asia?” *China and Eurasia Forum Quarterly* 5, 4 (2007): 83-101.

³ Saltanat Berdkeeva, “Organized Crime in Central Asia: A Threat Assessment,” *China and Eurasia Forum Quarterly* 7, 2 (2009): 75-100. Tamara Makarenko, “Terrorism and Transnational Organised Crime: the Emerging Nexus,” in *Transnational Violence and Seams of Lawlessness in the Asia-Pacific: Linkages to Global Terrorism* (Hawaii: Asia Pacific Center for Strategic Studies, 2004). Kimberley Thachuk, “Transnational Threats: Falling Through the Cracks?” *Low Intensity Conflict & Law Enforcement* 10, 1 (2001): 47-67; Sabrina Adamoli, et. al., *Organized Crime Around the World* (Helsinki: HEUNI, 1998); Barbara Harris-White, *Globalization and Insecurity: Political, Economic and Physical Challenges* (Hampshire and New York: Palgrave, 2002); Ian Griffith, “From Cold War Geopolitics to Post-Cold War Geonarcotics,” *International Journal* 30, 2 (1993-1994): 1-36; Richard Matthew and George Shambaugh, “Sex, Drugs, and Heavy Metal: Transnational Threats and National Vulnerabilities,” *Security Dialogue* 29 (1998): 163-175.

acutely visible in the Greater Central Asia region.⁴ With a galloping production of opium in war-torn Afghanistan and increasing trafficking of heroin northward through post-Soviet Central Asia to markets in Russia, China and Europe, the adverse impact of the drug trade on the wider region is becoming increasingly apparent. However, systematic research into this phenomenon has been relatively scant.⁵ Similarly, environmental, water, economic and other security threats have not received the attention they deserve and have drowned in the media attention regarding the terrorist threat and the soft and hard implications this threat could have on society.⁶ This is troubling as the current lack of economic development has most likely done more to create a base for terrorist recruitment than any other issues, as well as strengthening the position of illegal economic activity. Also, the water issue threatens to bring states to war and in extreme cases, deprive some regions in Greater Central Asia from any chance of human sustainability. The tension is particularly high between upstream states (Tajikistan and Kyrgyzstan) and downstream states (Uzbekistan and Kazakhstan and to certain extent Turkmenistan).

The linkage between the existing security threats (soft and hard) in the region and the weak political and economic performance not only reinforces the negative development, it could in fact threaten the very fabric of the states. Many of the mentioned security threats thrive in weak states, such as organized crime and terrorism. If one looks at the issue of environmental security in these states, it is apparent that this type of security threatens the very sustainability of the State, but not much is done to manage this security deficit. This is because such security threats are often seen as minor. Due to this reasoning, resources are focused on keeping the government in place rather than securing long-term security for the states, governments and the people.

⁴ Greater Central Asia is here defined as including the former Soviet republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, as well as Afghanistan and the Western Chinese Xinjiang-Uyghur Autonomous Province.

⁵ The literature on the drug trade in Central Asia consists mainly of United Nations Office on Drugs and Crime Reports and a handful of articles and working papers. These include: Martha Brill Olcott and Natalia Udalova, "Drug Trafficking on the Great Silk Road," Working paper 11, *Carnegie Endowment for International Peace*, March 2000; Alexander Seger, *Drugs and Development in the Central Asian Republics* (Bonn: Deutsche Gesellschaft für Technische Zusammenarbeit, 1996); Kairat Osmonaliev, "Developing Counter-Narcotics Policy in Central Asia: Legal and Political Dimensions," *Silk Road Paper* (Washington D.C. and Uppsala: Central Asia Caucasus Institute and Silk Road Studies Program, January 2005).

⁶ Bo Libert, Erkin Orolbaev, and Yuri Steklov, "Water and Energy Crisis in Central Asia," *China and Eurasia Forum Quarterly* 6, 3 (2008): 9-20; Samuel Chan, "Breaking the Impasse in Afghanistan: Problems with Neighbours, Brothers and Guests," *China and Eurasia Forum Quarterly* 6, 4 (2008): 103-128.

What Are We Looking At?

The security debate has for too long focused on military threats towards the state and the “softer” issues such as environment, trade, transnational crime, human security, etc. have not been seen as potential security threats.⁷ One important reason for this is that traditionally, security threats could, by definition, only be directed towards “the state and the state is and should be about security, with the emphasis on military and political security”.⁸ Thus an issue or event would only be classified a security threat if the survival of the state as an entity was at risk.⁹ In this context, Lippman claims that security is when “a nation is secure to the extent to which it is not in danger of having to sacrifice core values, if it wishes to avoid war, and is able to, if challenged, to maintain them by victory in such war”.¹⁰ These old views of security has largely changed with the globalised world and an increasing number of international organizations that carry significant weight, not least the European Union that has made much of the state oriented security less important but also that strictly non-military issues has taken a prominent position in the discussions on security.

It is evident that security still is viewed in military terms and more importantly that, there is an enemy that is clearly defined (compared to terrorism, transnational crime, economic security and environmental issues) and can be defeated militarily. This way of looking at security has been in place since the Westphalian peace treaty in 1648, where today’s western concept of the nation-state was created. However, in the early 1970s, economic security began to get academic attention, and quickly received political interest. Later, in the 1980s, environmental issues began to increase in salience, at least academically.¹¹ Yet, the discussion on

⁷ Karl Deutsch, *et al.*, *Political Community and the North Atlantic Area* (Princeton, Princeton University Press, 1957); Arnold Wolfers, *Discord and Collaboration: Essays on International Politics*, (Baltimore: Johns Hopkins University Press, 1962); Kenneth Waltz, *Theory of International Politics* (Reading, Mass: Addison-Wesley, 1979).

⁸ Barry Buzan, Ole Waever, Jaap de Wilde, *Security: A New Framework for Analysis* (Boulder: Lynne Rienner Publishers, 1998), p. 37.

⁹ Security studies have traditionally focused on state or the classical phenomena of security complexes. This have changed as the international and regional systems are increasingly important, but also the emergence of subunits of the states, such as regions or ethnic groups, as economic and political actors. Niklas Swanström, *Regional Cooperation and Conflict Management: Lessons from the Pacific Rim* (Uppsala: Department of Peace and Conflict Research, Uppsala University, 2003); Björn Hettne, Andras Inotai, Osvaldo Sunkel (eds.), *The New Regionalism and the Future of Security and Development* (Basingstoke: Macmillan, 2001).

¹⁰ Walter Lippman, *U.S. Foreign Policy: Shield of the Republic* (Boston: Little, Brown and Company, Boston, 1943), p. 53.

¹¹ Fred Hirsh and Michael W. Doyle, “Politization in the World Economy: Necessary Conditions for an International Economic Order,” in Fred Hirsch and Michael W. Doyle and Edward L. Morse (eds.) *Alternatives to Monetary Disorder* (New York: McGraw-Hill,

alternative security concepts did not gain real momentum until after the dissolution of the USSR and the end of the Cold War in 1991. Then the focus shifted from “hard” military security to “softer” issues, and societal, political, environmental and economic security became more prominent. These changes in the perception of security have created a debate between the academics who wish to see a widened security definition and those wanting to keep it narrow.¹²

The debate can, in simplified terms, be divided into military versus non-military sources of threat and state versus non-state actors.¹³ The political economy and the political sector have however become more closely connected to the military sector and this politico-military focus has been widely used among “reformed” traditionalists.¹⁴ Despite a slight widening of the analytical focus, the state remains the basic referent object for traditionalists. Individual states are supposed to have very little reason for cooperation as the international system is anarchic and states’ only goal is survival. If cooperation is initiated, it will crumble as soon as the strategic factors weaken.¹⁵ It is proposed that this has changed with increased globalization and the importance of international trade and greater interaction in international and regional organizations. The interests of states are no longer singular. Furthermore, sub- or trans-national actors, such as large corporations and political parties, have interests that are transnational and might be against state’s interest. This can be seen in the sub-regional cooperation between different regions in Europe. This is partly due to globalization and increased interdependence between states, but also to the financial and moral influence which companies, international organizations and NGOs carry and the

1977), pp. 11-66; Donella H. Meadows, et al., *The Limits of Growth: A Report for the Club of Rome’s Project on the Predicament of Mankind* (New York: Potomac Associates, 1972); John Gerard Ruggie, “International Regimes, Transactions and Change: Embedded Liberalism in the Postwar Economic Order,” *International Organization* 35, 2 (1982): 379-415.

¹² The arguments to keep it more narrow is that if the security concept was expanded it would include everything and nothing, each single factor could potentially be a security threat. The arguments for widening the security concept is simply that the world is more complicated than the classical definitions allowed for and that there are plenty of security threats out there that are equally or worse security threats to states, individuals and other sub-national entities.

¹³ For a more detailed discussion see: Barry Buzan, Ole Waever, Jaap de Wilde, *Security: A New Framework for Analysis*, op. cit.; Richard Ullman, “Redefining Security,” *International Security* 8, 1 (1993): 129-153; Ole Waever, “Securitization and Desecuritization,” in Ronnie Lipschutz (ed.), *On Security* (New York: Columbia University Press 1995).

¹⁴ Mohammed Ayooob, *The Third World Security Predicament: State Making, Regional Conflict, and the International System* (Boulder: Lynne Rienner, 1995); Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981); Edward Mansfield, *Power, Trade and War* (Princeton: Princeton University Press, 1994).

¹⁵ Kenneth Waltz, *Theory of International Politics*, op. cit.; Kenneth Waltz, “Anarchic Orders and Balances of Power,” in Robert O. Keohane (ed.), *Neorealism and its Critics* (New York: Columbia University Press, 1986).

increased importance they have in international affairs. The diversification of the interests of the state, its actors and globalization process has increased the importance of non-military security threats. This has also increased the need for cooperation because new questions have been raised by new actors.¹⁶ Arguably, these threats have been prevalent earlier but it is the end of the Cold War that made it possible to have a more diversified view on security. The overriding cleavage between the communist and capitalist world crumbled and in the dust we could see security threats that thrived behind the walls between the West and the East. For example, in the Soviet Union, issues such as the environmental degeneration (Aral Sea) and societal security (AIDS, poverty and narcotics abuse) was prevalent before 1991, but they had been overshadowed by the military security and the threat from the West.¹⁷

There are still close and legitimate connections between security and the state as a political unit, but the argument among new security theorists is that security should incorporate more than just the state as the analytical object. This is especially apparent in a world where international organizations (World Trade Organization (WTO), United Nations (UN), etc.), regional groupings (European Union, North American Free Trade Agreement (NAFTA), Shanghai Cooperation Organizations (SCO), etc.), and sub-national entities are flourishing.¹⁸ Buzan *et al* has attempted to construct a wider definition of security, without making everything and nothing security.¹⁹ These endeavors are not new but some more inclusive theories have been criticized by traditionalists. Even so, this new way of approaching security is important because it is a dynamic field where changes can be seen in the security perceptions of individual states over time.

The new attempts have led to the development of a framework that will take the newly emerging challenges and threats into consideration (securitization), such as transnational issues. This is because the traditional approaches based on the military-political sectors are not

¹⁶ Niklas Swanström, *Regional Cooperation and Conflict Management: Lessons from the Pacific Rim*, *op. cit.*

¹⁷ Both in China and Russia AIDS/HIV, organized crime and narcotics problem was swept under the carpet for political reasons. It was unconceivable that the perfect political problem could have these problems, which were a result of Western decadence. The result is that high numbers, and increasing, is detected in both states and that the unchecked problem was allowed to spread in areas where it could have been prevented.

¹⁸ Niklas Swanström, *Regional Cooperation and Conflict Management: Lessons from the Pacific Rim*, *op. cit.*; Chia Siow Yue and Lee Tsao Yuan, "Subregional Economic Zones in Southeast Asia," in Ross Garnaut and Peter Drysdale (eds.), *Asia Pacific Regionalism: Readings in International Economic Relations* (Pymble: Harper Educational Publishers, 1994); Edward K.Y. Chen and C.H. Kwan (eds.), *Asia's Borderless Economy: the Emergence of Sub-regional Zones* (St Leonards: Allen & Unwin, 1997).

¹⁹ Barry Buzan, Ole Waever, Jaap de Wilde, *Security: A New Framework for Analysis*, *op. cit.*, p. 37.

sufficient to explain “softer” threats and also make it difficult to develop appropriate solutions. The security concept is therefore being revised and broadened to include sectors such as economic, environmental and societal developments. It is also Buzan *et al* that offers the most interesting and operational definition, where a security issue is presented as posing an existential threat (which is anything that questions the recognition, legitimacy, or governing authority) to a designated referent object (which could be a state, but not necessarily).²⁰ This approach provides for wider definitions of security. It incorporates factors such as the failure of states to fulfill the expectations of its individuals and international actors, as well as its governing capacity. These factors are extremely important in any discussion on the impact of international narcotics trade, as it could potentially affect the lives of its citizens and the states governing capacity through corruption and failed economic performance.

Internal Weakness and Security in Greater Central Asia

Greater Central Asia consists of states that suffer from internal weaknesses in their political and economic functions at different but always significant degrees. The impact of this on the development of the security situation and the state’s ability to act are devastating in some cases and serious in most. Internal weakness has been a growing problem for many of the states in this region but potentially more important is the regional weakness that enables organized crime, extremism to grow and prevents effective multilateral cooperation to combat the problems. The Shanghai Cooperation Organisation have taken a number of far reaching measures to combat different forms of soft and hard security threats. Even so, the results are not that promising. This is mainly due to the inability of the Central Asian members in the SCO that lack the willingness and ability to act.

This is not necessarily a problem only for Greater Central Asia. It has been a negative development since independence that is disturbing for regional and international security. Increasingly the internal weakness of a state’s economic and political function impacts the security perception and the impact of such threats on other states. Corruption and political co-optation by non-political actors are especially apparent in states that suffer from internal weakness. Criminal and shady economic structures can, with little effort, further destabilize and corrupt a weak country or a region. This promotes the production and transit of narcotics and increases terrorist/extremist behavior. This is without mentioning the environmental problems the Greater Central Asian region faces.

²⁰ Barry Buzan, Ole Waever, Jaap de Wilde, *Security: A New Framework for Analysis*, *op. cit.* pp. 21-22.

Therefore the very weaknesses of states are a crucial component in the security discussion on Greater Central Asia.

Furthermore, the need to look at the state's weaknesses is important as the impact of insecurity does not only affect the state in itself, but also the surrounding states. Holsti had argued that:

“the security between states in the Third world, among some of the former republics of the Soviet Union, and elsewhere has become increasingly dependent upon security within those states.”²¹

It is safe to point out that the cooperation regarding regional security between the Greater Central Asian states are lacking to a disturbing degree, not so much because it lacks common interest but because the national interest is primarily directed inwards rather than outwards and that there is a substantial distrust between the Greater Central Asian States.²² This failure is particularly apparent when the potential soft security threats are to a high degree transnational in character and the problems in particularly weak states spill over to other states. Afghanistan and Tajikistan are the worst affected states in this regard and the overlap of security threats and geography between these two states is disturbing. Alongside this, the Ferghana valley is a region where the trans-national aspect is apparent and increasingly problematic. Buzan has argued that states are considered to be strong when the:

“national security can be viewed primarily in terms of protecting the components of the state from outside threat and interference, and where the idea of state, its institutions and its territory will be clearly defined and stable in their own right”.²³

This would imply that strong states do not view internal issues as primary security threats because the political institutions can supposedly deal sufficiently with any internal problem to an acceptable degree. The capacity of strong states to withstand internal security issues has not included threats that are “soft” and driven by non-traditional purposes such as economic profit or environmental degeneration. Neither has it taken into account what happens when a large part of the population in

²¹ Kalevi J. Holsti, *The State, the War and the State of War* (Cambridge: Cambridge University Press, 1996), p. 15. For a more elaborate discussion of the linkage between narcotics and weak states see: Maral Madi, “Narcotics Trafficking in Weak States,” The Program for Silk Road Studies, Uppsala University, 2003, pp. 7-21.

²² Niklas Swanström, “Political Development and Organized Crime: The Yin and Yang of Greater Central Asia,” *op. cit.*

²³ Barry Buzan, *People, States and Fear* (New York, Harvester Wheatsheaf, 2nd ed. 1991), p. 100.

another state is forced to move due to drought (such as the Aral Sea issue). It also fails to take into account economic deprivation, the abuse of narcotics, the corruption of the state apparatus, and that the level of criminality and health costs rise whilst productivity decreases. This is a situation that is present in many of the Greater Central Asian states albeit to varying degrees, and the situation will undoubtedly be worse in states that exhibit a greater frequency of such problems.

In the weaker states in Greater Central Asia, loose socio-political cohesion and internal challenges to the legitimacy of the government have lead to endemic political instability, and in some cases, to internal military defiance of the state structure. Thus, these weak states are more vulnerable to the internally generated threats than strong states, and their primary objective is to consolidate their internal stability (and political control), rather than focusing on threats originating from other states. Ayoob has argued at a general level that the “major concern – indeed – obsession” of elites of developing states “is with security at the level of both states structures and governing regimes”.²⁴

Weak states are therefore (to a higher degree than strong states) preoccupied with the possibility to stay in power, in an often undemocratic system, and are willing to go to great lengths to accomplish this. The often forceful action against domestic opposition or even perceived opposition is common in Greater Central Asia. Financial support (corruption) is one of these means to stay in power and weak political leaders seek resources to hold on to their power. In 2005, the people behind the Kyrgyz revolution were financed by means of drug money.²⁵ This would, if the allegations are true to any extent, put the current regime in an inter-dependant relationship with narcotics dealers that threaten their internal, as well as international, legitimacy. Such security threats come in a wide variety of shapes but the common denominator is that it could threaten the stability (power) of the regime in power. Afghanistan is, of course, a clear-cut case where the narcotics industry has become the primary industry in the country, and has seeped into the core of the institutions and power relationships present there.²⁶ This is a situation the international community is all too aware of.

This said, the existence of weak states cannot explain all aspects of the lack of security in the region. As one example, the international narcotics trade as a phenomenon is prevalent in all states of the world

²⁴ Mohammed Ayoob, *The Third World Security Predicament: State Making, Regional Conflict, and the International System*, *op. cit.*, p. 4.

²⁵ Svante Cornell and Niklas Swanström, “Kyrgyzstan’s “Revolution”: Poppies or Tulips?” *Central Asia-Caucasus Analyst*, May 18, 2005.

²⁶ Samuel Chan, “Breaking the Impasse in Afghanistan: Problems with Neighbours, Brothers and Guests,” *op. cit.*; Niklas Swanström, “The Narcotics Trade: A Threat to Security? National and Transnational Implications,” *op. cit.*

today and states are affected by the consequences of narcotics regardless of the degree of political cohesion. It could however be argued that the production and transit of narcotics are more prevalent in weak states or regions as there are fewer control mechanisms, and the political elite is relatively easy to co-opt (for example the war lords in Afghanistan, the North Korean government, the Tajik and Turkmen elites and the militants in Burma). Another hypothesis, which connects back to weak states, is that the transit routes would primarily be drawn through relatively weak states as corruption and political co-option would decrease the transaction costs for the criminal networks. Similarly, many of the new security threats, and old, thrive in weak states and economies.²⁷ This is because weak states tend to have much less resources and abilities to act on soft security threats, such as the environmental challenges that are often not even seen as a serious threat or at least not the governments. This is despite the fact that water and agricultural areas are in high demand and dwindling due to poor environmental track records. The result of this is a substantial threat to the physical survival of the state or at least regions, such as the Aral Sea area. Overall, this makes weak states a growing ground for soft security threats and the spread tends to be much faster in comparison to a state with a more stable political and economic environment.

When Traditional and Non-Traditional Security Meet in Greater Central Asia

Afghanistan has emerged as the single largest producer of heroin in the world.²⁸ This basic reality has had a tremendous negative impact on the Greater Central Asian region. In fact, much of the traditional and non-traditional security threats can be directly derived from this unfortunate situation or has reinforced other security threats. Criminal co-option of the state and military instability can in simple terms be calculated from the epicenter that Afghanistan has become. The greater the distance from this hub, the less instability and criminal cooption. The situation can, of course, not be only calculated by geographical proximity as the underlying factors are more complicated than this but the heroin trade has had an undeniably negative impact on the stability of the region. China and Iran are two examples of states that border Afghanistan that hold a relatively high degree of internal state control and can effectively combat organized crime and other non-traditional security threats. Following the transit routes through Iran, Russia, Central Asia, Pakistan, Middle East, etc., there is a visible negative impact where the heroin is

²⁷ Maral Madi, "Narcotics Trafficking in Weak States," *op. cit.*

²⁸ *World Drug Report 2009* (New York: United Nations Office on Drugs and Crime (UNODC), 2009).

transited with rapid expanding criminality, epidemics (HIV/Aids and Hepatitis C) that follow intravenous usage and military tension.

The arch of instability is primarily derived from a few states in the vicinity of Afghanistan, but there is serious spillover to other neighboring states. The weakness of the Afghan, Tajik and Kyrgyz economies and political systems make them easy targets for the criminal networks, and have emerged as three of the most corrupt states according to Transparency International. In fact, all states within the Greater Central Asian region receive a dismal score. For example, Kazakhstan (on the high end) receives the score 2.2 (of 10) which indicates rampant corruption and Afghanistan receives 1.5, which is the fifth lowest score in the world.²⁹ Moreover, there are very few effective institutions in the worst affected states where the law enforcement institutions are weak. Social, educational, and health institutions are also in the worst perceivable condition and government institutions (at large) are in a very poor condition. The lack of effective institution building and rampant corruption in these states make any effective management of security threats very difficult. Threats that are not considered central to the survival of the government, such as environmental protection or widespread health programs are excluded from the list of security threats that need to be handled.

As a result, security threats of different kinds have emerged in the region to an unprecedented level in the worst affected states, but the impact is felt to some degree in all regional states. Due to the fact that the states are weak and have very little impact on the security situation, there are huge domestic security problems. This is especially evident in the areas outside of the major cities that the central government has lost control of, or lost interest in, especially if minorities or opposition controls the area.³⁰ The government institutions and influence therefore often fails to impact the regions outside of the capital, at least in a positive manner. This is particularly true in minority regions and regions that are considered to be less important to the ruling elite for other reasons. This has cemented a center-periphery cleavage that furthers the division of the countries in question and alienates the governments from its people. This is something that is noted in all Greater Central Asian states, albeit it is more pronounced in the weaker states. There is not a single country that has not felt the impact of regional tension and preferential treatment of certain region, cities and groups over others. Politically and socially, this is a major issue but the problem does not end

²⁹ Transparency International, Corruption Perception Index: <http://www.transparency.org/>.

³⁰ Niklas Swanström and Nicklas Norling, "The Shanghai Cooperation Organization: Trade, and the roles of India, Pakistan and Iran," *Central Asian Survey* 26, 3 (2007): 429-444.

with these factors. The economic consequences are arguably even more important as it threatens the economic sustainability of the countries in question and pits the less affluent regions against the more affluent.

In fact, trade and investments are largely done between capitals and major cities while many of the regional cities are left outside of the economic and social development, if there is any legal economic development to speak about.³¹ This has not only created a division between capitals and other areas, but has also reinforced a growing radicalization of the political life. Much of the radicalization we see today has its roots in the failure of the regional governments to act and provide security for an individual's economic and social development. Islamic radicals and drug dealers have in many ways become the security provider, or at least prospective, that the state should be and in exposed areas the only economic development worth talking about is derived from organized crime.³² The failure of the regional government to act is not only derived from lack of interest and greed, but also in the government's ability to act, or lack thereof. Due to weak government structures, institutional corruption and historical luggage inherited from the Soviet occupation, many regional governments cannot act effectively, and are less dependent on the ruling party and more on the inherent weakness of its institutions.

Weak infrastructural investments have emerged as a major problem in Greater Central Asia. This does not only fail to integrate the different states and the region as a political entity, it decreases the chance of stable long-term economic development. External, as well as internal, investment and trade fails to reach all areas of the region and excludes large groups from the advantages of economic development. It also takes out large consumer markets and prevents growth. This will have damning effects for the development of security for all areas of Greater Central Asia. This is also true when it comes to health and educational institutions that are, as a rule of thumb, worse off in the peripheral areas, something that often is true also in developed states, but the differences are devastating in this region and causes real security challenges for the population at large.

³¹ Karen Dawisha and Bruce Parrott, *Conflict, Cleavage and Change in Central Asia and the Caucasus* (Cambridge: Cambridge University Press, 1997); Niklas Swanström, Svante Cornell and Anara Tabyshalieva, *A Strategic Conflict Analysis of Central Asia with a Focus on Kyrgyzstan and Tajikistan*, Report to Swedish International Development Cooperation Agency, June 2005; "Tajikistan: On the Road to Failure," Asia Report No. 162, *International Crisis Group*, February 12, 2009; "Kyrgyzstan: A Faltering State," Asia Report No. 109, *International Crisis Group*, December 16, 2005; "Kyrgyzstan: A Deceptive Calm," Asia Briefing No. 79, *International Crisis Group*, August 14, 2008.

³² Niklas Swanström, "Political Development and Organized Crime: The Yin and Yang of Greater Central Asia," *op. cit.*

Lack of economic growth in the Greater Central Asian region, with partial exceptions of some major cities and specific areas such as the energy sector, have emerged as one of the largest threats against stability. Social and economic deprivation has increased the dissatisfaction with the state and its institutions with major upheavals as a result. Moreover, they turn to organizations and structures that offer alternatives, regardless of the radical and utopian goals or even accepting protection and support from criminal interests. As mentioned earlier, organized crime is the provider of socio-economic stability and development in many regions and states and in Kyrgyzstan organized crime played a critical role in the political changed in 2005. The failure of state structures to provide economic development has raised internal levels of dissatisfaction and promoted the emergence of militant organizations/or criminal organizations. People seek alternatives to sustain themselves and their families, or they simply leave the region to seek a better life.

The result has been that the remittances from migrant laborers (primarily men) from Uzbekistan, Kyrgyzstan and Tajikistan account for between 8 and 50 percent of the legal national income.³³ This exodus of these laborers will not decrease during the economic crisis, unless Russia (where most emigrants go) imposes severe restrictions on immigration. If this would happen, it would not only have devastating effects on the economy, it would also increase unemployment catastrophically and potentially increase radicalization of the society. It is unlikely that migrant laborers would return home voluntarily, as the feeling is that their own state offers none or very small opportunities for their social and economic development. However, in tough economic times the labor force has been partially forced back, primarily from Russia, with possible social tension as a result.³⁴

Fundamentalism has increasingly become a serious threat to all states in the region, Afghanistan naturally suffers primarily from this due to the long-term instability and the dominant position of organized crime but the problem is more widespread. Much of the problem lies in the growing unemployment; weak government sponsored health care, social welfare at large, as well as a lack of belief in the future. Radicalization of all working and failing institutions in the weak states are underway in the region and the development will over time (if this level of development continues) will be the alienation of Greater Central Asia not only from the West but also from India, China and Russia. This would be due to rampant corruption, instability and radicalization. However, alienation is not the only problem. The potential development of alternative economic and political structures may be less promising

³³ Erica Marat, "Labor Migration in Central Asia: Implications of the Global Economic Crisis," Silk Road Paper, *Institute for Security and Development Policy*, 2009.

³⁴ *Ibid.* p. 41.

than the current institutions if the following governments are radically oriented. There also seems to be only a remote, if even that, reason to wish for better economic development and political participation under more radicalized governance.

Traditional security issues, that is, military threats to the government, follows the so-called soft security threats. Today, we can see a network of militants in the southern part of Greater Central Asia, especially in Afghanistan, Tajikistan and Uzbekistan posing soft security threats even if the phenomena is spread all over the region and beyond. Much of the problem is that the militants derive their appeal, strength and freedom of operation from the soft security threats that the governments have failed to act on. The social and economic deprivation gives extremist organizations a reason to act militarily against a government which they perceive as corrupt. This corruption is present, and would also most likely remain even if there was a change of government. This is because it is imbedded in the system. The current socio-economic situation in the region has legitimized many radical organizations actions against the government. These organizations can be openly militant like the Taliban and the IMU or less open, like Hizb-Ut-Tahrir.

Militant movements have tapped into the tremendous economic resources of organized crime (more specifically the heroin market, but also weapons, human trafficking etc). In fact, to a great extent, organized crime and militant organizations are highly compatible.³⁵ This is especially true after 9/11 when state sponsored terrorism dwindled and they had to seek other revenues. Organized crime reaps great benefits from unstable governments and conflicts and it has become a real policy problem for many states in and outside of the region.³⁶ IMU is one of the examples on where an organization has thrived on organized crime, even to the extent that IMU cannot today be called a political organization only, but are heavily involved in organized crime and in particular heroin smuggling.³⁷ Very few political changes, militant or non-militant, can be accomplished in Greater Central Asia without a strong connection to organized crime. We did see that the political change in Kyrgyzstan was directly supported by the criminal networks. That is, narco-traffickers from the south of Kyrgyzstan and in particular

³⁵ Ron Chepesiuk, "Dangerous Alliance: Terrorism and Organized Crime," *The Global Politician*, September 11, 2008, <<http://www.globalpolitician.com/23435-crime>> (April 20, 2010); LaVerle Berry, et al., *Nations Hospitable To Organized Crime And Terrorism*, Federal Research Division, U.S. Library of Congress, October 2003, <www.loc.gov/rr/frd/pdf-files/Nats_Hospitable.pdf> (April 20, 2010).

³⁶ Interviews in 2007-2009 with drug enforcement and military agencies in Greater Central Asia and states neighboring.

³⁷ Svante Cornell, "Narcotics, Radicalism and Armed Conflict in Central Asia: The Islamic Movement of Uzbekistan," *Terrorism and Political Violence* 17, 4 (2005): 577-597.

the Osh region.³⁸ Increasingly there is a problem differentiating between the pure fundamentalist and criminal organizations, because they overlap and benefit from each other's strong points (social legitimacy and financial strength respectively). Overall, there is an increasing problem in differentiating between the different security threats in the region. This is because they tend to overlap and reinforce each other, not only via a merger of criminal and militant organizations, but also through regional instability and lack of security. In the footsteps of organized crime and militants are devastating effects on human health, the environment, as well as the legal economy.

The merger of weak states, old and new security threats in Central Asia weakens government structures even more and is truly a vicious circle. The government's inability to effectively combat soft security threats "legitimizes" the usage of military violence against the government. Moreover, the continued and long-lasting conflicts that we have seen in southern Greater Central Asia have had devastating effects on social and human security. Increased violence and criminal co-option has decreased resources to health and education; resources that focus on keeping regimes in place and sustain the very little control they have. Financial and human resources to health, education and social security at large has dwindled in most states in comparison to military expenditure and good old fashion corruption.

Implications on Energy and Environmental Security

The overall security situation in Greater Central Asia has much to wish for and the region can only be termed unstable with a side of serious security deficits. China holds a stronger grip on the security in Xinjiang, even if we saw some disturbances there in 2009, and Kazakhstan emerges as one of the more stable states in the region despite tendencies for political and economic instability. This makes the security situation problematic in all aspects and the security threats to both energy and the environment are serious. This is especially evident in the southern part of the region.

Criminal co-option and rampant military instability in the southern part of Greater Central Asia have spilled over to other states in the region and there is a potentially growing degree of extremism and dissatisfaction with the regional governments. This is not a new trend but a long-term development that was initiated decades ago. However, with the destabilization of Afghanistan and the fact that it has become the epicenter of instability in the region, the situation has become much worse. There is no easy solution to this problem and it will take great

³⁸ Svante Cornell and Niklas Swanström, "Kyrgyzstan's "Revolution": Poppies or Tulips?" *op. cit.*

regional and international efforts to turn the situation around. Efforts that are not necessarily believed to be necessary until the situation becomes worse and directly affects the West and China much more directly than it does today. Part of the solution to the problem is in increased international assistance in establishing functional institutions such as police, legal, and customs but also in presenting economic alternatives to organized crime and political alternatives to increased radicalization. This would force the international community to commit both tremendous economic and political resources, resources that will not be there in times of international economic instability.

The environment is more affected than the energy sector as energy is seen as something more lucrative and more serious than simply a green policy. Energy transit and production generates financial resources, whereas environmental policies only decreases financial resources, or at least that is what many assume. There is very little consideration, except for the extreme cases such as the Aral Sea, for the impact other security threats have had on the environment or what security impact the environment could have. Heroin cultivation has had devastating effects on the environment in Latin America (the only region where this has been measured), which was done through the pollution of rivers and soil by the chemicals used in the refinement process of narcotics.³⁹ As Afghanistan produces 94 percent of the worlds' heroin, it can be safely assumed that a generous amount of chemicals has polluted the wildlife, as criminal networks are not exactly renowned for their environmental policies. In both cases, it is evident that social and economic instability have had huge negative impacts. Alongside this, transit routes for oil and gas in southern Greater Central Asia are limited and expensive due to this instability. Similarly, the instability in the region has made environmental programs difficult, despite the fact that the conflicts have increased the need for such endeavors.

The solution is not necessarily simply to establish democratic and free trade oriented governments today, as they would succumb under the devastating conditions they would have to rule in, but rather in strengthening the basic foundations of the region and the states. This is not an easy task because much of the economic control today in some regions is inter-twined with organized crime. However, by increasing trade with all parts of the region through improved infrastructure would potentially decrease the base for radicalization and extremism and offer alternatives to organized crime. This needs to be done in coordination with intensified work against organized crime and militant groups, with military means if necessary. SCO will have a role here with a firm

³⁹ Niklas Swanström, "The Narcotics Trade: A Threat to Security? National and Transnational Implications," *op. cit.*

guiding from China, but the organization is severely hampered when dealing with these issues. This is because Russia does not benefit from multilateral cooperation with regards to energy, and there are also strong interests in Russia that benefit from increased instability and narcotics trafficking. Moreover, the Central Asian state has a poor track record with regards to cooperation. Even so, China needs to come up with fresh ideas on ways to proceed. This should, of course, be done in cooperation with the rest of the international community.

Conventional Security Risks to Central Asia: A Summary Overview

Paul Quinn-Judge^{*}

ABSTRACT

This paper briefly outlines the conventional threats to the security of the five former Soviet states of Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. It also attempts to identify the common features contributing to insecurity in the region. It will then discuss possible scenarios in two countries which are at particular risk of serious instability: Uzbekistan and Tajikistan. The paper then devotes some space to the new and quite disturbing threat to regional insecurity - the growing risk of a spillover of insurgency into the region from Afghanistan.

Keywords • Security Threats • Infrastructures • Corruption • Taliban • Civil War • Insurgency • Islamic Movement of Uzbekistan (IMU) • Northern Distribution Network

The Backdrop

Government officials and analysts specialising in Central Asia increasingly describe the five states as brittle or fragile. “Hollow” might be a better term. They have the trappings of a normal government - ministries, legislatures, in some cases even opposition parties. In many cases, however, they pay little more than lip service to the fundamental requirements of government, such as the provision of basic services to the population. Most of the states are affected to a greater or lesser degree by an inversion of values: their primary concern is wealth creation and preservation for the ruling elite; security is largely viewed as security for those elite, not for the populace at large. Lower level corruption is endemic and officially tolerated.

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This situation has been in place essentially since the collapse of the Soviet Union. So far the countries of the region have muddled through, with a little help from commodity prices, foreign aid, good luck and a tendency of the rest of the world to ignore them. All these factors are, to a greater or lesser degree, changing.

Overview: Common Regional Features

Political and Economic

- *Institutional fragility and built-in unpredictability of political structures:* All are authoritarian; most are ruled by aging and corrupt leaders who preside over narrow, usually family-based elite that is increasingly fixated on its own political survival.
- *Absence of a transparent succession mechanism:* In four of the five countries a strong indication that the current leader is looking to a member of his family to take over power. The exception is Turkmenistan, where the current leader seems, however, to be creating a new version of the personality cult erected by his predecessor, Sapurmurad Niyazov, Turkmenbashi
- *Poor infrastructure:* Soviet-era physical infrastructure, poorly maintained since independence, is now grinding to a halt. This is increasingly aggravated by institutionalised corruption, and clear indications of environmental deterioration. This is particularly disturbing in Tajikistan. So far the clearest sign of infrastructural decline in the region as a whole has been in the power-generating sector. The next sector to be seriously affected, however, is likely to be education, as the last of the Soviet-trained teaching professionals retire.
- *Elite looting of state resources:* Looting by the ruling elites of the exchequer, natural resources, remaining viable parts of the national infrastructure. This is usually accompanied by tight control over the most profitable sectors of the economy and often by extortion from or expropriation of more successful businesses.
- *Lack of a functional, recognisable economy in most of the region:* Most rely on one or two sectors to fill the exchequer. This is migrant labour in the case of Tajikistan (over 40 percent of the GDP), Kyrgyzstan (30 percent) to a lesser degree Uzbekistan. Other regional countries depend largely on raw material exports - gas and oil in the case of Turkmenistan, gas, oil, uranium and coal for Kazakhstan; cotton and some gas and oil for Uzbekistan.
- *International economic crisis:* The international economic crisis has been slow in making an impact on the region, but is doing so now. Tajikistan and Kyrgyzstan will probably be hit especially hard, as

they tend to survive hand to mouth, hoping for handouts from international organisations and governments. The chances are high that additional funding from base issues in Kyrgyzstan will be quickly absorbed by corruption. Kazakhstan's dream of being a major middle-tier political player will, at the very best, be pushed back a number of years. A possible, widely predicted, second wave of economic crisis in Russia could have a serious impact on the region.

- *Weakest links:* Two countries look particularly vulnerable at the moment - Uzbekistan and Tajikistan. Kyrgyzstan may not be far behind, though any instability here is more likely to be triggered by events in neighbouring countries rather than at home.

Negative Security Factors

- *War in Afghanistan:* With the Taliban already on stretches of Afghanistan's border with Central Asia and the U.S. banking heavily on the region for resupply, there is a strong risk that the Afghan war may spread north, into Tajikistan and beyond. The re-infiltration of Central Asian Islamist insurgents from their bases in Pakistan and Afghanistan has already begun.
- *Role of the U.S.:* Greater U.S. involvement in the region as support of the Afghan war effort may further weaken reform: Most, if not all, of these reforms are alive in public pronouncements rather than reality. A number of regional leaders - Tajikistan and Uzbekistan in particular - clearly hope that U.S. involvement in its current form will both freeze the political status quo and provide new sources of financial support.
- *Frontier issues:* Long, poorly policed frontiers that are incapable of preventing spillover from the war in Afghanistan, and independently of this could themselves prove a flashpoint for intra-regional conflict. Tajikistan has 1200 km of borders with Afghanistan, for example, and Turkmenistan 744 km. If major violence were ever to break out in Uzbekistan, its 6000-plus kilometers of borders with Tajikistan, Kyrgyzstan, Kazakhstan and Turkmenistan could become the scene of local clashes and/or large spontaneous concentrations of displaced persons, seriously overstraining fragile infrastructures, particularly those of Tajikistan and Kyrgyzstan.
- *Elite co-option:* The widespread involvement of the political and security elites in all countries, and the ruling families in several states, in the transport of narcotics from Afghanistan to Russia, China and Europe. As a former governor of one of the region's more important provinces put it, "Those who control power

control the drugs.” Enough stays in the region to contribute to growing addiction and HIV/AIDS.

- *Inter-connectedness of the five states:* Major problems in one country can very quickly affect the others. No country has developed the political or institutional resilience that would guarantee it against a crisis spilling over from a neighbour. A security breakdown in Tajikistan will have immediate implications for Kyrgyzstan and Uzbekistan, and shock waves would quickly reach Kazakhstan and Turkmenistan. The collapse of central power in Uzbekistan would likewise have a profound impact on the whole of Central Asia. Economic - or environmental - collapse anywhere in the region will almost certainly trigger large and potentially destabilising population movements.

Countries at Particular Risk: Tajikistan and Uzbekistan

Tajikistan

Tajikistan is increasingly being written off by its neighbors and even officials in major capitals. Senior Kyrgyz and Kazakh officials have recently both essentially dismissed the country’s chances of pulling itself out of its deep economic and infrastructural crisis. Senior western officials do not challenge the assessment that Tajikistan is sliding into the category of a failed state. Some specialists believe that the further decline will be slow and silent and largely unnoticed by the outside world. This could well be triggered by environmental degradation, compounded by the country’s growing vulnerability to outbreaks of disease as a result of the sharp decline of the health system.

There are other less quiet scenarios. Over 40 percent of the population is unemployed or underemployed. In response to this, the government has actively encouraged almost half of its labour force to work in Russia and Kazakhstan, mainly in the building and small retail sector. Their remittances last year provided over 40 percent of the country’s GDP, and added to the considerable wealth of the president’s relatives, who control much of the banking and transport sectors. In the wake of the world economic crisis, the IMF estimated recently that remittances would drop by some 35 percent. The outflow of migrant labor is widely seen as the security valve that has kept the country quiet in recent years. Migrant laborers are viewed within Tajikistan as the most enterprising and energetic part of the population - the people who might be inclined to come out onto the streets to protest if they remained at home. This belief could well be tested if the opportunities for work abroad remain sharply limited for the next couple of years.

The president meanwhile seems at times to have overtly abdicated responsibility for his people. In one recent public pronouncement he called on Tajiks to build up two years of food supplies “in order to soften the impact of the crisis in various spheres of the life of the state and the people.”

Uzbekistan

Uzbekistan is generally viewed within the region, with some plausibility, as a cataclysm waiting to happen. Senior Kyrgyz and Kazakh officials are, for example known to be very pessimistic about the country’s future, and concerned at the impact unrest there would have on their states. The Tajik view is perhaps even darker. The working assumption among analysts and senior officials of the neighboring states is that sooner or later, the draconian, tightly-coiled security system created by Islam Karimov will blow. This could happen tomorrow or in 5 years: nobody knows. Karimov has been rumoured to be seriously ill for at least the last ten years, but there has not been convincing proof of this. At the moment, he is believed to favour his daughter Gulnara as a successor. The disintegration of the regime could be triggered by the president’s death, natural or otherwise, by in-fighting, or possibly by external pressure from Islamist insurgents. If Tajikistan’s slow demise will be a tragedy only for its own people, the collapse of the Karimov regime could have enormous repercussions for the region as a whole.

Possible consequences include:

- *Irredentism*: If the central power in Uzbekistan begins to weaken, the large Tajik minority - officially 5 percent of the population, but almost certainly significantly more - may agitate for more rights. The plight of ethnic Tajiks and the loss of the historically Tajik cities of Buhkara and Samarkand are constant subjects of discussion in official Dushanbe. Senior Tajik officials say that in the event of chaos in Uzbekistan, unspecified steps will have to be taken to ensure of the rights of ethnic Tajiks.
- *Secession*: The republic of Karakalpakstan, in the west of the country around the Aral Sea, is where an underground movement, Free Karakalpakstan, already exists.
- *Massive population movement in response to major unrest*: The 2005 Andijon uprising and subsequent massacre resulted in the thousands of people fleeing to or across the border with Kyrgyzstan. This seriously strained Kyrgyzstan’s resources. Replicated on a nationwide basis - or even from other cities in the Fergana valley - such movements could overwhelm the neighboring countries. They could trigger ethnic unrest,

particularly in Kyrgyzstan, where a large Uzbek population lives on the Kyrgyz side of the border.

- *Civil War*: If the Islamic Movement of Uzbekistan (IMU) and/or other Islamic forces prove strong enough to mount a military challenge.

Regional Issues

Impact of the World Economic Crisis

At the beginning of the crisis there was a facile assumption in the region that their countries were insulated from its impact. Most were barely integrated into the world economy, leading to a popular formula: no economy = no crisis.

This has not been born out by events. The region is largely an exporter of natural resources and raw materials - energy, aluminum, gold, coal, and cotton. Prices on all these have plummeted. Kazakhstan has an abundance of natural resources, and had also engaged in a massive, highly leveraged building boom to project its image in the world. It aims to be a leading middle-tier power in the medium term, and sees itself as a Eurasian, not a purely Central Asian, nation. The construction sector has collapsed, and the banks are heading in that direction.

The poorest countries rely on the mass export of their labour force to Russia and Kazakhstan. The earnings of Tajik migrant labourers - mostly in Russia and Kazakhstan, most in the building and small retail sectors - constituted, as noted earlier, about half the GDP. Kyrgyz labourers provided 30 percent of GDP, Uzbeks substantially less.

The work is not only brutal and exploitative, but also highly volatile. The chances are that even after the crisis Russia will use migrant labour as a means of rewarding or punishing Central Asian nations. The first sign of this came in July 2009 with the closure of the massive Cherkizovo market complex on the edge of Moscow. This reportedly threatened the livelihood of 10-11,000 Tajik workers as well as a good proportion of Kyrgyz goods produced for the Russian market. The Chinese sent a deputy minister to Moscow to discuss the plight of the 80,000 Chinese reportedly dependent on the market for their livelihood. Soon after it was announced that China would invest US\$1 billion in a new market. Whether the Chinese will invite other traders to join them is not known.

The Challenge at Hand: Return of the Islamic Movement of Uzbekistan (IMU)

Since the beginning of the year there have been increasing signs that the Islamic Movement of Uzbekistan (IMU), and possibly other Central Asian jihadist organisations, have once again turned their attention to

Central Asia, and are heading back home from their long-time bases in North and South Waziristan.

Islamic insurgency has a rich environment in which to develop further - corruption, official abuse and sometimes brutality, poverty, a young population, much of it unemployed, further economic decline and a growing belief, including among moderate Moslems, that some form of Islamic state has to be better than the models currently on offer. It is also reasonable to expect the emergence of new militant groups, as well perhaps the defections from Hizb ut Tahrir to Islamist movements that are prepared to confront the Uzbek.

The IMU are tough and battle-hardened, having been engaged in military operations almost full-time since their creation. The movement emerged in 1998 from organisations formed by two Islamic activists, Juma Namangani (borned as Jumabay Khodjiev) and Takhir Yuldashev, who had played prominent roles in the Fergana valley in the ferment directly preceding and following the collapse of the Soviet Union. Namangani and his supporters subsequently fought alongside the United Tajik Opposition (UTO) in the Tajik civil war (1992-1997). He and his fighters regrouped to Afghanistan following a peace agreement in Tajikistan. Veterans of both IMU and Soviet/Russia intelligence services say that the move was facilitated by the Russian and Tajik security services. The IMU played an important role in the fighting in northern Afghanistan that followed the U.S. and allied invasion of late 2001, and suffered heavy casualties, including Namangani himself. What remained of the IMU forces then moved to Waziristan, where they developed a reputation for singular ferocity. The IMU leadership is also reported to have established close ties with the so-called Pakistani Taliban and Al-Qaeda. By the middle of 2009, it was clear that the Taliban had re-established their positions along several provinces of northern Afghanistan, in particular Kunduz, the home province of Gulbudin Hekmatyar, one of the most ruthless leaders of armed opposition to both Soviet and Western coalition forces. The IMU were not far behind, and were soon reported to be establishing bases in Kunduz and adjoining provinces, and moving back across the border into Tajikistan. (It should be also noted that the Taliban are increasing their presence in provinces adjoining the border with Turkmenistan).

The broad outlines of the IMU re-infiltration route are now pretty clear: across the Pyanj River from Kunduz or Badakhshan to Tavildara - the most likely candidate for a future insurgent base area and Namangani's old area of responsibility. From there, they move further north, to the border with Kyrgyzstan - less than 100 kilometers away - or Uzbekistan. Fragmentary reports from Uzbekistan spoke recently of a firefight in Jizzakh, an area where Islamic fighters had been reported active in years past.

One early movement of armed men across the border purportedly took place in April 2009, though it was only reported in June. A group of fighters, variously said to number 40 or 100 - as usual in such matters all figures are vague, and most reports questionable - is said to have returned to the east-central district of Tavildara. Their leader was said to Mullo Abdullo (real name probably Abullo Rakhimov), a former local commander of the armed opposition during the Tajik civil war who had later thrown his lot in with Al Qaeda.

Unpublished reports assert that Islamic guerrillas have been moving through Batken region, in Kyrgyzstan. Firefights and arrests in Jalalabad and elsewhere in the south of Kyrgyzstan indicated some insurgent presence. So did a series of attacks and firefights in Uzbekistan - most recently late August in Tashkent. Interestingly, a number of alleged guerrillas detained or killed in Tajikistan or southern Kyrgyzstan - for example, some of the 18 alleged terrorists whose arrest was announced on 17 July were described as carrying out a logistical role, arranging false papers, supplies, safehouses and communications for the IMU.

There are indications of incipient concern at these developments among U.S. military and civilian officials. This concern is, however, subordinated to - and possibly sublimated by - the more widespread anxiety about the deterioration of events in Afghanistan itself. Some USG officials believe the IMU has already set up sanctuaries in Tajikistan, possibly elsewhere. Several well placed officials, meanwhile, express dismay that little work has been done so far to establish the strength of the IMU. Current published estimates from various media sources in Pakistan and the west - best taken as a psychological reflection of concern rather mathematical accuracy - range from 1000 to 5000. Just over a year ago U.S. government analysts were suggesting that the IMU had been reduced to a mere shadow of its former self. What is clear, however, is that the IMU is now very much a broad jihadist movement, pulling in Islamists from across Central Asia, the south and north Caucasus and some Moslem areas of the Russian Federation. The IMU is no longer a purely Uzbek force. Kazakh, Kyrgyz, ethnic Tatar, Dagestani, Chechen are among those arrested by Central Asian security forces in the past few months. Reports in early October that Takhir Yuldashev had been killed about two months earlier in a U.S. drone attack were quickly followed by assertions that the new IMU leader was an ethnic Tatar.

Even the lower figure cited above, if fully directed at Central Asia, could cause major problems for a number of regimes, particularly given the shift to suicide bombings as a central weapon in the guerrilla arsenal. The three main guerrilla targets are likely to be Tajikistan, Kyrgyzstan and Uzbekistan. If placed under serious pressure Tajikistan could hold on to Dushanbe and a couple of larger urban areas, quietly ceding authority to guerrillas elsewhere. One could, however, argue that it would be more

advantageous for them not to confront the government, but instead set up a discreet network of bases across the country. Other states can withstand relatively greater amounts of stress. It is important to stress the word “relatively,” however. Theft from the budget and top to bottom corruption has weakened all the states of the region. As noted earlier, the concept of security has been distorted to mean ensuring the well-being of the ruler, not the population. Corruption is indeed perceived to be especially rife in security and related structures. European and other military observers have doubts about Kyrgyzstan’s security and military structures; there seems to be especial concern about the security of arsenals and military stores.

Uzbekistan would be a tougher target. It has invested heavily in its state security apparatus. What is not certain is whether the troops are motivated enough to carry out a rolling series of Andijon-type massacres in the event of large uprisings, and how far the widespread arrests of Islamists in Uzbek society has undermined loyalty, even within the military, to Karimov. Having watched well-equipped regimes, starting with South Vietnam and the Philippines, fold in a matter of days, I would be surprised if there are many soldiers willing to die in a ditch for president Karimov.

The absolute worst-case scenario in terms of terrorism and insurgency would be a growing together of the insurgencies in Central Asia and the North Caucasus. This is not inconceivable. Central Asian guerrillas were trained in Chechnya in the late nineties and fought there in the first years of this century. Chechens have frequently been reported to be fighting in IMU units in South Waziristan. And the North Caucasus guerrilla leaders are now, like their Central Asia counterparts, Islamist internationalist in their outlook, fighting for Islamic emirates, not national liberation - and making extensive use of suicide bombers.

U.S. in the Region - A Single Dimensional Policy

The U.S. has in short order created a network of supply lines for the Afghan war effort throughout the region to supplement the increasingly unreliable and highly vulnerable Pakistani routes. As things stand, the Central Asian routes - known collectively as the Northern Distribution Network (NDN) - are intended to provide some 40 percent of the coalition forces’ needs. The other 60 percent will come via Pakistan. These figures could be reversed if the NDN proves its viability and the situation in Pakistan deteriorates further.

The creation of the NDN has been accompanied by a quiet but clear shift of policy emphasis in U.S. relations with Central Asia states. Emphasis on transparency, human rights and governance, has been sharply downgraded. A policy of quiet diplomacy, something that did not prove too successful in the past, is once again being pursued. The Uzbek

leadership for one heartily approves and now praises the Obama administration for its pragmatism. A Pentagon official summed up the new approach during a recent meeting. Criticism of the Uzbek leadership for the 2005 Andijan massacre was passé. "It's gone," he said. "Get over it."

All regional countries are involved to varying degrees in NDN. The main players at the moment are Uzbekistan, which is essentially the distribution hub of the operation, and which plays an important role in road, rail and air resupply; Tajikistan, where supplies are trucked over a USAID-built bridge on the river Pyanj, the country's border with Afghanistan to Kunduz province and thence south, the Kunduz Taliban permitting, to Kabul and onwards; and Kyrgyzstan, where the Manas base flies in large quantities of personnel and equipment, and may soon begin trucking supplies in via Uzbekistan and Tajikistan. The July 2009 base agreement, despite a change in nomenclature and some face-saving announcements by the Russians, allows Manas to function as before, without any limitation in its operations.

The supply lines, however, do not seem to be working at anything close to the predicted intensity. There appear to be particular problems with one of the main transit points, the Termez-Hairaton border crossing on the Uzbek-Afghan border. Current delays are probably due to incompetence, corruption and weak infrastructure. In the future, other problems could emerge. U.S. officials are quietly apprehensive. For example, the Central Asian hosts may use the coalition's dependence on the NDN to extract further concessions from the west. As American General Stanley McChrystal put it in his Initial Assessment of 30 August: "ISAF's Northern Distribution Network and logistical hubs are dependent upon support from Russia and Central Asian States, giving them the potential to act as either spoilers or positive influences." Other senior officials have made similar comments.

The current policy seems likely to remain in force for as long as a large coalition force remains in Afghanistan. Senior U.S. officials like deputy defense secretary William Lynn speak of this remaining a reality for the "next several years." Even if the policy of quiet diplomacy worked, which it does not seem to have done so far in the region, this would not be enough time to achieve any fundamental changes. The policy risks simply abandoning any effort to modify the behaviour of what are widely agreed to be oppressive, corrupt and in some cases brutal regimes. It places the U.S. once again firmly on the side of these regimes. It offers Central Asia jihadists an added incentive to take the war back home. And if this happens, the U.S. and NATO may face calls from their Central Asian allies for armed assistance.

But if the spread of insurgency is a potentially serious threat to the region, it is not the fundamental one. If it fails to materialise, or is

defeated, other long-festering issues - infrastructural collapse, unresponsive and corrupt government, economic crisis and environmental degradation among them - will continue to present a lasting and growing challenge to the region.

Energy and Environment Issues in Central Asia's Security Agenda

Stephen Blank^{*}

ABSTRACT

This article lays out a theory of Central Asian security policies that integrates both domestic and external security of the local states in post-Soviet Central Asia with particular reference to energy and environmental issues (including issues of water use). The author argues that energy rivalries and environmental stresses could lead to major political upheavals and inter-state conflict in the region. The current crisis over water involving Kyrgyzstan, Uzbekistan, and Tajikistan is an example of the complex relationship between domestic, external and energy security in the region.

Keywords • Central Asia • Domestic Security • Energy Security • Water Scarcity • Multi-vector Diplomacy • Regime Stability

Introduction

Many governments now recognize that climate change, major ecological transformations, and rivalry over energy supplies could unhinge international security.¹ For instance, Russia's new national security strategy forthrightly states that the outbreak of wars in the next decade in areas around Russia will derive from rivalry over scarce sources of energy.² These warnings apply with particular force to Central Asia as

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¹ John M. Broder, "Climate Change Seen As Threat To U.S. Security," *New York Times*, August 9, 2009, <www.nytimes.com>, (April 15, 2010).

² *Natsional'naya Strategiya Bezopasnosti Rossii, do 2020 Goda* [Russia's National Security Strategy, 2020], Moscow, Security Council of the Russian Federation, May 12, 2009, <www.scrf.gov.ru>, in English. It is available from the *Open Source Center Foreign Broadcast Information Service, Central Eurasia* (Henceforth FBIS SOV), May 15, 2009, in a translation from the Security Council website (Henceforth NSS).

there are no lack of environmental and energy threats in and around Central Asia. For example, the southern Aral Sea is on pace to dry up within a decade.³ More serious and dramatic challenges are also in the offing.

“In the EU estimate, climate change has already caused a shortage of water resources: Kyrgyzstan has lost over 1,000 glaciers in the last four decades; by 2050 20 percent of glaciers in Kyrgyzstan will melt, while the glaciers in Tajikistan lost a third of their area in the second half of the 20th century alone. There is thus considerable additional potential for conflict in a region whose regional challenges impact directly or indirectly on EU interests. A reduction in river levels will have a serious impact on hydroelectric power in Kyrgyzstan and Tajikistan, and on cotton production in Uzbekistan, potentially leading to tensions. Meanwhile tensions in Central Asia are mounting over river management in the Amu-Dariya and Syr-Dariya river basins between the upstream countries (Kyrgyzstan, Tajikistan) and their downstream neighbors (primarily Uzbekistan, but also Kazakhstan and Turkmenistan). Conclusion: Climate change will worsen water supply and could significantly increase the existing potential for conflict.”⁴

Obviously, the implications of such developments go far beyond Central Asia in their importance. Yet, despite CIS, UN, and EU efforts to date, there has been no real progress on resolving water use issues in Central Asia even though the problem has been known for twenty years. Instead of cooperation, we have competitive policies by the parties to these issues that only aggravate the problem as well as local tensions.⁵ Clearly those issues could become much more urgent. Alexander Bedritsky, Chief of Russia’s hydrometeorological service, has warned that global climate change could dramatically increase the risk of flooding in the Caspian coastal area.⁶ Somewhat further to the East, in China, Vice Minister of Environmental Protection Wu Xiaoqing said that the

³ “Uzbekistan: Southern Aral Sea On Pace To Dry Up In About a Decade,” *Eurasia insight*, July 13, 2009.

⁴ Yelena Ananyeva, Alexandr Annanyev, “‘Soft’ Security Is Becoming Harder,” *International Affairs* (Moscow) 55, 3 (2009): 33.

⁵ *Ibid.*, pp. 34-40.

⁶ Moscow, ITAR-TASS, in English, February 18, 2009, *Open Source Committee, Foreign Broadcast Information Service Central Eurasia*, (Henceforth FBIS SOV), February 18, 2009.

area water and soil loss in China amounted to 37 percent of its land area or 3.56 million square kilometers.⁷

Thus, both Central Asia and its adjoining areas suffer from potentially catastrophic environmental problems and energy rivalries that could lead to major political upheavals if not conflicts. But, as we shall see, rivalries and tensions revolving around water use are rising. In this connection Vladimir Kosyachenko, Deputy Chairman of Kazakhstan's Tabigat environmental union, warns that Kazakhstan faces huge and under-reported environmental crises, having to do with water shortages and air pollution.⁸ These crises could, either by themselves, or in tandem with other parallel disputes, lead to conflict among Central Asian states. As Uri Shamir, an Israeli hydrologist, has noted, "if there is a political will to peace, water is not an obstacle. If someone wants to find a reason to fight, water gives you a lot of opportunities."⁹

These challenges have long been recognized as such by both states in the region and leading world powers. Indeed, environmental issues affect the relationships not just of Central Asian states but of these states and Russia with China. For instance, China's efforts to leverage its greater power for unilateral benefit also appear in environmental policies resulting in major economic impacts. China plans to extract water from the Ili and Irtysh Rivers for Urumchi and oil field development in the Xinjiang autonomous Uyghur Region - a source of escalating inter-ethnic conflict between Han and Uyghur residents. While both rivers rise in China, the Ili passes through Kazakhstan before terminating in Lake Balkhash, and the Irtysh River travels through Kazakhstan before joining up with the Russian Ob River and Siberia. This proposal aims to stimulate Xinjiang's economy, while eroding support for Uyghur unrest.¹⁰ But it will probably fail to meet its goals, even as it links "environmental degradation and political activism, erosion of regime legitimacy, and instability."¹¹

This project will also probably generate outcomes resembling those we already see in Central Asia. Xinjiang is already the most environmentally stressed area in China.¹² This project will also negatively affect Kazakhstan, which is already involved in a host of water disputes with other neighbors in Central Asia, other environmental concerns relating to oil and gas, and the legacy of Soviet biological and

⁷ *Northeast Asian Peace and Security Network (NAPSNET)*, July 6, 2009.

⁸ *Almaty, Liter Online*, in Russian, June 6, 2009, June 6, 2009, *FBIS SOV*, June 6, 2009.

⁹ Umida Hashimova, "Fire Over Water in Central Asia," *Central Asia Caucasus Analyst*, April 9, 2008.

¹⁰ Stuart Horsman, "Water in Central Asia: Regional Cooperation or Conflict," in Roy Allison and Lena Jonson, (eds.) *Central Asian Security* (Washington, D.C.: Brookings Institution Press, 2001), pp. 79-80.

¹¹ *Ibid.*

¹² *Ibid.*, pp. 80-81.

chemical warfare (BW and CW) experiments. From Beijing's standpoint this is unfortunate. As of 2005, China had contravened both international law and bilateral agreements by not notifying Kazakhstan of its intentions and not providing environmental impact assessments. Thus, "it is evident that China is unwilling to engage in meaningful cooperation or compromise [in] the pursuit of its water demands."¹³ As China's economic power and attraction grows, Central Asian economies will naturally confront greater pressure to integrate with China and become more dependent upon it, leading to fewer constraints on China's ability to manipulate the environment to suit its own needs at others' expense. Undoubtedly this is exactly what Beijing wants.¹⁴

Security in Central Asia and Environmental and Energy Issues

Under the circumstances, how should we think about the security of Central Asia? The standard narratives see the main security threats either in the rise of the Taliban in Afghanistan and with them associated insurgent groups, or it envisions the threats to security in the prospect of state failure there due to the oppressiveness of these despotisms (which they all are). Certainly, everything about these regimes testifies to the ubiquity of what Max Manwaring of the U.S. Army War College calls, "illegitimate governance."¹⁵ Kyrgyzstan, for example, is virtually a criminal state.¹⁶ Tajikistan is not far behind, and foreign diplomats and officials in conversation with the author have referred to Russia as a mafia state. So the problem pervades Eurasia.

Criminalized states, like criminals everywhere, often secure their goals through extortion. In Central Asia we see these forces at work even if the extortion involves the threat of a state seeking resources and arguing that without them the Taliban or its allies might take over the government. Thus states deal with their problems by threatening wealthy states or international financial institutions (IFIs) that can donate or lend money to them, by invoking this threat that without funding they will fall victim to the threat of insurgency or terrorism, essentially blackmailing richer donors into acquiescence by the threat of their own

¹³ *Ibid.*

¹⁴ Guancheng Xing, "China and Central Asia: Towards a New Relationship," in Yongjin Zhang and Rouben Azizian, (eds.), *Ethnic Challenges Beyond Borders: Chinese and Russian Perspectives of the Central Asian Conundrum* (New York: St. Martin's Press, 1998), p. 47.

¹⁵ Max G. Manwaring, *The Inescapable Global Security Arena* (Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 2002), pp. 2-3.

¹⁶ Erica Marat, *The State-Crime Nexus in Central Asia: State Weakness, Organized Crime and Corruption in Kyrgyzstan and Tajikistan* (Washington and Uppsala: CACI&SRSP Silk Road Paper, October 2006); "Kyrgyzstan's Powerful Criminal Gangs," *Jane's Intelligence Digest*, February 26, 2009, <<http://www.janes.com/subscribe/jid/doc>> (April 15, 2010).

suicide.¹⁷ Of course, this particular threat perception coincides with what donor agencies already believe, so the strength of this belief facilitates the act of persuasion. Accordingly the U.S. Agency of International Development (AID), in sponsoring a community development program for Tajikistan, openly said that, "Developing social stability in Tajikistan through jobs, schools, and healthcare is the key to establishing stability and security in this critical region and preventing the rise of another Afghanistan."¹⁸

Given the cold winter in 2007-08, poverty, bad governance, economic mismanagement, etc., it argued that all the preconditions for Tajikistan to become another Afghanistan were present, hence the need for aid.¹⁹ This is by no means the only way states secure their objectives, but it points to the fact that for Central Asian governments any forum that allows them to make their voices heard to secure "rents" from abroad is valuable and positive even if there are tradeoffs that they must make to obtain those rents.

For example, Central Asian states see the Shanghai Cooperation Organisation (SCO) as more than a vehicle for Russo-Chinese anti-Americanism and for regulating those states' differences. It also is a forum where Central Asian states can express their views with more effect, either singly or collectively, than if they did so bilaterally.²⁰ Although Central Asian leaders value the utility and tangible benefits they obtain from membership in the SCO, their view of its purpose and benefits significantly differs from those in Beijing and Moscow.²¹ They see the SCO as an organization that lets them voice their interests directly and openly to China and Russia and simultaneously obtain real security benefits and material assistance from them.²² Because Moscow and Beijing have publicly and repeatedly pledged to defend the Central Asian states and regimes against internal and external pressures, the latter governments positively assess the SCO's growth. But they resist its becoming an organization whose primary mission revolves around hard security or a military bloc that restricts their freedom of action. Instead they want it as a security blanket against threats to their form of rule and as an agency devoted to mutual economic gain.²³

¹⁷ "Tajikistan: Brussels Visit Proves Lucrative For President Rahmon," *Eurasia Insight*, February 11, 2009.

¹⁸ Joshua Kucera, "Tajikistan: Pentagon Looks to Become Engine For Economic Stabilization in Central Asian State," *Eurasia Insight*, March 16, 2009.

¹⁹ *Ibid.*

²⁰ Ruslan Maksutov "The Shanghai Cooperation Organization: A Central Asian perspective", SIPRI, August 2006, text under "Project Papers" at <<http://www.sipri.org/contents/worldsec/eurosec.html>> (April 15, 2010)

²¹ *Ibid.*, pp. 8-10.

²² *Ibid.*

²³ *Ibid.*, pp. 15-18.

Another alternative security “narrative” concerning Central Asia is that the so-called “Great Game” among the great powers can cause threats to regional security. At least in the Russian case, Russian policy is clearly antagonistic to these states’ acquisition and retention of their full sovereignty as well as to democracy, which is assumed *a priori* to be the way to go forward in meeting contemporary challenges. Moscow’s efforts to forge a unified, or integrated CIS in economic and defense policies are well known and Russian leaders have long since made clear their view that the successor states to the Soviet Union are not fully sovereign states and that Russia pursues a sphere of influence policy there.²⁴

Another reason why Russian influence may prove harmful according to this line of reasoning is that Moscow and Beijing will not support any moves towards democracy in the region. This involves not merely the use of the SCO to support autocracy but a question of specific state policies like Russia’s quest for bases to forestall domestic movements for reform, the creation of a corps of election monitors that regularly affirms the democratic nature of Central Asian elections, etc. Arguably these actions may also ultimately diminish state capability to meet new challenges and eventually corrode these governments’ ability to function in meeting those challenges and thus, their security. Russian and/or Chinese policies could also lead to a diminution of sovereignty in these states making them incapable of responding to security threats and leading to their collapse.

For example, in 2007 Kyrgyzstan invited Russia to bring its border guards back to Kyrgyzstan and to expand the size of its Kant Air Base because Bishkek could not afford to raise such troops on its own.²⁵ Kyrgyzstan’s more recent support for a second Russian base in its territory, specifically near Uzbekistan, is another example of how it has outsourced its security responsibility to deal with Tashkent’s pressures to Moscow. This move left Kyrgyzstan’s own security capabilities in doubt, but Kyrgyzstan received a lot of money in doing so. Bishkek’s recent yielding to Russian pressure for a second base in Kyrgyzstan to counter the continuing U.S. presence at Manas duly exemplified this process because Kyrgyzstan chose to have that base situated in the Ferghana Valley where it could check the threatening behavior of Uzbekistan. Indeed, to a certain extent, as Anna Matveeva has noted for Tajikistan, Central Asian governments outsource part or most of the responsibility

²⁴ Stephen Blank, “The Values Gap Between Moscow and the West: the Sovereignty Issue,” *Acque et Terre* 6, 2007, pp. 9-14 [in Italian], 90-95 [in English]; Interview given by Dmitry Medvedev to Television Channels Channel One, Russia, NTV, “August 31, 2008, <http://www.kremlin.ru/eng/speeches/2008/08/31/1850_type82916_206003.shtml> (April 15, 2010).

²⁵ “Kyrgyzstan Invites Russian Border Guards, Offers To Boost airbase,” *RIA Novosti*, May 21, 2007, <<http://en.rian.ru/world/20070521/65801511.html>> (April 15, 2010).

for dealing with those issues to other states and major powers in order to retain their domestic power.²⁶ Ultimately however, the atrophying of capability to fulfill the mandate of sovereignty can have extremely dangerous and deleterious consequences, not just for the victim state, but for all those sucked into the ensuing vacuum.

Consequently, despite their visible comfort in dealing with Russia, Central Asian states view both Russia and China ambivalently with regard to the SCO. These regimes fully understand that both Russia and China are potential threats to their security-if not their sovereignty-as neither China nor Russia are shy about using their power to enforce their dictates upon Central Asian governments.²⁷ Therefore, even as they are constantly seeking resources and political support from Moscow and Beijing, they are also consistently conducting "multi-vector policies" to balance as much as is possible among powerful neighbors.

However, despite the facts that the foregoing are real threats and that Central Asian leaders regularly invoke and even exaggerate them, regularly labelling any opposition to their rule as terrorist or extremist, threats to the security of Central Asian states from regional rivalries over energy and environmental policies are just as critical a factor in their security policies as are the aforementioned threats. Nevertheless, these states are reluctant to admit to this reality for, as we shall see, Central Asian governments derive considerable tangible and intangible benefits from emphasizing these foreign or insurgent threats over the possibility of threats from economic failure or their neighbors.

Current Security Threats

The inclination to view regional security mainly in terms of this new Great Game or of the internal stability of the various Central Asian governments is an insufficient and incomplete approach. Especially now due to the protracted global economic crisis, there are good reasons for focusing not only on the threat from Afghanistan but also on internal and trans-national factors that threaten Central Asian security. Very early on in this current global crisis, it became clear that Central Asian governments were being subjected to unusual levels of stress that have

²⁶ Anna Matveeva, *EU Stakes in Central Asia*, Chaillot Paper No. 91, (Paris: Institute of Security Studies of the European Union, 2006), pp. 7-33; Anna Matveeva, "Tajikistan: Evolution of the Security Sector and the War on Terror," in Anna H. Ebnoether, Major Ernst. M. Felberhauer, and Martin Malek, (eds.) *Facing the Terrorist Challenge - Central Asia's Role in International Co-Operation* (Vienna and Geneva: Bureau for Security Policy of the Austrian Ministry of Defense, National Defense Academy, Vienna, Geneva Centre for the Democratic Control of Armed Forces in Cooperation with PIP-Consortium of Defence Academies and Security Studies Institutes, 2005), pp. 133-153.

²⁷ Marlene Laruelle and Sebastian Peyrouse, *China As a Neighbor: Central Asian Perspectives and Strategies* (Stockholm: Institute for Security, Development and Policy, 2009).

only worsened as the crisis continued. Early in the crisis, the World Bank reported that Kazakhstan was likely to suffer “severe banking disruptions” in the near future and the financial sector was already shrinking even as global credit tightening made it difficult for Kazakhstan and other states to recapitalize their financial sector through further borrowing.²⁸ Kazakhstan’s growth rate was projected to fall to 2 percent in 2009 while its unemployment rose to 8 percent, according to Minister of Economy and Budget Planning Bakhyt Sultanov. Kazakhstan also recalculated its energy income based on a price of US\$40/Barrel for oil for 2009 and US\$50 for 2010-11. If this situation came to pass, Kazakhstan’s growth would be severely diminished for at least two more years as it loses a third of its expected revenues through 2011.²⁹ The country has also devalued its currency, the Tenge.

This crisis has also led Russia and Kazakhstan to deport thousands of migrants whose remittances comprised as much as an estimated 15-20 percent of the national incomes of Kyrgyzstan and Uzbekistan. Tajikistan’s plight is even worse. In one province, Gorno-Badakhshan, remittances fell by half in the last quarter of 2008. Growth rates from Kazakhstan to Tajikistan have plummeted, unemployment has risen, and countries are relapsing into protectionism and in practice curtailing efforts at regional cooperation.³⁰ Countries that are excessively in debt to foreign lenders (e.g. Tajikistan) probably have no discernible means of paying back their debts. And countries like Uzbekistan and Turkmenistan are replying with beggar thy neighbor policies towards weaker states like Kyrgyzstan and Tajikistan.³¹ Indeed, Tajikistan has previously accused Uzbekistan of seeking to destabilize it by organizing an explosion near its supreme court.³² Kyrgyzstan’s Minister for

²⁸ Roman Muzalevsky, “Fears Of Financial System Collapse In Kazakhstan,” *Central Asia Caucasus Analyst*, January 14, 2009.

²⁹ “Kazakhstan’s Economy Set To Shrink,” *Eurasia Insight*, January 20, 2009.

³⁰ “Kyrgyzstan: National Bank Forecasts Rough Year For Kyrgyz,” *Eurasia Insight*, January 9, 2009; “Uzbekistan: Tashkent Wants To Curtail Dependency On Foreign Imports,” *Eurasia Insight*, December 18, 2008; Konstantin Parshin, “Tajikistan: Dushanbe Braces For Shock, As Remittances Set To Fall Off Cliff,” *Eurasia Insight*, December 16, 2008; Deirdre Tynan, Central Asia: Kyrgyzstan, Tajikistan, and Uzbekistan Confront A Financial Disaster,” *Eurasia Insight*, November 12, 2008; Kazakhstan: Officials Take Action To Protect Domestic Production,” *Eurasia Insight*, January 12, 2009; “Kazakhstan, “GDP Growth Slows Dramatically,” *Eurasia Insight*, January 7, 2009;

³¹ “Tajikistan: Drowning In Foreign Debt,” *Eurasia Insight*, January 12, 2009; “Uzbekistan: Tashkent Tells Dushanbe To Cough Up More Transit Fees,” *Eurasia Insight*, January 6, 23009; “Uzbekistan: Turning the Screws on Kyrgyzstan,” *Eurasia Insight*, December 15, 2008; “Kazakhstan: Astana Pushes For Regional Meeting To Address Economic Crisis,” *Eurasia Insight*, December 16, 2008; Dushanbe, *Najot*, in Tajik, December 25, 2008, FBIS SOV, December 25, 2008; “Turkmenistan: Ashgabat Turns Off Switch To Tajikistan,” *Eurasia Insight*, January 5, 2009.

³² “Tajikistan Accuses Uzbek Special Services In Organizing Blast Near Supreme Court,” July 21, 2008, <www.istockanalyst.com> (July 21, 2008).

Development and Trade, Akylbek Japarov stated in November 2008, "Our state is effectively on the verge of the financial crisis," although he was reprimanded for saying so.³³ And the effects in one country then spread to another. As Kazakhstan began to suffer, it pulled out larger and larger amounts of its investments in Kyrgyzstan that amounted to 60 percent of banks' basic assets there, triggering that financial crisis in Kyrgyzstan.³⁴ Even if these states pull through unscathed, it will take a long time for them to return even to a semblance of economic health.

As a result of this crisis, massive geopolitical changes across the globe are likely to occur. Central Asia is hardly immune to such upheavals. As Ian Bremmer, President of Eurasia Group warned:

"Sometimes the impact of geopolitical factors is substantial and at other times, it is more modest. But in the broadest context, we're entering a period in which political risk will matter more for the markets than in the recent past. --- During 2009, political risk is especially dangerous because of the intense focus on the global financial crisis. Distracted markets are less likely to price in the risks linked to the international conflict over Iran's nuclear program, dangerous instability in Pakistan, Russia's assertive, even aggressive, foreign policy, and possible large-scale unrest in Iraq as various militia groups and others rush to fill the vacuum left by departing U.S. troops and to control that country's oil."³⁵

Those risk factors that exist in Central Asia are also palpably multiplying and should be factored into any regional assessment and risk analysis as well. The conjunction of the new economic crisis, the spillover effects of the war in Afghanistan, and the precarious domestic situation in these countries could easily come together to open another front in the war against terrorism. Indeed, virtually all the CIS countries are raising their military budgets or are receiving military aid from Russia or the U.S. even as their finances are becoming increasingly strained.³⁶

³³ Robert M. Cutler, "Kyrgyzstan Steels For Slowdown," *Asia Times Online*, January 15, 2009.

³⁴ *Ibid.*

³⁵ Andrew Marshall, "Global Crisis Politics - A Davos Debate With Nouriel Rubini and Ian Bremmer," *Reuters*, January 28, <2009, <http://blogs.reuters.com/great-debate/2009/01/28/global-crisis-politics-a-davos-debate-with-nouriel-roubini-and-ian-bremmer/>> (April 15, 2010).

³⁶ Andrey Korbut, "Commonwealth Countries prepared For Defense: CIS States' Military Budget \$46.5 Billion US," Moscow, *Voyenno-Promyshlennyi Kuryer*, in Russian, January 9, 2009, *Foreign Broadcast Information Service Central Eurasia*, (Henceforth FBIS SOV), January 9, 2009.

At the same time, Central Asian surveys show widespread anger at official corruption and an ensuing profound alienation from local governments. The widespread repression of religious organizations have also generated substantial resentment, particularly among younger residents aged 18 to 30 who believe that “law enforcement agencies are not held properly accountable for their actions,” and can “operate with impunity even when they cause harm to innocent people.” Moreover, the economic crisis only adds to high rates of previously existing unemployment in Tajikistan and Uzbekistan, particularly among the youth, always the incendiary element in society. Understandably these conditions, particularly under worsening economic conditions, can cause an upheaval in key Central Asian states like Tajikistan, Kyrgyzstan, or Uzbekistan -- especially if there is a perception that government control weakens further.³⁷ Indeed, the International Crisis Group stated in 2009 that Tajikistan was on the verge of becoming a failing state.³⁸ Other analysts charge that even as Kyrgyzstan tries to balance among China, the U.S., and Russia, due to its economic failure, the country is losing its effective sovereignty to Russia in a process of “stealth desovereignization.”³⁹ Essentially, it has been forced to trade off its territory and assets like its defense industry to the highest buyer to maintain its government in power.⁴⁰ Thus, Russian aid is now covering its state deficit.⁴¹ Kyrgyzstan is not alone in this position and Russia is not the only benefactor to whom these states can turn. The program to build up small communities in Tajikistan is being funded by the Pentagon.⁴² There is also reason to believe that the U.S. and Pakistani pressure on the Taliban and their allies has forced terrorists to move back into Central Asia where they have launched more operations and thus become more exposed.

Even though these states acknowledge that they face serious external threats of terrorism and narcotics trafficking from Afghanistan which then corrupts and corrodes the socio-political fabric in their countries, those threats are second to the preservation of the domestic status quo as we again noted above. Given the increase in security tensions we see a

³⁷ Mark Kramer, “Prospects For Islamic Radicalism and Violent Extremism in the North Caucasus and Central Asia,” *PONARS Eurasia Policy Memo*, No. 28, August, 2008, <<http://ceres.georgetown.edu/esp/ponarsmemos/page/55924.html>> (April 15, 2010).

³⁸ *Tajikistan: On the Road To Failure*, International Crisis Group, February 12, 2009, <http://www.crisisgroup.org/library/documents/asia/central_asia/162_tajikistan__on_the_road_to_failure.pdf> (April 15, 2010).

³⁹ Eugene Huskey, “Foreign Policy In a Vulnerable State: Kyrgyzstan As Military Entrepot Between the Great Powers,” *China and Eurasia Forum Quarterly* 6, 4 (2008): 18.

⁴⁰ *Ibid.*, pp. 5-18; Minsk BDG Online, in Russian, July 11, 2009, FBIS SOV, July 11, 2009.

⁴¹ “Kyrgyz Deficit to Be Covered By Russian Aid,” *Associated Press*, March 17, 2009.

⁴² Joshua Kucera, “Tajikistan: Pentagon Looks to Become Engine For Economic Stabilization in Central Asian State,” *op. cit.*

heightened resort to repression which was already high.⁴³ Therefore Central Asian repression of opposition is likely to continue and even possibly increase and that was true even before the Iranian elections and the rioting in Xinjiang in July 2009. Those events will likely influence local leaders towards even more repressive measures, e.g. the Kazakh Internet law.⁴⁴ That trend, e.g. in Uzbekistan, can create other problems such as increased refugee flows to already stressed neighbors.⁴⁵ Indeed, by the spring of 2009 a mounting tide of alarm was visible throughout Central Asia in response to what looks like terrorist attacks in the Ferghana valley in Eastern Uzbekistan, a supposed Tajik anti-drug operation which looked too large to be such an operation, Russian claims that members of the Islamic Movement of Uzbekistan (IMU) were organizing underground drug networks in Russia posing originally as missionaries before getting entry into the country, etc.⁴⁶ Even before its recent presidential election which was widely derided as corrupt and undemocratic, Kyrgyzstan focused attention on one of the major Islamist challenges to the regime, the terrorist organization Hizb al-Tahrir (also known as Hizb ut-Tahrir).⁴⁷ Tajikistan emulated its example with the relatively obscure Jamaat-ut Tabligh.⁴⁸ Since then further repressions have also occurred.

But this is not the whole picture by any means. Anyone studying security issues in Central Asia quickly recognizes that environmental

⁴³ Stephen Blank, "Iran, Xinjiang, and Democratization in Eurasia: The Impact of Recent Upheavals," Testimony to the Helsinki Commission of the US Congress, Washington, D.C., July 16, 2009, <www.csce.gov> (April 15, 2010).

⁴⁴ Testimony of Stephen Blank to the U.S. Congressional Commission on Security and Cooperation in Europe (The Helsinki Commission) July 16, 2009, <www.csce.gov> (April 15, 2010).

⁴⁵ Ahror Ahmedov, "Uzbekistan: Political Persecution Prompts Increase in Refugees," *Eurasia Insight*, May 28, 2009.

⁴⁶ Moscow, *Interfax*, in English, May 19, 2009, FBIS SOV, May 19, 2009; Farangis Najibullah, "Uzbek Attacks Trip Alarm Bells in Ferghana," *Radio Free Europe Radio Liberty*, June 12, 2009; Farangis Najibullah, "Threat of Taliban Incursion Raised in Central Asia - Again," *Radio Free Europe Radio Liberty*, June 12, 2009; "Uzbekistan: Suicide Bombing in Andijan ups the Ante For Karimov," *Eurasia Insight*, May 27, 2009; Deidre Tynan, "Uzbekistan: Kyrgyz Officials Deny Islamic Militant Raids Originated in Kyrgyzstan," *Eurasia Insight*, May 27, 2009; "Tajikistan: Are Islamic Militant Trying to Make a Comeback in Central Asia,/" *Eurasia Insight*, May 26, 2009; "Uzbekistan: If the Taliban Falls in Pakistan, Is the Ripple Felt In the Ferghana Valley,?" *Eurasia Insight*, May 26, 2009; Viktoriya Panfilova, "Tanks have Entered Uzbekistan's Khonobod," Moscow, *Nezavisimaya Gazeta*, in Russian, May 27, 2009, FBIS SOV, May 27, 2009; "Militant Attacks Strike Eastern Uzbekistan," *Jane's Intelligence Weekly*, June 3, 2009, <<http://jjiwk.janes.com>> (April 15, 2010); Dushanbe, *Asia-Plus*, in Russian, May 21, 2009, FBIS SOV, May 21, 2009.

⁴⁷ Open Source Committee Report, "Kyrgyzstan - Government Focuses Attention On Hizb al-Tahrir," *OSC Report*, in English, January 13, 2009, FBIS SOV, January 13, 2009.

⁴⁸ Farangis Najibullah, "Tajiks Target Obscure Islamic Group for Prosecution," *Radio Free Europe Radio Liberty*, May 14, 2009.

factors -- the use and control of land, water, energy, and other raw materials, and the reclamation of polluted lands -- play an extremely important role in that region's security and political agendas.⁴⁹ Indeed, struggles to define new uses for hydropower in and around Central Asia have been or are being caught up in this geopolitical rivalry among the great powers.⁵⁰ High-ranking American analysts and officials (at least before 9/11) and more recently Australian scholar Kiril Nourzhanov have grasped that the non-military issues of security are very important here. In 1999, S. Frederick Starr, Director of Central Asia-Caucasus Institute at Johns Hopkins University's Nitze School for Advanced International Studies, wrote that,

“For a region of desert and steppes, conflicts over the allocation of scarce water resources are inevitable and pose the single greatest threat to regional security. Water will become increasingly scarce in the years to come. Salinity in the Khorezm region of Uzbekistan and Turkmenistan has caused the prevailing west-east winds to sweep up tons of salt and carry it to the Tien-Shan Mountains and the Pamirs. Deposited on the high mountain moraines, this salt is gradually melting the massive glaciers that are the source of water for the entire region.”⁵¹

Soon afterwards, General Anthony Zinni (USMC Ret., then commander of the United States Central Command (USCENTCOM) whose area of responsibility (AOR) included Central Asia) stated that, “The region suffers from the horrific environmental legacy of the Soviet

⁴⁹ *Ibid.*

⁵⁰ Federal Document Clearing House, Statement of Richard Boucher, Assistant Secretary Bureau of South and Central Asian Affairs U.S. Department of State Committee on House International Relations Subcommittee on Asia and the Pacific, May 17, 2006; Assistant Secretary of State Richard A. Boucher, “The U.S.-India Friendship; Where We Were and Where we’re Going,” Remarks at the Confederation of Indian Industries, New Delhi, April 7, 2006, <www.state.gov/p/sca/rls/rm/2006/4320.htm> (April 10, 2010); Assistant Secretary of State Richard A. Boucher; “Remarks at Electricity Beyond Borders: A Central Asia Power Sector Forum,” Istanbul, Turkey, June 13, 2006, <<http://www.state.gov/p/sca/rls/rm/2006/67838.htm>> (April 10, 2010); “Electricity Relights Washington’s Central Asian Policy,” *Jane’s Foreign Report*, June 29, 2006, <http://www4.janes.com/subscribe/frp/doc_view.jsp?K2DocKey=/content1/janesdata/mags/frp/history/frp2006/frp70038.htm@current&Prod_Name=FREP&QueryText=>> (April 10, 2010); Joshua Kuchera, “USAID Official Outlines Plan to Build Central-South Asian Electricity Links,” *Eurasia Insight*, May 4, 2006, www.eurasianet.org; Joanna Lillis, “Central Asian Leaders Seek To Improve Regional Cooperation,” *Eurasia Insight*, September 7, 2006; M.K. Bhadrakumar, “Moscow Making Central Asia Its Own,” *Asia Times Online*, August 24, 2006.

⁵¹ S. Frederick Starr, *The Security Environment of Central Asia*, The Emirates Center for Strategic Studies and Research, Emirates Lecture Series, Abu Dhabi, UAE, 1999, p. 9.

Union. The Department of Defense (DoD) is focusing on water-related problems in the region. Water, not energy, probably will be the cause of conflict in the region within five years.”⁵² This did not turn out to be the case, but the potential for such conflict, as we shall see below, remains very high. Because of this high potential for conflict we can easily imagine scenarios of military conflicts within Central Asia, either among the local states, or involving foreign armed forces, over control and regulation of energy sources or environmental issues like water.

Kirill Nourzhanov's recent analysis of Central Asian threat perceptions highlights the threats that exist within the former Soviet republics of Central Asia and builds on Starr and Zinni's as well as other writers' insights. Nourzhanov notes the need to break away from a Western-derived threat paradigm that sees everything in terms of the great power rivalry commonly called the New Great Game and the main internal threat to regimes, namely insurgency.⁵³ While these threats surely exist, they hardly comprise the only challenges to Central Asian security. Thus he writes that,

“Conventional security problems rooted in border disputes, competition over water and mineral resources, ubiquitous enclaves and ethnic minorities, generate conflict potential in the region and are perceived as existential threats by the majority of the local population. One of the very few comprehensive studies available on the subject arrived at the following conclusions: 1) relations among the countries of Central Asia are far from showing mutual understanding on the whole range of economic issues; 2) the most acute contradictions are linked to land and water use; and 3) these contradictions have historical roots and are objectively difficult to resolve, hence they are liable to be actualized in the near future in a violent form.”⁵⁴

This is not just another academic analysis. In fact, border problems, mainly between Uzbekistan and all of its neighbors, have long impeded and continue to retard the development of both regional security and prosperity.⁵⁵ Indeed, it is not too far to say that given the antagonism

⁵² General Anthony Zinni (USMC), *Keynote Address*, National Intelligence Council, *Central Asia and the South Caucasus: Reorientations, Internal Transitions, and Strategic Dynamics, Conference Report* (Washington D.C.: National Intelligence Council, 2000), p. 10 (Henceforth NIC Report).

⁵³ Kirill Nourzhanov, “Changing Security Threat Perceptions in Central Asia,” *Australian Journal of International Affairs* 63, 1 (2009): 94.

⁵⁴ *Ibid.*, p. 94.

⁵⁵ Chingiz Umetov, “Uzbekistan-Kyrgyzstan: Border Hassles Abound,” *Transitions Online*, May 4, 2009, <www.tol.cz> (April 15, 2010).

between Uzbekistan and its neighbors, especially Kyrgyzstan and Tajikistan, hostile relations and even the use of force is never far from a possibility.⁵⁶ And that certainly is the case today if one looks at Uzbekistan's ties to Kyrgyzstan. Nourzhanov is not alone in calling for this new approach to regional security. As Starr noted,

"On the other hand this perspective on Central Asian security or the second alternative of seeing it in the context of local governments' internal stability is arguably incomplete. Anyone studying security issues in Central Asia quickly recognizes that environmental factors -- the use and control of land, water, energy, and other raw materials, and the reclamation of polluted lands -- play an extremely important role in that region's security and political agendas."⁵⁷

Similarly the International Crisis Group likewise concluded that the international community must urgently approach the issues of border delimitation with more urgency than before.⁵⁸ Anyone looking at Central Asian security can readily see that tensions over borders, particularly between Uzbekistan and its neighbors, generate constant inter-state tensions in Central Asia.⁵⁹

As a result of these trends a regional arms race has taken root in Central Asia. In 2007 alone military spending in Kazakhstan, Uzbekistan, and Turkmenistan rose by 48 percent.⁶⁰ As Nourzhanov further notes,

"The bulk of the money would be spent on heavy weapons, fixed-wing planes, and navy vessels which is hard to explain by the demands of a fight against terrorism alone. Remarkably, the danger of intra-regional armed conflict is not seriously analyzed in any official document. The current Military Doctrine of Kazakhstan (2000) which talks about the tantalizingly abstract 'probability of diminished regional security as a result of excessive increase in qualitative and

⁵⁶ By June 2009 Uzbekistan had again closed its borders with Kyrgyzstan and the later was digging trenches along that border while relations with Tajikistan were hardly better.

⁵⁷ Starr, p. 4; see also Roy Allison and Lena Jonson, *Central Asian Security: The New International Context*, London and Washington, D.C.: Royal Institute of International Affairs and Brookings Institution Press, 2001 is an exception in this regard.

⁵⁸ Kirill Nourzhanov, "Changing Security Threat Perceptions in Central Asia," *op. cit.*, p. 94.

⁵⁹ Chingiz Umetov, "Uzbekistan-Kyrgyzstan: Border Hassles Abound," *op. cit.*

⁶⁰ Kirill Nourzhanov, "Changing Security Threat Perceptions in Central Asia," *op. cit.*, p. 95.

quantitative military might by certain states', may be regarded as a very partial exception that proves the rule."⁶¹

Much evidence corroborates this last point. For example Kazakhstan has increased defense spending by 800 percent in 2000-07.⁶² And the state defense order is expected to double in 2009.⁶³ Indeed, the trend towards militarization was already evident by 2003.⁶⁴

Nourzhanov also notes that Central Asian leaders have put themselves or been put in an impossible position by having to recite public paeans to regional cooperation when they are contradicting it in their actions. Likewise, their invocations of Western threat scenarios that prioritize terrorism and insurgency are belied by events since only in Kyrgyzstan has there been an insurgency and that fizzled out once the unpopular government fell apart.⁶⁵

Potential Energy Threats

In the energy sphere, the threats posed by the rivalry of great powers and regional states for access to and control over energy are numerous. First, there is a rising global tide of terrorist attacks against energy infrastructure targets.⁶⁶ That could easily spread into Central Asia if the Afghan situation deteriorates any further. Second, Russia potentially could pose a threat to security by continuing its efforts to force Central Asian states to sell gas and oil only through Russian pipelines or at below market prices to Russia or Russian-approved consumers. But it is increasingly apparent that actually Central Asian states have growing market power in that they have been able to compel Moscow to pay them prices above current (and depressed relative to 2008) market prices. As the Nabucco pipeline becomes an ever more likely reality and given massive Chinese interest in Central Asian energy and willingness to pay for it, as well as Iran's continuing difficulties, it is likely for the foreseeable future that those threats will not ensue at any time soon. On the other hand, these states will remain rentier states living off the rents

⁶¹ *Ibid.*

⁶² Almaty, *Interfax-Kazakhstan Online*, in Russian, January 23, 2009, FBIS SOV, January 23, 2009.

⁶³ Almaty, *Kazakhstan Today Online*, in Russian, February 24, 2009, FBIS SOV, February 24, 2009.

⁶⁴ Stephen Blank, "Central Asia's Strategic Revolution," in *Regional Power Plays in the Caucasus and Central Asia*, NBR Analysis (Seattle, Washington: National Bureau of Research, Asia, 2003), pp. 51-76.

⁶⁵ Kirill Nourzhanov, "Changing Security Threat Perceptions in Central Asia," *op. cit.*, pp. 94-95.

⁶⁶ Jennifer Giroux, "Small Group Threats To Global Energy Infrastructure," *International Relations and Security Network, Special Issue* (May 2009) <www.isn.ethz.ch> (April 15, 2010).

of oil, gas, and other raw materials like copper, gold, and cotton, a system that most analysts feel promotes inequality, authoritarian rule, and potential domestic instability over the long term.⁶⁷ Moreover, they will (at least Turkmenistan and Kazakhstan) depend on the stability of oil prices and should those plummet, real economic and political difficulties would not be far behind.

In another scenario, it is equally possible that the pressure of both foreign and domestic investment requirements will place further stresses on an already precarious environmental situation in order to maximize revenues and rents for both domestic and foreign policy purposes. Already in 1999, the EIA's *International Energy Outlook 1999* report stated that, "The principal international energy issues have shifted from supply interruptions and their implications for energy security and price stability to the impact of energy production and consumption on regional and global environments."⁶⁸ Several factors could be at work here. First, since these are new states that still suffer from a shortage of environmentally and/or technically trained personnel, it is already true that much of their existing energy production is simply wasted and goes into the ground or the water table.⁶⁹ Therefore, as production grows, until these governments' capacity for regulating it grows commensurately, the pressure on clean water and arable land probably also grows commensurately. The linked processes of development and environmental degradation will continue at least for some time until the local administrations have the manpower, political will, and resources to attack those problems.

Second, comparative studies of environmental issues point to the conclusion that where the exploitation of natural resources and the directing of investment to that exploitation is of essential importance to

⁶⁷ Nancy Lee Peluso, "Coercing Conservation: The Politics of State Resource Control," in Ronnie D. Lipschutz and Ken Conca, (eds.) *The State and Social Power in Global Environmental Politics* (New York: Columbia University Press, 1993), pp. 50-52. For the concept of rentier states see, Jill Crystal, *Oil and Politics in the Gulf: Rulers and Merchants in Kuwait and Qatar* (Cambridge: Cambridge University Press, 1990); Giacomo Luciani, "The Oil Rent, the Fiscal Crisis of the State and Democratization," Ghassan Salame, (ed.) *Democracy Without Democrats: The Renewal of Politics in the Muslim World* (London: I.B. Tauris Publishers, 1994), pp. 130-155; Jacques Delacroix, "The Distributive State in the World System," *Studies in Comparative International Development* 15, 3 (Fall 1980): 3-21; Hazem Bebalwi, and Giacomo Luciani, (eds.) *the Rentier State*, Volume II (London: Croon Helm, 1990); H. Mahdawy, "The Problems and Patterns of Economic Development in Rentier /States: the Case of Iran," in M.A. Cook, (ed.) *Studies in the Economic History of the Middle East* (London: Oxford University Press, 1970), pp. 428-467.

⁶⁸ Robert Ebel et al., *The Geopolitics of Energy Into the 21st Century* (Washington, D.C.: Center for Strategic And International Studies, 3 volumes, 2000, III), p. 9, quoted from *International Energy Outlook 1999* (Washington, D.C.: Energy Information Administration, U.S. Department of Energy, March, 1999).

⁶⁹ *Radio Free Europe/Radio liberty*, (UN) *Civil Societies*, June 6, 2001.

both states and foreign investors with a direct stake in that process, governments generally opt for economic development over environmentalism. Moreover, the dependence of Central Asian states on external sources of financing and development not only spurs the rivalry for access to oil and natural gas or other raw materials as a source of capital; it also intensifies the primacy of development over conservation. This is because the investors' prime concern is an adequate and relatively rapid return on their investment. Consequently, Central Asia's "embeddedness" in the global economy subjects it to the economic expectations and objectives of key governments, international financial institutions, and multinational corporations. This structural setting, in turn, creates the basis for conflict with local traditions and customs -- which are made more acute in the absence of sufficient trained administrators or a civil society that can mediate between the governments involved or between them and local communities.⁷⁰

Third, Central Asian states are Third World states, and the primary concern of their governments in international economic policymaking is likely to be their domestic security. That concern will take precedence over foreign policy concerns. Because Central Asian countries are Third World states, in many ways their governments display the pathologies associated with those states. For example, state intervention in the economic issues connected with the exploitation of energy or other raw materials frequently breeds an economic-political climate that favors development over environmentalism. It also promotes a government view of natural resources as political and economic assets that must be controlled in order to remain in power. Those factors are among the classic conditions for rent-seeking economic policies to benefit current elites.⁷¹

Another factor making for rent-seeking by elites and rent-granting by the states to keep elites in line is the fact that so much of Central Asian politics is clan politics. Research suggests that in every Central Asian, state leaders who have come to power based on the backing of a group of clans have sought to emancipate themselves from that constraining factor and establish their own personal and family authority to the resentment of the clans.⁷² But to do so, they must also coopt the existing clans and, if

⁷⁰ Nancy Lee Peluso, "Coercing Conservation: The Politics of State Resource Control," in Ronnie D. Lipschutz and Ken Conca, (eds.) *The State and Social Power in Global Environmental Politics* (New York: Columbia University Press, 1993), pp. 50-52.

⁷¹ See the sources cited in note 47.

⁷² Kathleen Collins, *Clan Politics and Regime Transition in Central Asia* (Cambridge: Cambridge University Press, 2006); Edward Schatz, *Modern Clan Politics: The Power of "Blood" in Kazakhstan and Beyond* (Seattle, Washington: University of Washington Press, 2004); Vladimir Khanin, "Political Clans and political conflict in Contemporary Kyrgyzstan," in Ya'acov Ro'i, (ed.) *Democracy and Pluralism in Central Eurasia* (London: Frank Cass, Cummings Center Series, 2004), pp. 215-232.

possible, rebalance them by forming their own “political” clan based on fealty to the leader. For that fealty to continue, the flow of resources to elites must continue, for this is the primary means of holding their loyalty. Leaders must therefore constantly balance between these groups to maximize their own leverage and even to staff the regime, especially as the succession issue grows more acute. Moreover, they must constantly distribute rents to their clan followers and clan leaders must do so as well. Consequently, Central Asian governments must constantly seek rents from energy and other raw materials that can be exported and converted into cash. Most importantly if domestic patrons cannot provide their followers with these rents, since these are patron-client states, clients will gravitate toward other, even foreign, patrons who can deliver. Thus the search for energy and other raw materials rents is constant and pervasive.

Foreign bases play a key role here because the revenue they generate can be an enormous source of profit to the regime, its ruling family, and/or associated elites. Kyrgyzstan’s recent maneuvering between Washington and Moscow is an acknowledged case in point. Central Asian governments’ “multi-vector” policies that oscillate between competing great powers are in part motivated by a desire to induce great powers to support Central Asian governments with tangible material rewards. Those rewards not only can augment the state’s overall strength, but also its ability to maneuver among competing domestic factions. But that strength is only temporary because clans and factions will continually demand payoffs or “side payments” that weaken the state’s long-term capability to function autonomously and not on behalf of one or a few clans.

Consequently these states must perpetually seek security and other benefits from richer states who have the means to give them the wherewithal to distribute the rents necessary for political stability. Inevitably this situation creates dependence on Moscow and Beijing, if not the U.S., EU, and IFIs. Clan-based politics reinforces this pathology because of the constant pressure it places on governments to secure those resources. Anita Sengupta recounts that a diplomat who is also a researcher on Central Asia told her that the post-Soviet political shape of Central Asia is being molded against the backdrop of regional clannism and stressed to her that clannism’s continuing importance in the state is perhaps the most important aspect of regional political life.⁷³ In order to impress foreign patrons, local leaders must present themselves as they want to be seen, i.e. opulently. And that means holding tightly onto

⁷³ Anita Sengupta, *The Formation of the Uzbek Nation-State: A Study in Transition* (Lanham Md.: Lexington Books, 2003), p. 285.

resources acquired from within and abroad. For instance, in Tajikistan the following story about President Emomali Rahmonov was reported,

“Despite an annual budget of just \$700 million and cash-starved health and education systems, the President recently blew \$300 million on a new office for himself. The people live in pathetic poverty, while the hulking ‘People’s Palace’ sits awkwardly, to say the least, among the elegant neoclassical buildings of central Dushanbe. The interiors have been fitted out with Italian marble and Russian hardwood, the few who have been allowed inside report. Rahmonov tells appalled Western diplomats that since the democratic powers are unwilling to hand over billions of aid money, he requires opulent surroundings to entertain potential benefactors from Russia, China and Iran who have fewer scruples.”⁷⁴

While Rahmonov’s rationale is patently self-serving, it also has the ring of truth concerning Russian and Chinese perceptions.

As Robert Bates and Jesse Ribot have observed, African governments - like Central Asian ones - use market regulations as explicit instruments of rural political organization. Market intervention is also a basis for building urban and rural political machines. Hence, as Bates observes, the rents that accrue to the state thereby must not be seen in the strictly economic context of the inefficient use of resources. Instead,

“The prevailing tendency has been to regard these [policy generated] rents as pure social costs - inefficiencies induced by political distortions of market forces. What has not been stressed is that the rents also represent political resources - resources which can be used to organize political support.”⁷⁵

In instances where environmental considerations restrict opportunities for using raw materials or cash crops in this way, and where domestic threats are perceived, the environmental concerns will likely be brushed aside in order to pay off potential rivals or supporters. But we may also see the potential for coercive action in post-Soviet societies in a different light, especially if we factor in the current international rivalry for access to Central Asian resources. Nancy Lee

⁷⁴ Jon Boone, “Nato Has Serious Supply Problems In Afghanistan,” *Guradian.co.uk*, March 11, 2009.

⁷⁵ Jesse Ribot, “Market-State Relations and Environmental Policy: Limits of State Capacity in Senegal, in Lipschutz and Conca, (eds.) *The State and Social Power in Global Environmental Politics* (New York: Columbia University Press, 1993), p. 34; Robert H. Bates, *Markets and States in Tropical Africa: the Political Basis of Agricultural Policies* (Berkeley: University of California Press, 1981), pp. 99-100.

Peluso observes that not only are resource-funded development strategies, such as those common in Central Asia, almost always skewed to the enrichment of the central governmental leaders; they also can foster violent struggles within or between states.

“In addition, when a state’s incomplete hegemony prevents it from sufficiently controlling the people living under its jurisdiction, the state may use both conservation and economic arguments to justify the coercive exclusion of certain groups from valuable resources. Coercion and resource control are intended to increase the state’s powers of social control; and these in turn enable the state to extract more revenue from conservation or extractive zones... In sum, externally based resource claimants (including the state itself) frequently redefine resources, the means by which they may be conserved or harvested, and the distribution of benefits from their protection. Such redefinitions often override, ignore, or collide with local or customary forms of resource management. When competition between external and local legitimation mechanisms is played out in the environmental arena, the result is often social and political conflict, which causes environmental degradation and ultimately fails to achieve the interests of international conservation interests.”⁷⁶

From the foregoing analysis we can conclude the following: First, issues relating to resources like water and electricity, not only oil and gas, will directly impinge on the security considerations of local governments. Second, environmental issues relate directly to questions of governance and the distribution of assets and power in those societies. And those assets can include chances for better health and longevity, as well as more tangible ones such as actual possession of valuable resources and assets. Thus, environmental concerns are indeed factors that materially affect both inter-state and intra-state security throughout Central Asia. The continuing debate among scholars over whether and how the environment may legitimately be regarded as part of the agenda of international security is of little practical relevance in Central Asia, because it is already clear that environmental factors contribute significantly to the regional security agenda.⁷⁷

⁷⁶ Nancy Lee Peluso, “Coercing Conservation: The Politics of State Resource Control,” *op. cit.*, pp. 50-51.

⁷⁷ Gregory D. Foster, “Environmental Security: The Search for Strategic Legitimacy,” *Armed Forces and Society* 27, 3 (Spring, 2001): 373-395.

A Theory of Central Asian Security

On this basis we may develop a theory of Central Asian security policies that captures both domestic and external security agendas. As we noted above, after 1991, a new paradigm of Central Asia arose to shape our understanding of that region. This paradigm broadly asserts that all of the region's states, to varying degrees, suffer from authoritarian misrule in ways that ultimately must lead to a heightened risk situation. That risk situation has the very real potential of exploding during a major challenge to the system, e.g. a succession struggle or an insurgency, or major terrorist actions, and becoming a full-blown crisis.⁷⁸ Yet despite eighteen years of such misrule there is no sign of this happening anytime soon. Even in the two successions that have occurred, the Tulip revolution of 2005 in Kyrgyzstan and the succession in Turkmenistan after its dictator, Sapirmurat Niyazov, died in late 2006, no upheaval has occurred...although Kyrgyzstan seems to be perpetually on the edge of one. Obviously, the facts seem to have played a trick on the paradigm makers.

Moreover, they have also played a trick on many policymakers, for they too explicitly shared the fear that this paradigm may be true. When Turkmen President Sapirmurat Niyazov died, published accounts from the region reflected a balance between hopes for of improved conditions and fears of potential risks due to internal instability and the possibility of intensified external rivalry for influence over Turkmenistan's future course.⁷⁹

The reaction to Niyazov's death confirms the ubiquity of this contradictory outlook that expects crises due to misrule but then cannot conceive of any politics outside of the framework of attempted authoritarian modernization. In the Niyazov succession we saw a simultaneous belief in the fundamental uncertainty of the Turkmen and even regional security equation coupled with the belief that major change might be even worse. While many argued that a succession struggle, could, if done in a peaceful fashion, deescalate tensions, a violent struggle would further inflame inherent deep-seated tensions. Shokirjon Hakimov, the leader of Tajikistan's opposition Social Democratic Party of Tajikistan, stated that, "Undoubtedly, if the forthcoming political activities in Turkmenistan concerning the designation of the country's leader take place in a civilized manner, then they will certainly have a

⁷⁸ Anna Matveeva, *EU Stakes in Central Asia*, Chaillot Paper No. 91, Paris: Institute of Security Studies of the European Union, 2006, pp. 7-33, <www.iss-eu.org> (April 15, 2010); Martha Brill Olcott, *Central Asia's Second Chance* (Washington, DC, Carnegie Endowment for International Peace 2005); Stephen Blank, *Uzbekistan: A Strategic Challenge to American Policy*, Open Society Institute, 2005, <www.eurasianet.org> (April 15, 2010).

⁷⁹ "Azeri Experts Hope for Progress in Relations with Turkmenistan," Baku, *Turan News Agency*, in Russian, December 21, 2006, Retrieved from Lexis-Nexis.

positive influence on the development of pluralism in the region.”⁸⁰ At the same time, Kazakhstan’s Foreign Minister Kasymzhomart Tokayev revealed both his government’s hopes and its apprehensions by saying that his government has an interest in Turkmenistan’s stability. Therefore “Kazakhstan is not going to get involved in any wars for Turkmenistan.”⁸¹

That remark underscores the perception among onlookers of the potential for internal instability spilling over into neighboring countries. The risks of instability were clear even before Niyazov’s death. Many analysts, including this author, had been warning for some years before Niyazov’s demise that the succession in Turkmenistan or in other Central Asian states could well lead to violence and that other Central Asian states would also face the threat of violence when they experience successions.⁸² Indeed, immediately after his death, many Central Asian politicians and some, though not the majority, of analysts in Central Asia and Russia expressed genuine fears about an eruption of instability in Turkmenistan.⁸³ There is also good reason to argue that the ruling oligarchy that took over Turkmenistan in the wake of Niyazov’s death also feared domestic unrest; and therefore has moved to alleviate domestic conditions by promises of some social and economic reforms.⁸⁴

That episode underscored the widespread belief in Central Asia that the domestic situation in most if not all of these states was precarious, and the connections between that precariousness and foreign intervention

⁸⁰ “Tajik Opposition Leader Mulls Impact of Turkmen Developments,” Dushanbe, *Asia-Plus News Agency*, in Russian, December 22, 2006, Retrieved from Lexis-Nexis.

⁸¹ “Kazakhstan Not to “Get Involved in Any Wars for Turkmenistan,” Astana, *Russia & CIS General Newslines*, December 29, 2006, Retrieved from Lexis-Nexis.

⁸² Stephen Blank, “Strategic Surprise: Central Asia in 2006,” *China Eurasia Forum* 4, 2 (May, 2006): 109-130 and the sources cited there; Stephen Blank, *Uzbekistan: A Strategic Challenge to American Policy*, op.cit.; Kathleen Collins, *Clan Politics and Regime Transition in Central Asia* (Cambridge: Cambridge University Press, 2006), pp. 297, 302; E. Wayne Merry, “The Politics of Central Asia: National in Form, Soviet in Context,” in Daniel L. Burghart and Theresa Sabonis-Helf, (eds.) *In the Tracks of Tamerlane: Central Asia in the 21st Century* (Washington, D.C. National Defense University Center for Technology and National Security policy, 2004), pp. 36-42; “Uzbekistan Heads Towards Violent Regime Change,” *Jane’s Intelligence Review*, July 1, 2005, <www4.janes.com/subscribe/jir/doc> (April 10, 2010); Eugene B. Rumer, “Central Asian Leadership Succession: When, Not If,” *Strategic Forum*, Institute for National Security Studies, National Defense University, Washington, D.C., 2003; “Turkmenistan Faces a Crisis of Leadership-Experts,” *Eurasia Insight*, May 25, 2006.

⁸³ “Central Asia-Russia: Officials, Media Cite Concerns Over Stability Following Turkmen President’s Death,” OSC Report, December 21, 2006, *Foreign Broadcast Information Service Central Eurasia* (Henceforth FBIS SOV), December 22, 2006; Anatoly Medetsky and Simon Saradzhyan, “Niyazov Dies, Leaving no Heir,” *Moscow Times*, December 22, 2006, p. 1.

⁸⁴ Daniel Kimmage, “Turkmenistan: Presidential Campaign Reflects Latent Social Tensions,” *Radio Free Europe Radio Liberty Features*, January 19, 2007.

and competition for influence among the great powers. The episode also underscores the link between domestic crises and the possibility of terrorism, insurgency, separatism, as well as the risk to states from the immense corruption of the elites in these governments. The losers of the power struggle in Turkmenistan were quickly arrested on the grounds of that charge; something their jailers knew would resonate among the population. Clearly, even local elites believe that a direct link exists between internal security and the need to keep the great powers at a distance but on the side of the ruling elite. Thus the region as a whole remains at risk from the pervasive misrule that characterizes it.⁸⁵

Indeed, one Russian observer, Senior Research Associate of International and World Economics Institute of the Russian Academy of Sciences, Vladimir Yevseyev, argued that to prevent internal instability in both Turkmenistan and the region, Russia and Kazakhstan should play a key role in the post-Niyazov Turkmenistan.⁸⁶ This advocacy captures the fact that instability in one Central Asian state is widely perceived as being likely to spread to neighboring states. It also openly points to the linkages between Russia's concern for stability throughout Central Asia and its efforts to dominate the region. Another way to state this point is that the prospect of state failure leads interested external actors to prepare policies of more overt neo-colonial subordination of Central Asia to their interests and ambitions. Failure to master internal security dynamics opens the way to long-standing hard security threats.

Russia, in particular seems to be so anxious about the possibility of unrest in Central Asia spreading from a domestically triggered insurgency to other states like Kyrgyzstan, that here too it has suggested to intervene jointly with Kazakhstan. In a 2006 assessment, Ilyas Sarsembaev writes that,

“Some Russian military analysts consider that if Kyrgyzstan were overtaken by a complete political collapse, Russia and Kazakhstan could impose some kind of protectorate until stability could be reestablished and new elections held. In this scenario, the United States would allow Moscow to take action in Kyrgyzstan, because most of its own resources would already be mobilized in Iraq and Afghanistan –and probably in Iran and Syria. Russian help would then be welcomed and much preferred to that of China. Indeed, if

⁸⁵ Martha Brill Olcott, *Central Asia's Second Chance*, op. cit.; Anna Matveeva, *EU Stakes in Central Asia*, op. cit. pp. 7-33.

⁸⁶ “Kazakhstan Should Influence Stabilization of Situation in Turkmenistan, Russian Expert,” *The Times of Central Asia*, December 22, 2006, Retrieved from Lexis-Nexis.

Russia did not dare to put itself forward as a stabilizing force, China might use Uyghur separatism.”⁸⁷

Obviously this assessment links the prospect of state collapse in Kyrgyzstan to international rivalries (the so-called New Great Game) and to the possibilities of separatism among China's Uyghurs. Thus it implicitly postulates the paradigm outlined above, i.e. a direct link of state failure to foreign invasion or intervention...and even the threat of state dismemberment. More recently, on August 11, 2009, Russian President Dmitry Medvedev sent a letter to the Duma urging it to revise Russia's laws on defense. Specifically he urged it to revise the existing laws to pass a new law,

“The draft law would supplement Clause 10 of the Federal Law On Defense with paragraph 21 specifying that in line with the generally accepted principles and provisions of international law, the Russian Federation's international treaties, and the Federal Law On Defense, Russian Armed Forces can be used in operations beyond Russia's borders for the following purposes:

- To counter an attack against Russian Armed Forces or other troops deployed beyond Russia's borders;
- To counter or prevent an aggression against another country;
- To protect Russian citizens abroad;
- To combat piracy and ensure safe passage of shipping.

The draft suggests that the Federal Law On Defence be supplemented with Clause 101, setting, in accordance with Russia's Constitution, the procedures for decisions on use of Russian Armed Forces beyond the country's borders.”⁸⁸

Not only would this law provide a “legal” basis for the offensive projection of Russian military force beyond Russia's borders and thus justify the war with Georgia in 2008 and any subsequent attack in response to alleged attacks on “the Russian citizens” of the supposedly independent states of Abkhazia and South Ossetia. The law would also provide a basis for justifying the offensive use of Russian force against every state from the Baltic to Central Asia on the basis of supposedly

⁸⁷ Ilyas Sarsembaev, “Russia: No Strategic Partnership With China in view,” *China Perspective, Perspectives Chinoises*, No. 645, May-June 2006, p. 33.

⁸⁸ President of Russia News, August 11, 2009, <<http://www.kremlin.ru/eng/sdocs/news.shtml>> (August 11, 2009).

defending the “honor and dignity” of Russian citizens and culture from discrimination and attack. In the context of our discussion, attacks on Russians could well be twisted to mean that a state has lost control of the situation at home and direct forceful intervention from outside is necessary.

This should not surprise us. After all, in the wake of the Russo-Georgian War, Medvedev announced that henceforth he would base his foreign policy on five principles. These principles give Russia a license to intervene in other states where the Russian minority's “interests and dignity” are allegedly at risk. Medvedev also asserted that Russia has privileged interests with countries that he would not define, demonstrating that Russia not only wants to revise borders or intervene in other countries, it also demands a sphere of influence in Eurasia as a whole.⁸⁹ Yet even as Russia postulates a diminished sovereignty throughout Central Asia, Russia is strongly supporting the current status quo in all of these countries. Clearly, Russia believes that the status quo is better than the alternatives. Thus logically, if not pragmatically its policy is ultimately contradictory. The same may be said as well for China and America.

The Primacy of Internal Security

While elites and analysts both believe that the region is at risk from misrule that could quickly generate international repercussions, the region remains relatively stable even as this misrule continues. How do we account for this paradox? First we should take account of the work of many scholars who have argued that security in these states, as in other Asian and Third World states, is primarily internal security and is recognized as such by the leaders there. These countries simultaneously face the exigencies of both state-building, and assuring internal security and defense against external threats. Not surprisingly, the primary concern of Central Asian governments is internal security and their continuation in power, hence the proliferation of multiple military forces, intelligence, and police forces in these countries. These security forces often enjoy more resources than do the states' regular armies, and are their governments' recourse to rent-seeking, authoritarian, and clientilistic policies.⁹⁰

⁸⁹ “Interview given by Dmitry Medvedev to Television Channels Channel One, Russia, NTV, “August 31, 2008, <http://www.kremlin.ru/eng/speeches/2008/08/31/1850_type82916_206003.shtml> (April 15, 2010).

⁹⁰ Mohammad Ayoob, “From Regional System to Regional Society: Exploring Key Variables in the Construction of Regional Order,” *Australian Journal of International Affairs* 53, 3 (1999): 247-260; Mohammad Ayoob, “Inequality and Theorizing in International Relations: The Case for Subaltern Realism,” *International Studies Review* 4, 3 (2002): 127-148 and the works cited therein.

These facts possess significant relevance for any discussion of security, particularly in the Third World, including Central Asia, where the security environment is one of 'reversed anarchy' as described by Mikhail Alexiev and Bjorn Moeller. Alexiev, quoting Moeller, observes that,

"While in modernity the inside of a state was supposed to be orderly, thanks to the workings of the state as a Hobbesian 'Leviathan', the outside remained anarchic. For many states in the third World, the opposite seems closer to reality -- with fairly orderly relations to the outside in the form of diplomatic representations, but total anarchy within."⁹¹

Similarly, Amitav Acharya observes that,

"Unlike in the West, national security concepts in Asia are strongly influenced by concerns for regime survival. Hence, security policies in Asia are not so much about protection against external military threats, but against internal challenges. Moreover, the overwhelming proportion of conflicts in Asia fall into the intra-state category, meaning they reflect the structural weaknesses of the state, including a fundamental disjunction between its territorial and ethnic boundaries. Many of these conflicts have been shown to have a spillover potential; hence the question of outside interference is an ever-present factor behind their escalation and containment. Against this backdrop, the principle of non-interference becomes vital to the security predicament of states. And a concept of security that challenges the unquestioned primacy of the state and its right to remain free from any form of external interference arouses suspicion and controversy."⁹²

Indeed, for Central Asian states, and arguably even for transitional states like Russia, internal police forces enjoy greater state resources than do the regular armies, this fact being a key indicator of the primacy of internal security in defining the term national security.⁹³

⁹¹ As quoted in Mikhail Alekseev, *Regionalism of Russia's Foreign Policy in the 1990s: A Case of "Reversed Anarchy,"* Donald W. Treadgold Papers, University of Washington, Henry M. Jackson School of International Studies, No. 37, 2003, p. 12.

⁹² Amitav Acharya, *Human Security and Asian Regionalism: A Strategy of Localization,* Amitav Acharya and Evelyn Goh (eds.) *Reassessing Security Cooperation in the Asia-Pacific: Competition, Congruence, and Transformation* (Cambridge, MA: MIT Press, 2007), p. 241.

⁹³ Julian Cooper, "The Funding of the Power Agencies of the Russian State," *Power Institutions in Post-Soviet Societies*, No. 6-7, 2007, <www.pipss.org>, (April 15, 2010).

It is the case in Central Asia that the central issue is ensuring the continuation in power of the ruling regime and of the president's power. Even though these states acknowledge that they face external threats of terrorism and narcotics trafficking from Afghanistan, responding to those threats is second to the preservation of the status quo. For example, after protracted bargaining in 2006, Uzbekistan granted Russia the right to use its airfield at Navoi as a base, but only under special conditions. Russia will only be able to gain access to Navoi in case of emergencies or what some reports called "force majeure" contingencies. In return Russia will provide Uzbekistan with modern navigation systems and air defense weapons. In other words Uzbekistan wanted a guarantee of its regime's security and Russian support in case of a crisis. But it would not allow a peacetime Russian military presence there.⁹⁴

As these examples show, states "outsource" aspects of their security to stronger neighbors to acquire resources or rents from the great powers which are then used to pay off clients and grant them the rents they seek. For if they do not acquire these rents, they quickly turn to external patrons, undermining the domestic situation and introducing political rivalries among the governing elite with dangerous implications for those elites. The recently concluded Kyrgyz negotiations for the U.S. to stay at the Manas base openly illustrate this process. It is noteworthy that these negotiations took off only after Russia gave cash and support to President Kurmanbek Bakiyev so that he could neutralize domestic challengers in Kyrgyzstan's 2009 presidential election. These great powers also include organizations within Central Asia. They comprise the United States bases in Kyrgyzstan and Afghanistan, Russian forces in the Tajik-Afghan border, NATO assistance in developing local militaries like that of Kazakhstan, the SCO (which is developing an ever greater capability for bringing about security or using force against terrorist offensives), and Russia's Collective Security Treaty Organization (CSTO) and its bases in Kyrgyzstan and Tajikistan, and potentially in Uzbekistan.

Through such "multi-vector" diplomacy, local governments can mitigate their potential external security dilemmas by exploiting great and major power rivalries to secure tangible security assistance that they could not otherwise produce on their own. Thus by securing China's commitment to build pipelines and buy gas, Central Asian states were able to force Russia to pay higher prices for their gas and use the resources to strengthen their domestic and international positions. They thereby prevent or seek to prevent any of those external powers from dominating the regional security agenda and the region generally. This external assistance is becoming ever more costly as the price of energy

⁹⁴ "Uzbek Airfield Is Made Available to Russia in Emergencies," *Ferghana.ru Information Agency*, December 22, 2006.

risks and Central Asia's ability to export it to diverse markets increases. The region's strategic importance is growing and investing in Central Asia is ever more necessary for those powers who have interests in the region or wish to see themselves as great international actors. The security and material assistance other powers provide allows Central Asian regimes to worry less about external threats, and even to forego genuine regional integration. In this context, they can concentrate on exploiting those rivalries and the circumstances that grow out of them, like energy rivalry to increase their domestic security, and leverage enough resources like energy rents with which to keep domestic challenges at bay.

Thus the New Great Game materially assists domestic security in Central Asia and not only by foreclosing possibilities for any one power to dominate it. One way it contributes to regional security is through direct material assistance, e.g. China's US\$900 million loan to local governments after the SCO summit in 2005; and more recent investments like the US\$10 billion loan China offered at the 2009 SCO summit; NATO's help in building up Kazakhstan's armed forces through the Partnership for Peace; the U.S. presence in Afghanistan and Kyrgyzstan; Russia's military presence in Tajikistan, Kyrgyzstan, and more recently Uzbekistan; and the growing scope of the exercises of SCO member forces against terrorism, separatism, and extremism, as displayed in the 2007 exercises.

Such assistance delivers immediate rewards, and also stimulates external powers to compete for influence in Central Asia by making greater regional investments. Thus, Chinese investments in pipelines connecting to Kazakhstan and Turkmenistan have not only led Russia to invest in building their own new pipelines between these countries and Russia, it has also agreed to pay higher prices to the gas-producing Central Asian states: Turkmenistan, Uzbekistan, and Kazakhstan.⁹⁵ Similarly, the rivalry with the EU and the U.S. for influence over the direction of gas pipelines has also led Russia to discuss new energy deals with Kyrgyzstan and Tajikistan which both those states eagerly want. These deals would give these governments more resources to meet pressing internal challenges, even if Russia raises its profile in their countries.⁹⁶ Indeed, Moscow's elite appears to view any gain by China or

⁹⁵ Emma Graham-Harrison, "China-Turkmen Gas Price Seen Setting New Benchmark," *Reuters*, January 22, 2008; Almaty, *Interfax-Kazakhstan*, in Russian, January 9, 2008, Open Source Committee, Foreign Broadcast Information Service Central Eurasia, (Henceforth FBIS SOV), January 9, 2008.

⁹⁶ Erica Marat, "Gazprom Might Buy Kyrgyzgaz in Coming Months," *Eurasia Daily Monitor*, February 1, 2008; "Russia Striking Back in Energy Game, Makes Play for Kyrgyz National Gas Company," *Eurasia Insight*, January 31, 2008; Roger McDermott, "Rahmon Effusive About 'Strategic Partnership' With Russia," *Eurasia Daily Monitor*, February 7, 2008.

the U.S. in Central Asia with endless paranoia. The Russian media repeatedly speculates about China's economic "conquest" of Central Asia and regards the handover of two obsolete Huey helicopters by Washington to Astana as the beginning of the end of Russian influence there.⁹⁷

Alternatively, the benefits local regimes gain from such multi-vector diplomacy may be purely political, as in the case of the SCO's political dimension. For Moscow and Beijing, a key purpose of the SCO is to organize and articulate regional support for the ouster of U.S. bases from Central Asia and to prevent the formation of any kind of U.S.-led security organization there. At the same time, a second clear purpose of the SCO is to provide a forum for its members' virtually unanimous opinion that Washington should not interfere in their domestic arrangements. In other words, it functions, *inter alia*, as an organization of mutual protection and for the granting of the international legitimacy its members so desperately lack and crave. All the members support the continuation of the status quo and have united to reject calls on behalf of democratic norms for externally interested parties like Washington.. Thus Russia and China provide both security and ideological cover for local regimes, allowing them to continue on their course with some sense that key powers will support them. Uzbekistan in particular has been a master of such oscillation between East and West. Indeed, President Karimov said as much in December 2007:

"There are still those who claim that there are disagreements between Uzbekistan on the one hand and the United States and European states on the other. It is not hard to see that they would like those disagreements to exist in order to benefit from them --- Uzbekistan, in its foreign policy, has adhered to mutually beneficial cooperation with and mutual respect for its close and far neighbors, including the United States and Europe. We will never change this policy. Moreover, we can say with certainty that the foundation for equal and mutually beneficial relations that suit our national interests is growing even stronger."⁹⁸

In this fashion the SCO too acts to stabilize the domestic situation by institutionalizing a forum where great power rivalries are visible but

⁹⁷ Viktoriya Panfilova, "China Will Dress Turkmenistani Army: Pekin Generously Credits Central Asian Countries," Moscow, *Nezavisimaya Gazeta*, in Russian, November 28, 2007, *FBIS SOV* November 28, 2007; Bulat Abdulin, "For Kazakhstan's Army - a NATO Heading," *Marketing I Konsalting Internet Version*, in Russian, January 9, 2008, *FBIS SOV*, January 15, 2008.

⁹⁸ Johanna Lillis, "US-Uzbekistan Relations: Another Step Toward Rapprochement?" *Eurasia Insight*, January 23, 2008.

moderated, and in which Central Asian states have a real voice in its decisions and can talk on a collective basis to extract resources from those great powers. Thus the SCO allows the smaller members to exploit it for their own purposes-overcoming both the specter of “reversed anarchy” and great power domination.

Water Issues

Disputes over water pertain both to the energy and environmental issues that could threaten the region. For those states lacking in hydrocarbons-like Kyrgyzstan and Tajikistan-water is their main source of power both literally and figuratively. Water issues are vitally important for them. Water issues are also vitally important for the downstream states that suffer from water scarcity, and are the hydrocarbon producing states: like Kazakhstan, Turkmenistan, and Uzbekistan. This situation exists within a context where foreign governments like Russia and the EU have weighed in on water issues in Central Asia. Inasmuch as issues of water security have recently risen to the forefront of public debate, there have been repeated crises, notably between Uzbekistan and its neighbors, that have led Tashkent to demand publicly that solutions to water problems take into account the interests of all states (by which it means, of course, primarily its interests). In urging “rational and effective use of water resources in the region based on universal international norms,” Tashkent has thrown down the gauntlet, so to speak, to its neighbors.⁹⁹ And it also precipitated a new round of crisis-level tension among its neighbors that could easily get out of control. Specifically, Uzbekistan has criticized its upstream neighbors’ endeavors to construct new large-scale projects to build hydropower facilities and stated that only Central Asian states can resolve the problem. In other words, it seeks to exclude Russia, China, the U.S., and the EU from weighing in decisively on those issues. But in so doing, it has also called for the UN to set up a process to examine all hydropower projects on transboundary rivers and resolve all the issues “on the basis of mutual understanding, constructive dialogue, and consensus” among the parties.¹⁰⁰ Meanwhile its neighbors, e.g. Tajikistan, are hardly disposed to listen to Uzbekistan, which they regard as a threat¹⁰¹

In April 2009, Central Asian leaders invoked foreign recommendations at the most recent water summit, thus essentially

⁹⁹ Moscow, *Interfax*, in Russian, April 14, 2009, *FBIS SOV*, April 14, 2009.

¹⁰⁰ *Ibid.*

¹⁰¹ Erica Marat, “Controversy Intensifying Over the Construction of Dams in Central Asia,” *Eurasia Daily Monitor*, May 7, 2009.

inviting foreign participation in these issues.¹⁰² Therefore, there is now an international debate on this issue and related questions. Experts from other countries and other governments in Central Asia dispute Tashkent's claims and argue that it and possibly other states like Turkmenistan, use water irrationally. They also advocate carrying out an examination of all Central Asian hydropower projects.¹⁰³ Yet EU experts have also criticized Tajikistan's Rogun dam project saying it entails high risk and replicates "past reckless Soviet industrial planning."¹⁰⁴ Pierre Morel, the EU's representative for Central Asia, urges that those governments avoid large hydropower projects and construct in their place small hydroelectric projects that require much less investment and are built much more quickly. He also called for a single international coordinating agency to resolve the water and energy problem lest these issues further burden regional development.¹⁰⁵ Furthermore, water projects already underway in Kazakhstan with the assistance of the World Bank offer some prospect of alleviating its and possibly other countries' water issues.¹⁰⁶

These disputes over water derive from Soviet practices and the failure of the Central Asian states to improve on these practices regarding irrigation and water use, or to find a basis for cooperation. As a result, these disputes between the upstream and downstream states have become perennial. Not surprisingly, the most recent water summit in Central Asia ended in stalemate.¹⁰⁷

"To escape from the annual disputes and to have an independent energy infrastructure, Tajikistan and Kyrgyzstan are planning to build more dams to produce electricity both to meet their own energy demands and [to] sell it to Pakistan, Iran, and India. The three downstream countries (Uzbekistan, Turkmenistan, and Kazakhstan) are opposed to this idea, because their economies heavily rely on cotton, wheat, and rice, which without the water coming from the upstream countries will be impossible to grow. Thus at the moment Central Asian countries are locked in seemingly endless disagreement. Attempts to resolve the issue since 1991 (have) so far failed. In the framework of

¹⁰² Erica Marat, "Water Summit" in Central Asia Ends in Stalemate," *Eurasia Daily Monitor*, April 30, 2008.

¹⁰³ Dushanbe, *Asia-Plus*, in Russian, March 5, 2009, *FBIS SOV*, March 5, 2009.

¹⁰⁴ Erica Marat, "Controversy Intensifying Over the Construction of Dams in Central Asia," *op. cit.*

¹⁰⁵ Dushanbe, *Asia-Plus Online*, in Russian, April 8, 2009, *FBIS SOV*, April 8, 2009.

¹⁰⁶ Joanna Lillis, "Kazakhstan: Amid Central Asian Dysfunction, Astana Becomes an Island of Sound Water-Management Policy," *Eurasia Insight*, May 6, 2009.

¹⁰⁷ Erica Marat, "Water Summit" in Central Asia Ends in Stalemate," *op. cit.*

regional water management four intergovernmental treaties were signed and one draft agreement was prepared. The provisions of the treaties have failed to resolve the real issues or remained paper agreements only.”¹⁰⁸

As noted above, the potential for conflict on this issue is great. Conflicts have already broken out sporadically between Uzbekistan and Kyrgyzstan while the threat of conflict between Uzbekistan and Tajikistan also remains high.¹⁰⁹ With Russian help, Kyrgyzstan and Tajikistan are preparing to build the major hydropower projects that so arouse Uzbekistan, thereby giving Russia a voice in these issues. Uzbekistan may try to preempt these projects. Thus the Central Asian security situation could easily deteriorate over water as Shamir noted above.¹¹⁰

Current Water Issues and Regional Security

Erika Weinthal has plumbed the depths of the complex multi-level interaction among foreign actors, local governments, and domestic constituencies in creating cooperative solutions to water problems, especially around the Aral Sea, during the first decade of Central Asian independence. That process bears out and validates the idea that Central Asian states have established a pattern of extracting foreign resources to strengthen domestic state-building capabilities, international legitimacy and satisfy critical domestic constituencies. Weinthal has also shown that these solutions were limited, helped stabilize a repressive and backward regimes, not to mention sub-optimal system of economic and social control as well as water usage, and did not resolve the asymmetries between upstream and downstream users and between energy-rich and energy-poor states. Those solutions were also closely tied, as she has shown to the state-building processes in Central Asia after independence.¹¹¹

But now we have entered a period of the stabilization of those structures and the need to deal with the consequences of the failure to go beyond a narrow reform that left much of the old order intact. These reforms did not get at the roots of the desiccation of the Aral Sea and other regional water problems. One critical issue is the conflict between upstream states, like Kyrgyzstan, that want to use their waters for

¹⁰⁸ Umida Hashimova, “Fire Over Water in Central Asia,” *Central Asia Caucasus Analyst*, April 9, 2008.

¹⁰⁹ *Ibid.*; Kirill Nourzhanov, “Changing Security Threat Perceptions in Central Asia,” *op. cit.*, pp. 94-96.

¹¹⁰ Umida Hashimova, “Fire Over Water in Central Asia,” *op. cit.*

¹¹¹ Erika Weinthal, *Statemaking and Environmental Cooperation: Linking Domestic and International Politics in Central Asia* (Cambridge, MA; The MIT Press, 2002).

hydroelectric power while Kazakhstan and Uzbekistan sought to ensure that they would get as much water downstream as before to perpetuate their Soviet-era system of irrigation and agricultural policies that serve as a basis for repressive social control and rent-seeking in agriculture, especially cotton. This is particularly true in Uzbekistan.¹¹² As a result, we see that local governments are unable to address inter-sectoral tradeoffs that might alleviate these problems and have been quite unable to form regional structures of cooperation that could regulate -- if not resolve -- these collective goods programs.

Moreover, regional cooperation has also foundered on account of rival aims for leadership in Central Asia. Kazakhstan, the region's economic leader, had begun not only to outstrip the rest of Central Asia economically, before the current economic crisis took root, it had begun to project economic power into Kyrgyzstan and elsewhere through its investments.¹¹³ But this only sets it up to rival Uzbekistan, which is the central power in Central Asia and dominates the Ferghana Valley. Therefore, Uzbekistan does not want any foreign interference in its internal affairs and insists on continuing its methods of stifling social control over the population rather than yield to foreign influence.¹¹⁴ The 1990s failed to produce a breakthrough in local socio-economic organization or to ensure harmony between upstream and downstream users of water, or to build lasting structures of control over water usage, or to compensate for increasingly nationalistic energy policies with inter-sectoral deals. Today the stage is set for recurrent water crises in the absence of a harmony of interests among all users, or a capacity to manage water at the regional level.¹¹⁵ Indeed, the end of Soviet rule has increased the number of claimants to regional water resources and has led to competing national and nationalist struggles over control rather than to a true internationalization of the problem under the regulation of international agencies like the UN or World Bank.¹¹⁶

The latest manifestation of the problem became quite clear early in 2009, if not beforehand. In the absence of regionally cooperating institutions, the issue of water use has become an issue of national security for Central Asian states, and they have developed a zero-sum mentality about its use. One side's gain is the other's loss. This securitization process or dynamic also relates to these states' pursuit of

¹¹² *Ibid.*, pp. 175-187.

¹¹³ Richard Weitz, *Kazakhstan and the New International Politics of Eurasia* (Stockholm: Institute for Security and Development, 2008).

¹¹⁴ Erika Weinthal, *Statemaking and Environmental Cooperation: Linking Domestic and International Politics in Central Asia*, op. cit., p. 161.

¹¹⁵ *Ibid.*, pp. 173-225.

¹¹⁶ Kai Wegerich, "Water: The Difficult Path To A Sustainable Future For Central Asia," Tom Everett-Heath, (ed.) *Central Asia: Aspects of Transition* (London: Routledge, 2003), p. 260.

self-sufficiency-not regional integration-and their ambition for a high degree of state control over key resources.. Thus, across Central Asia the potential for disputes is almost structurally determined.¹¹⁷

Since independence in 1991, water disputes and conflicts have continued with respect to the two largest basins, the Amu Daria and Syr Daria, as well as the Aral Sea. In the Amu Daria, the main dispute is between Turkmenistan and Uzbekistan, and has occasionally degenerated into forceful actions by Uzbekistan. However, the more recent clashes have to do with the Syr Daria River. It runs through the Ferghana Valley, the epicenter of Uzbek-Tajik-Kyrgyz tensions, and a potential hotbed of Islamic radicalism. Its ethnic heterogeneity has also spawned conflicts. Tensions also derive from the fact that for Kyrgyzstan and Tajikistan, water is the main indigenous basis of energy, namely hydropower. To the degree that they can use it, they will reduce their demand for energy imports and may also export electricity, which is still a “scarce factor” in Central Asia. Thus, the economic security of upstream states depends upon being able to convert water into hydroelectric power, while for Uzbekistan, water is equally vital for irrigating cotton, not just for economic purposes, but even more as a basis of social and political control. Therefore, there is much tension over Kyrgyz and Tajik plans for electric power installations. Beatrice Mosello of the Geneva Center for Democratic Control of the Armed Forces has written that,

“Tension also derives from conflict over the Toktogul reservoir. This is a massive hydroelectric facility, built in the 1970s by the Soviets in the Kyrgyz part of the Syr Daria and linked to a massive set of water control installations on the same river. Toktogul is now a major point of contention between Kyrgyzstan and the downstream states. Kyrgyzstan would prefer to release water from this reservoir during the winter season so as to provide for the country’s heating and other needs. However Kazakhstan and Uzbekistan rely on that water to irrigate cotton and other crops during the summer. This controversy has led Uzbekistan to enact policies aimed at increasing self-reliance and reducing dependence on the Toktogul Reservoir which include the construction of a reservoir capable of storing 2.5 billion cubic meters of water. Kyrgyzstan is also pursuing a strategy of greater energy self-sufficiency. At present (2008), authorities are exploring the construction of two new dams and hydropower plans that would generate enough electricity for

¹¹⁷ Beatrice Mosello, “Water in Central Asia: A Prospect of Conflict Or Cooperation?” *Journal of Public and International Affairs* (2008): 153-156.

national self-reliance plus a surplus for export, the problem is that the \$2.3 Billion price tag is 1.2 times the country's GNI (Gross National Income)."¹¹⁸

In short, each state is pursuing independent, even beggar they neighbor, water policies. And along the Syr Daria, given its ethnic heterogeneity, high population growth rates, poverty, repressive and corrupt regimes, vulnerability to political incitement, and self-centered local and regional power structures that have considerable independence, conflict seems almost inevitable.¹¹⁹ Thus, the present disputes derive from this asymmetry of interests and needs among Kyrgyzstan, Uzbekistan, and Tajikistan and have long since become entwined with all these states' issues of national security and foreign relations.

Already at the SCO annual summit in 2007, the Presidents of Uzbekistan and Tajikistan exchanged peppery remarks over Dushanbe's intention to finish building the Rogun dam, the construction of which has been frozen for years. Uzbekistan worries that an overly high dam would allow Tajikistan to regulate the stream flows that irrigate Uzbekistan's valleys¹²⁰ Simultaneously, President Nursultan Nazarbayev of Kazakhstan voiced several claims against China due to Kazakhstan's grave concerns about some water projects being implemented by China. These concerns are readily understandable once we realize that Kazakhstan has the most acute freshwater scarcity of any post-Soviet country.¹²¹ Beijing's planned projects illustrate the heedlessness with which many of these states are considering water projects, insofar as their neighbors' interests are concerned. China is close to completing a canal project that will siphon water from the Irtysh River to the Karamay oil province plants and farmlands in Xinjiang province. Beijing is also building up an intake of water in the upper reaches of the transborder Ili River that ensures 30 percent of the influx of water to Lake Balkhash. The expansion of the intake of the Ili's waters in China from 3500 to 5000 cubic meters will increase the shallowing and salinization of Lake Balkhash. The Irtysh is also the largest tributary of Russia's Ob River and yields water to Lake Zaysan in Kazakhstan.¹²²

Thus the consequences of this project are quite clear. It will slash fresh water flow to eastern and Central Kazakhstan, putting the cities of Ust-Kamenogorsk, Semipaltinsk, and Provlodar on the brink of full water deficiency, dry up the Irtysh Karaganda canal, and lower the water

¹¹⁸ *Ibid.*, pp. 158-159.

¹¹⁹ *Ibid.*, pp. 159-160.

¹²⁰ Vassily Belozyorov, "Passions Over Water," *Russia In Global Affairs* 7, 2 (April-June, 2009): 159.

¹²¹ *Ibid.*

¹²² *Ibid.*, pp. 159-160.

level in the Irtysh around Russia's city of Omsk by 0.6 meters.¹²³ But China is doing this because it is short of water -- 70 percent of its water supply is so polluted that it cannot be used even for technical purposes. Since Beijing conceals the extent of its pollution and of the resulting industrial accidents and disaster, its neighbors have no clear assessments and means of undertaking adequate countermeasures. So until there is a catastrophe that involves the neighbors, little can be done except consequence management...which is clearly an inadequate response.¹²⁴

Tajikistan-Uzbekistan-Kyrgyzstan

The most topical struggle over water involves Uzbekistan, Tajikistan, and Kyrgyzstan and, as stated above, it involves struggles over water and hydropower projects. Added to this issue is the fact that Uzbekistan is trying to assert its own regional supremacy in Central Asia; while Russia is trying to unite all the states in its own security structures and agenda to exclude the U.S., and minimize China's influence. Furthermore, as outlined above, all the regional governments are trying to extract concessions from Russia in return for Moscow's efforts to subordinate them even further to Russian economic and military power. Thus, these efforts to deal with water issues soon run afoul of clashing local and great power political perspectives.

Already in 2006, the U.S. made clear that it supported the expansion of hydro-electric power in Tajikistan so that it could export electricity to Pakistan and Afghanistan, gain export markets not directly tied to Russia and support South Asian development.¹²⁵ Tajikistan, as our theory would predict, was also looking to other benefactors to support its projects to produce hydropower. Not surprisingly, Tajikistan drew closer to Kazakhstan in order to gain material resources from it, particularly oil and gas. In May 2008, Rahmonov hinted at support for closer ties with Kazakhstan and support for President Nazarbayev's program of a Central Asian Union that would be a new regional alignment at the expense of Uzbekistan and Russia. A new Kazakh-Tajik investment fund will put US\$100 million into the fund that will realize projects in Tajikistan. A consortium will operate on the Rogun hydroelectric dam project, helping with shares in the consortium and as investors. Kazakhstan is also interested in other hydroelectric dam projects to carry electricity through Kyrgyzstan to Kazakhstan and buying Tajik hydroelectricity. Nazarbayev's plan skirts Uzbekistan, and uses his country's economic power much as it did to become a major foreign investor in Kyrgyzstan and Georgia and check Uzbekistan's efforts to dominate its eastern

¹²³ *Ibid.*, p. 160.

¹²⁴ *Ibid.*

¹²⁵ Dushanbe, *Asia-Plus Internet Version*, in Russian, May 8, 2006, FBIS SOV, May 8, 2006.

neighbors: Tajikistan, and Kyrgyzstan. Nazarbayev also made a vague promise about relieving Tajikistan's imminent food crisis, but made no binding commitments, certainly none on loosening Kazakhstan's ban on grain exports. In return for these economic gestures to Dushanbe, Tajikistan appeared to be moving to support Kazakhstan's reinvigorated push for a Central Asian Union to which Uzbekistan is opposed.¹²⁶

Not to be outdone, in 2006, Russia proposed a regional consortium to ensure effective water use and the consideration of all countries interests (i.e. Uzbekistan's as much as if not more than Tajikistan's interests).¹²⁷ This apparently has remained Russia's position, namely that everyone's interests must be satisfied by whatever solution to water issues comes about, a stance that leads to the suspicion in Tajikistan that Russia is colluding with Uzbekistan to prevent water shortages in Uzbekistan and prevent the economic independence Tajikistan would gain from exporting electricity to South Asia. The development of such exports could facilitate other energy projects linking Central and South Asia, a prospect that greatly injures Russian interests and coincides with Washington's preferences. Uzbekistan is also seen as a competitor with Tajikistan for electricity exports to South Asia so it naturally looks askance at that project.¹²⁸

Kyrgyzstan's economic crisis, and specifically the crisis in its electricity sector, coupled with its highly inefficient use of water and electricity, adds to the problem, especially from Uzbekistan's standpoint. Due to those factors, the obsolescence of much of Kyrgyzstan's infrastructure, the severe cold in the winters of 2007-08 and 2008-09, the water level at Toktogul has dropped to 70 percent of its previous levels. Kyrgyzstan must build new hydroelectric dams to ensure that it can produce electricity and does not have to make the draconian cuts in electricity deliveries that took place after 2007. However, these new dams could mean less water released downstream to Uzbekistan when its cotton crops need the water, making this an international issue. Although the five Central Asian states agreed in 2008 on measures to alleviate the water and energy deficit for 2009, it is clear that mistrust between Uzbekistan and its two eastern neighbors continues to prevail.¹²⁹

By early 2009, Tajikistan was widely regarded as being on the verge of state failure.¹³⁰ The current economic crisis has hit it enormously hard and, at the same time, Uzbekistan raised the price of its natural gas

¹²⁶ Bruce Pannier, "Central Asia: Kazakh, Tajik Presidents Show Oil and Water Do Mix," *Radio Free Europe Radio Liberty*, May 14, 2008.

¹²⁷ "Central Asian Summit To Focus On Water Resources Sept. 2," *RIA Novosti*, August 28, 2006.

¹²⁸ Dushanbe, *Faraj*, in Tajik, February 5, 2009, *FBIS SOV*, February 5, 2009.

¹²⁹ Shairbek Juraev, "Energy Emergency in Kyrgyzstan: Causes and consequences," *EUCAM: EU-Central Asia Monitoring*, No. 5, February 2009.

¹³⁰ *Tajikistan: On the Road To Failure*, *op. cit.*

exports to Tajikistan from US\$145 to US\$240/tcm and refused to authorize the transmission of electricity from Turkmenistan through its territory to Tajikistan. In February, Uzbekistan also reduced gas supplies to Tajikistan by 70 percent due to its growing debt.¹³¹ Worse yet, in January 2009, Russian President Medvedev, desiring to consolidate Russian access to Uzbekistan's gas and oil, supported Uzbekistan by speaking of the need for Russia to influence Tajikistan to desist from building the Rogun dam and to take account of Tashkent.¹³² Medvedev apparently backed away from previous support for Rogun and other projects and said that Russia would not support any regional hydropower project unless it took into account every state's interests.¹³³ This enraged the Tajik government which then promptly cancelled President Rahmonov's visit to Moscow, cancelled broadcasting licenses for the only available Russian television channel, launched media attacks on Russia, and made overtures to both Washington and international financial institutions for help.¹³⁴ Not surprisingly, and especially in view of Tajikistan's precarious internal and economic situation and the situation in Afghanistan, Rahmonov succeeded in winning more resources from these institutions for poverty relief.¹³⁵

Kyrgyzstan also raised the alarm about being betrayed by Russia, for whom Uzbekistan is clearly the key player besides Kazakhstan in Central Asia.¹³⁶ The visible increase in tension between Tajikistan and Uzbekistan on the one hand and with Russia on the other forced some rethinking of positions. Iran jumped in to offer support for the Rogun dam and Tajikistan moved to do something about the blackouts caused by Uzbek policies by taking more water to produce electricity, aiming at Uzbek agriculture.¹³⁷ At the same time, both Dushanbe and Tashkent were not happy with Moscow's assistance to Kyrgyzstan in February to

¹³¹ Maciej Falkowski and Aleksandra Jarosiewicz, "Tajikistan Faces Crisis of Statehood," *CES Commentary*, <www.osw.waw.pl>, March 6, 2009.

¹³² Moscow, *Vesti TV* in Russian, January 23, 2009, *FBIS SOV*, January 23, 2009; Moscow, *Interfax-AVN Online*, in Russian, January 23, 2009, *FBIS SOV*, January 23, 2009.

¹³³ Farangis Najibullah, "Trip Cancellation Fuels Rumors of Rift in Tajik-Russian Relations," *Radio Free Europe Radio Liberty*, February 2, 2009.

¹³⁴ Maciej Falkowski and Aleksandra Jarosiewicz, "Tajikistan Faces Crisis of Statehood," *op. cit.*

¹³⁵ "Tajikistan: Dushanbe On the Edge of Instability - Report," *Eurasia Insight*, February 18, 2009; Ulrich Speck, "Tajik President, In Brussels, Looks To Boost Relations With EU, NATO," *Radio Free Europe Radio Liberty*, February 9, 2009.

¹³⁶ "Medvedev in Uzbekistan-Russia Sends Contradictory Signals to Central Asia," *CES Commentary*, <www.osw.waw.pl>, January 28, 2009.

¹³⁷ Sergei Medrea, "Energy Update-Tajikistan: An Eye For an Eye,?" *Eurasia Insight*, January 28, 2009; "Iran To Take Part In Construction of Tajik Power Plant," *Dushanbe, Asia-Plus Website*, February 6, 2009, From Lexis-Nexis; "Tajikistan: Dushanbe threatens Uzbekistan with Water Cut-Off," *Eurasia Insight*, January 27, 2009.

oust the U.S. from Manas, another sign of regional rivalries. Nevertheless, Moscow warned Dushanbe not to question its policies.¹³⁸

Despite this warning, Tajikistan upped the pressure, making noises about Russia's non-observance of many agreements, including the one to finance Rogun, and its base in Tajikistan, implying that it might ask Russia to leave and bring in the U.S. In other words, since February 2009, Tajikistan, exactly as our theory would predict, started pressuring Russia to rescue it or face the possibility of its looking to the West for aid. Tajikistan also put pressure on Uzbekistan.¹³⁹ Uzbekistan duly backtracked, resumed electricity exports from Turkmenistan, and called for internationalizing the problem. Specifically it demanded publicly that solutions to water problems take into account the interests of all states (by which it means, of course, primarily its interests). In urging "rational and effective use of water resources in the region based on universal international norms," it has also called for the UN to set up a process to examine all hydro-energy projects on trans-border rivers and resolve all the issues "on the basis of mutual understanding, constructive dialogue, and consensus" among the parties.¹⁴⁰ Thus Tashkent even announced its willingness even to invest in Tajik hydroelectric projects but linked this to consideration for Uzbek interests.¹⁴¹ This volte-face may have been motivated by the concurrent announcement of large-scale Russian aid to Kyrgyzstan in order to oust the U.S. from Manas. In return for Kyrgyzstan's assent to the ouster, Russia promised large-scale aid to the Kambarata hydropower project in Kyrgyzstan, signifying its move backward from consideration for Uzbek interests and forcing President Islam Karimov, or so it is alleged, to make gestures towards Bishkek and Dushanbe.¹⁴²

¹³⁸ Alexander Reutov, "Rogun Hydroelectric Power Station Produces First Electricity In Relations Between Dushanbe and Moscow," Moscow, *Kommersant Online*, in Russian, January 29, 2009, *FBIS SOV*, January 29, 2009; Bishkek, *Bishkek Press Club*, in Russian, February 4, 2009, *FBIS SOV* February 4, 2009.

¹³⁹ Dushanbe, *Asia-Plus* in Russian, February 5, 2009, *FBIS SOV*, February 5, 2009; Viktoriya Panfilova, "Dushanbe Will Present Moscow With Bill: Russian Military Base Covers Tajikistan From South," Moscow, *Nezavisimaya Gazeta*, in Russian, February 20, 2009, *FBIS SOV*, February 20, 2009, Moscow, *Interfax*, in Russian, July 24, 2009, *FBIS SOV*, July 24, 2009; Alexander Reutov, "Emomali Rahmonov has Put Russian Out of Work," Moscow, *Kommersant Online*, in Russian, July 24, 2009, *FBIS SOV*, July 24, 2009; Alexander Gabuyev, "Tajikistan Has Requested Reinforcements for the Russian Military," Moscow, *Kommersant*, in Russian, July 30, 2009, *FBIS SOV*, July 30, 2009.

¹⁴⁰ Moscow, *Interfax*, in Russian, April 14, 2009, *FBIS SOV*, April 14, 2009; "Uzbekistan: Tashkent Resumes Electricity Exports to Afghanistan," *Eurasia Insight*, January 27, 2009.

¹⁴¹ Konstantin Parshin, "Tajikistan: Is Tashkent Reaching Out To Dushanbe?" *Eurasia Insight*, February 26, 2009; Dushanbe: *Khovar Online*, in Russian, February 16, 2009, *FBIS SOV*, February 16, 2009.

¹⁴² Konstantin Parshin, "Tajikistan: Is Tashkent Reaching Out To Dushanbe,?" *op. cit.*

Russia, for its part, having determined to be the dominant regional power, has learned that it must therefore maneuver carefully around these regional controversies. Its primary aim is to prevent anyone from defecting to the West or China, and to lock up energy supplies insofar as possible. Most likely for the latter reason, Russia supported Uzbekistan's claim on hydropower in return for signing contracts to ship Uzbek gas westward. But in so doing, it angered Kyrgyzstan and Tajikistan, forcing it to rebalance and subsidize them.¹⁴³ Tajikistan duly reacted to Russian support for Uzbekistan by pressuring Uzbekistan with water and Russia with defection, leading the former to warn about impending water crises, and the latter to find a solution that transferred sufficient resources to Tajikistan while not inciting Uzbekistan too much.¹⁴⁴

As a result of these moves and counter-moves, and despite Russia's displeasure with Tajikistan's maneuverings back and forth among Washington, Beijing, and Moscow, Russia resumed negotiations with Tajikistan, leading to agreements by July. It appears that in return for a promise of support from Moscow for Rogun, both sides will negotiate the issue of Tajikistan charging rent for the base possessed by the Russian Army's 201st division. Moscow also agreed that while it would finance Rogun, the project must be delayed to allay Uzbek concerns. In return, both sides agreed to jointly operate the Sangtuda hydroelectric plant instead.¹⁴⁵ Tajikistan would also get electricity from Turkmenistan through Uzbekistan.¹⁴⁶ Thus Tajikistan and Russia found their way to a compromise solution where once again foreign, i.e. Russian resources, buttressed the domestic standing of Tajikistan's regime, while giving Moscow its leading position in Central Asia. Still, this episode shows just how costly that ambition is for Moscow to sustain and how hard it is for governments in the region to keep up the game in a time of economic crisis.

Indeed, the consequences of this episode were not long in coming. These games with Tajikistan drew Uzbekistan and Kazakhstan closer together because of their shared interests in ensuring they get water from Kyrgyzstan and Tajikistan. Because Tajikistan's wasteful use of water led

¹⁴³ "Open Source Center Feature-Uzbekistan-Russia: Karimov, Medvedev Both Achieve Goals At Meeting," *OSC Report*, FBIS SOV November 24, 2008 - January 28, 2009.

¹⁴⁴ Tashkent, *Narodnoye Slovo*, in Russian, March 6, 2009, FBIS SOV, March 6, 2009.

¹⁴⁵ Moscow, *ITAR-TASS*, in English, July 30, 2009, FBIS SOV, July 30, 2009; Aliya Samigullina, "Money For Bases," Moscow, *Gazeta.ru*, in Russian, July 30, 2009, FBIS SOV, July 30, 2009; "Tajikistan: Russian President Medvedev Arrives in Dushanbe For Talks," *Eurasia Insight*, July 30, 2009; Alexander Gabuyev, "Preliminary Lack Of Agreement. Dmitry Medvedev Decides To Consider Emomali Rahmonov's Visit "Preparatory,"" Moscow, *Kommersant Online*, in Russian, February 25, 2009, FBIS SOV, February 25, 2009; Sergei Blagov, "Russia Seeks To Boost ties with Tajikistan," *Eurasia Daily Monitor*, August 4, 2009.

¹⁴⁶ Moscow, *ITAR-TASS*, in English, August 22, 2009, FBIS SOV, August 22, 2009.

to blackouts in Kazakhstan in early 2009, on February 26, it left the unified electrical energy system of Central Asia, thereby negatively affecting the flow of electricity to Kyrgyzstan.¹⁴⁷ This move obviously represents a step away from regional integration which many believe is the only answer to these linked problems of water, electricity, energy etc.¹⁴⁸

Neither did this compromise really overcome Tajik-Uzbek differences, especially in view of Tajikistan's continuing poor economic performance. Thus in May-June 2009, due to nonpayment of debts, Uzbekistan again halved its gas shipments to Tajikistan.¹⁴⁹ It did so again in September, 2009.¹⁵⁰ As a result, Rahmonov is now urging his people to stockpile a two years' reserve of food.¹⁵¹ Clearly this situation cannot long endure without an explosion in Tajikistan and quite possibly more widely in Central Asia.

The regional crises due to energy and linked security rivalries do not end here. In particular Kyrgyz-Uzbek rivalries connected with the struggle by the great powers for bases and their willingness to support Kyrgyzstan have exacerbated those tensions to the point where Uzbekistan is building fortifications against Kyrgyzstan. Whereas Moscow sought to make itself Bishkek's sole patron, the Kyrgyz government turned around and renegotiated a deal for the air base at Manas with Washington, thereby incurring Moscow's ire. Moscow evidently forced Kyrgyzstan to accept another Russian base even though no need for one has been demonstrated. Consequently, Kyrgyzstan chose to situate that base in the Ferghana Valley, where it could monitor and check Uzbek activities, thus triggering Tashkent's displeasure. Thus the endless maneuvers of the New Great Game both among the great powers and among Central Asian states continues.

Conclusion

Clearly, neither water nor energy are the only issues of note in Central Asia. But it is equally clear that everything connected with those subjects is a major issue in the domestic, regional and international politics of the region. This is as true for water as it is for oil and gas. European institutions are already voicing their opinions on the subject. Virtually everyone writing on this issue argues that regional integration is the only

¹⁴⁷ Moscow, *ITAR-TASS*, in English, February 26, 2009, *FBIS SOV*, February 26, 2009.

¹⁴⁸ Almaty, *Aykyn Apata*, in Kazakh, April 30, 2009, *FBIS SOV*, April 30, 2009.

¹⁴⁹ Dushanbe, *Avestai*, in Russian, June 16, 2009, *FBIS SOV*, June 16, 2009; Moscow, *Interfax*, May 20, 2009, *FBIS SOV*, May 20, 2009.

¹⁵⁰ Dushanbe, *Avesta* in Russian, September 2, 2009, *FBIS SOV*, September 2, 2009.

¹⁵¹ Dushanbe, *Tajik Television First Channel*, in Tajik, July 27, 2009, *FBIS SOV*, July 27, 2009.

way to resolve these issues.¹⁵² But nobody has yet shown a convincing reason why, given the present realities this integration should occur, nor how it will proceed over the likely objections within Central Asian governments and among the key great powers with vital interests here. That task is beyond the scope of this paper as well. What is clear now is that water, electricity, and energy issues cut across domestic and, regional, and international issues throughout Central Asia and that progress on creating viable and enduring regional cooperation is intimately connected with major changes at all three levels of Central Asia's politics. Until a way is found to achieve progress that links together these three levels, it is almost impossible to visualize how more equitable water policies and energy policies affecting Central Asia may be imagined.

The ability to exploit international rivalries, Central Asia's heightened strategic importance, and internal energy assets has allowed these states to ward off internal threats and to grow their economies quite steadily from 2000 until 2008. Economic growth creates more stability and narrows politics to an elite struggle as the Turkmen succession demonstrated. The spectacular growth of Kazakhstan has even allowed it to think beyond the region and see itself in a broader Asian security context.¹⁵³ It is arguable that one reason for the continuing survival of these regimes in their authoritarian form is their unceasing ability to secure resources from external and stronger sources and use these resources to deal with the problem posed by the "reversed anarchy" they see in their own states. As the New Great Game continues to intensify, for the foreseeable future, Central Asian governments will be able to keep extracting those resources from abroad. Arguably, Russia is being forced to pay ever more for the illusion of neo-imperial dominance it so desperately seeks.¹⁵⁴

Nonetheless, these states must keep finding ways to generate economic development and rents for the elites in order to satisfy the eternal internal competition among clans, factions, and tribes that

¹⁵² Beatrice Mosello, "Water in Central Asia: A Prospect of Conflict Or Cooperation?" *op. cit.*, pp. 165-167; Ben Slay, *Water, Energy, and Food Insecurity In Central Asia*, CEPS and UNDP Conference, Brussels, March 3, 2009; Natalia Mirimanova, "Water and Energy Disputes Of Central Asia: In Search of Regional Solutions,?" *EUCAM Commentary*, <www.eucentralasiaeu.org>, Center for European Policy Studies, Brussels, February, 2009, <www.ceps.be> (April 10, 2010); Meis Omarov and Noor Omarov, "Central Asia in the Foreign Policy of Russia, the United States, and the European Union," *Central Asia and the Caucasus* 3, 57 (2009): 74-75.

¹⁵³ Erica Marat, "Soviet Military Legacy and Regional Security Cooperation in Central Asia," *China Eurasia Forum* 5, 1 (2007): 93.

¹⁵⁴ Stephen Blank, "Turkmenistan: Turning the Tables on Russia," *Eurasia Insight*, February 6, 2008.

dominates Central Asian politics.¹⁵⁵ Absence of these benefits cannot be compensated by skill at managing these challenges and vice versa. In other words, even though the external rivalries facilitate the transfer of resources to Central Asia or of capabilities that allow these states to increase the resources at their disposal and meet their most urgent domestic challenges will continue, so too will the domestic threats to security that demand the assignment of those resources to them. Indeed, the domestic threats may even grow if institutions and policies cannot keep pace with them. And if, as the reigning paradigm suggests, those policies and institutions cannot keep pace, then all the foreign interest in the world will be of little help. Water and energy policies express these dilemmas in particularly stark ways and illuminate the multiple dilemmas of Central Asian security. Despite the interests of other regional governments and the great powers, should economic, water, and energy issues not be resolved, no foreign bayonets or power will then be there to rescue rulers from their follies or their people from the consequences of those follies.

¹⁵⁵ Kathleen Collins, *Clan Politics and Regime Transition in Central Asia* (Cambridge: Cambridge University Press, 2006), pp. 297, 302; E. Wayne Merry, "The Politics of Central Asia: National in Form, Soviet in Context," Daniel L. Burghart and Theresa Sabonis-Helf, (eds.) *In the Tracks of Tammerlane: Central Asia in the 21st Century* (Washington, D.C. National Defense University Center for Technology and National Security policy, 2004), pp. 36-42; "Uzbekistan Heads Towards Violent Regime Change," *Jane's Intelligence Review*, July 1, 2005, <www4.janes.com/subscribe/jir/doc> (April 1, 2010); Eugene B. Rumer, "Central Asian Leadership Succession: When, Not If," *Strategic Forum*, Institute for National Security Studies, National Defense University, Washington, D.C., 2003; "Turkmenistan Faces a Crisis of Leadership-Experts," *Eurasia Insight*, May 25, 2006; John Glenn, *The Soviet Legacy in Central Asia* (New York: ST. Martin's Press, 1999); Edward Schatz, *Modern Clan Politics: The Power of "Blood" in Kazakhstan and Beyond* (Seattle, Washington: University of Washington Press, 2004).

“Misunderstanding”: A Road to Nowhere – Reflections from Tajikistan

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ABSTRACT

Many analysts agree that, in the next few years, Central Asia will become a key region of the world. This is associated with the growing extraction of energy resources in the Caspian and the fact that 10 percent of all the world's oil reserves and over one-third of the world's uranium reserves reside in the region. Moreover, there is the military-strategic position of Central Asia and Kazakhstan as the “heart of Eurasia.” Therefore, this dynamically developing region has become the arena for clash of major world centers of power.

Keywords • Central Asia • Transit Capacities • Military-strategic Position • Shanghai Cooperation Organisation • Caspian energy • Energy Security

Introduction

The Central Asian question is no more the same as it was in the 1990s. No one speculates anymore that it was inevitable that the region would descend into anarchy. There are many problems related with transition economies, economic growth, foreign investments, crash of commodity prices, and very poor regional cooperation. However, the Central Asian states have created much strategic space around them so that they can maneuver to their best advantage. They have made it obligatory for outside powers to negotiate with them - be it regarding military bases on

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¹ Uzbekistan consumes around 97 percent of Zarafshan water flow. Therefore Uzbekistan's concern is that Zarafshan river infrastructure would be damaged if Tajikistan erect dam on the river.

lease, the price of natural gas, access routes to Afghanistan or partnerships with collective security bodies.

Of the four major players active today, two “external” parties - the United States and EU - insofar as they have no shared borders with the region while the two others - Russia and China - are neighboring countries. Russian influence has been historical and remains preponderant. The United States has had its ups and downs in the more recent past, but remains tenacious about expanding its presence. China, on the other hand, has had an extraordinary run in making its way to the top rungs of the big league operating in the region. The EU has just entered the region and is adjusting its policy towards Central Asia. President Sarkozy’s visit to Kazakhstan where a number of important documents were signed, which touched on energy issues, is a good example.

Importance of the Central Asian Region

After the start of military action in Iraq, it became evident that industrially developed countries needed alternative regions, which could provide them with energy sources. The crisis that can take over such countries was demonstrated by the “Gas War” between Russia and Ukraine in the beginning of 2009. The conflict forced the key players to review their policies in Central Asia. All the key states are following the development of relations between their “partners” and the Central Asian countries with a certain amount of jealousy.

Every key player (Russia, the U.S., the EU, and China) has its own agenda with regard to Kazakhstan and Central Asia. Therefore, the dynamically developing region has become the arena for clash of major world centers of power. There is the European Union, which is interested in energy resources that are independent from Russia; and there is China, which views Kazakhstan as a nearby energy storehouse; and the United States, which is increasing its military presence in the region. Until recently, Moscow considered Central Asia a boondocks, “which would not go anywhere” from Moscow. The significance and importance of this region - in which until recent times no one could challenge the presence of Russia - are too great. Many analysts agree that, in the next few years, Central Asia will become a key region of the world. This is associated not only with the growing extraction of energy resources in the Caspian. Ten percent of all the world’s oil reserves and over one-third of the world’s uranium reserves are certainly not a little.

However, there are also two other reasons. There are, first, the huge and far-from-developed transit capacities of the region, and the military-strategic position of Central Asia and Kazakhstan as the “heart of Eurasia.” Control over the region makes it possible to simultaneously exert pressure on Russia in its Siberian transport centre; on India from

the direction of Kashmir; on Iran from the direction of its Turkic northern provinces; on China from the direction of the Xinjiang-Uygur region, Tibet, and even Inner Mongolia. Therefore, control over Kazakhstan and Central Asia is a most important link in the strategy of global hegemony of the U.S. and its allies. The first priority task of the United States is to ensure military-strategic control over patronage of all of the projects in the new Central Asia on extraction of energy resources - oil, gas and uranium.

In this context, Moscow believes that the region of Kazakhstan and Central Asia must be viewed not as a set of provincial states, balancing between the global "power centers," but as a key link in Russian foreign policy. The fate of Russia-Kazakhstan relations will largely determine the economic future, political stability, and even territorial integrity of the Russian Federation. However, Russia has still not exhibited persistence and consistency in implementing its strategy in this most important region.

The U.S. seems to have its strategy and hopes to remodel the region. The regional challenge that the U.S. encounters in Central Asia is twofold: first, Russia's resurgence; and second, China's rise as a world power. The U.S. has been so far focusing on Russia, while carefully watching the implications of the lengthening shadows of China. In the U.S. understanding up until recently, a strategic alliance between Russia and China in Central Asia within the framework of the Shanghai Cooperation Organisation (SCO) was a long way from materializing and there was scope to work on the differing priorities of Russia and China within the SCO. The U.S. underestimated the SCO potential capacity. Less than three years ago, a leading expert on the Central Asian region described the SCO as "little more than a discussion forum". The expert said: "Today, the Shanghai Cooperation Organisation does not pose any direct threat to U.S. interests in Central Asia or in the region more generally." That was a debatable point even three years ago, and is more so now. What seems to have happened is that the U.S. simply has had no choice but to learn to live with a unique regional organization that insists on keeping it excluded. Unsurprisingly, the U.S. strategy has been pursuing a differentiated approach toward China aimed at creating a wedge between Russia and China, which would prove the nemesis of the SCO. This indeed helped Washington to focus on the immediate task in hand, namely, to roll back Russia's traditional stature in the region, which was standing right in the way of the expansion of U.S. influence there.

However, this state of play may be about to change - or "the process may already have begun" (as Mr. Gorbachev used to say) - even as China's rapid expansion of influence in the region and its deep access to the region's energy resources in particular are beginning to hurt Western

interests. An historic watershed is indeed approaching in the region's transition by the end of 2009 when the 7,000-kilometer natural gas pipeline leading from Turkmenistan through Uzbekistan, Kyrgyzstan and Kazakhstan and up to China's Xinjiang becomes operational. China has also taken an early lead in gaining access to Turkmenistan's Yolotan-Osman gas fields, apart from its strategic gains in energy cooperation with Kazakhstan and Uzbekistan. To be sure, the West is rattled as its own prospects of gaining access to the Caspian energy come under threat. Turkmenistan, in particular, is viewed as a major source of gas for the European Union's proposed Trans-Caspian projects, which the U.S. has been promoting as a means to reduce Europe's energy dependence on Russia. But the West has no effective answer to the growing Chinese influence in Central Asia. Certainly, the U.S. is hard-pressed to find "counterweights" to challenge China's profile as an all-round stakeholder in the region.

In contrast with the United States with its financial crisis, Central Asians see China as a rising power with capital surplus and financial muscle and a properly defined strategy towards the region and its problems. Thus, China is buying up the region's resources and breaking into Soviet-era industries that have been in a state of serious disrepair. China complicates Western aid efforts by undertaking projects across the board. U.S. companies do not build railways or pipelines or highways and dams. They do not do energy infrastructure, but they focus on the extractive sectors - oil, gas, minerals - and the Central Asians take note of the West's exploitative instinct. Beyond oil, U.S. companies are shirking opportunities in the region. Except for oil, where investment money goes in regardless, there hasn't been much Western investment in recent years.

To sum up, Central Asia is still a region of crisis, whereas to China it is a region of opportunity with which the fortunes of China's "Go West" policy is closely intertwined in political, strategic and economic terms. China and Russia have also been harmonizing their regional policy in Central Asia and no serious contradictions have surfaced.

The expansion of the North Atlantic Treaty Organization (NATO) will be of profound consequence for the geopolitics of the Central Asian region. The expansion essentially reflects the American strategy. The U.S. prefers that NATO deals with Central Asian capitals on a bilateral basis which will not concede any regional leadership role for Russia or legitimize the aspirations of the Collective Security Treaty Organization (CSTO) and the SCO as organizations integral to regional stability and security. Over the past two-year period, Moscow has rapidly built up the CSTO as a bulwark against NATO in Central Asia.

Developments in Central Asia

Of late, the great game, which has been keenly pursued in Kazakhstan, Uzbekistan and Kyrgyzstan, has spilled over into Turkmenistan and Tajikistan. The change of leadership in Ashgabat in 2007 has provided an opportunity for the U.S. to modulate that country's policy of "positive neutrality" in favor of greater engagement with the West. The prospects for sourcing Turkmen gas for the Trans-Caspian projects have significantly improved. Turkmenistan also offers transit facilities for the U.S. to ferry supplies to Afghanistan. Ashgabat is steadily moving out of the Russian orbit and edging closer to the United States. The Turkmen efforts to directly access the world energy market without the Russian middleman can have a domino effect on other energy producing countries in the region. In turn, it holds the potential to erode Russia's overall standing in Central Asia and to render ineffectual the Moscow-led regional integration processes.

But what is unfolding over Tajikistan is vintage great game from the 19th century. Tajikistan's importance has increased as a gateway to Central Asia for the U.S. influence entrenched in Afghanistan. Tajikistan's strategic importance can't be understated:

- It is a corridor leading to the turbulent Ferghana Valley.
- It borders Xinjiang.
- It is a hotbed of militant Islam.
- It is an oasis of Iranian (Persian) culture.
- It controls the region's watersheds.
- It is a principal route for drug traffickers.
- It is Russia's furthest military outpost on the territory of the former Soviet Union.

Over and above, of course, Tajikistan is integral to the stabilization of Afghan polity, while Tajik nationalism can be a potent weapon in the hands of Uzbekistan's adversaries. Thus, for any number of good reasons, keeping Tajikistan away from the orbit of traditional Russian influence has become a key objective of U.S. diplomacy.

The U.S.'s so-called "Great Central Asia" strategy under the George W. Bush administration aimed at drawing the Central Asian states away from the SCO toward a regional cooperation arrangement with the South Asian region. However, trans-border infrastructure projects of the sort envisaged in the U.S.'s "Great Central Asia" strategy can be advanced only if intra-regional relations between the countries of South Asia and their equations with the U.S. pan out.

As we can see, differences between the key Central Asian partners do not allow for a coordinated strategy regarding the region. Such a condition does not facilitate the strengthening of stability and

understanding in the Central Asian countries. The leadership of each country tries to forward its own interests without considering the neighboring countries. Let us note a fact to prove the point: the Kazakh and Uzbek presidents are against electricity export plans from Kyrgyzstan and Tajikistan. Meanwhile, Pakistan and Afghanistan leaderships are interested in electricity transmission projects. Thus, President Hamid Karzai of Afghanistan and President Asif Ali Zardari of Pakistan on May 8, 2009 issued a joint statement pledging their support for a proposed US\$680 million regional electricity transmission project that would supply summer surplus power from Tajikistan and Kyrgyzstan to the Afghan capital of Kabul and the north west of Pakistan. The joint statement on the Central Asia South Asia Electricity Transmission and Trade Project (CASA 1000) was issued after a meeting in Washington DC with the World Bank Group President Robert B. Zoellick. This is the first phase of a program to create a regional electricity market by facilitating electricity trade between the energy-resource rich countries of Central Asia, and the energy-deficit countries of Afghanistan and Pakistan in South Asia. A transmission link from Uzbekistan to Afghanistan was opened recently, and the planned CASA 1000 project will link Tajikistan and Kyrgyzstan to South Asia. The World Bank is consulting with all Central Asian countries about the proposed CASA 1000 project and other such development programs. The project will be implemented in a way that protects the environment and the water resource needs of the region.

The planned Project would develop the necessary physical infrastructure and create the institutional and legal framework to transmit surplus power available from existing generation facilities in Tajikistan and the Kyrgyzstan to Afghanistan and Pakistan. The physical infrastructure for CASA 1000 is likely to include: a 500 kV High Voltage Direct Current (HVDC) transmission system between Tajikistan and Pakistan through Afghanistan; an AC transmission link from Kyrgyzstan and Tajikistan to connect to the HVDC line from Tajikistan to South Asia; as well as the necessary electricity sub-stations in Kabul, Peshawar and Sangtuda (in Tajikistan). The Joint Statement said the two Presidents "recognized that the completion of CASA 1000 - which is being designed to accommodate an expanded volume of power in the future - will catalyze additional energy investments and trade both in the four CASA countries as well as in the region, and that it could have a positive demonstration effect for other regional infrastructure projects between their two countries".

The worry of the leaders of the downstream countries is easy to explain: they are worried that if Tajikistan and Kyrgyzstan raise their energy production, their populations will face water severe shortages. This is why it is important to decide the rules of water usage and

providing water resources (an example of it existed during the Soviet times and even in the beginning of 2000s), and not to turn disagreements on water and energy sources into a political issue.

The following is an example of accusations dating to March, 2007: Disputes on water resources demonstrate tense relations between Tajikistan and Uzbekistan. In March 2007 Mr. S. Sharipov, the Director of the Strategic Research Centre of Tajikistan, stated that a possible shortage of water in neighboring countries (namely Uzbekistan) after the construction of hydroelectric power stations in Tajikistan is a myth. Tajikistan claims of hydroelectric energy resource usage at 15 percent. If hydroelectric power stations would operate, Tajikistan would use only 42-45 percent of the water resources. Tajikistan accuses Uzbekistan and Turkmenistan of insufficient water management saying that up to 50 percent of water is wasted in steppes and deserts. Tajikistan believes that the construction of the hydroelectric power stations do not pose any threat to Uzbekistan in particular, and Central Asia as a whole. But, the water issue will be the most sensitive question in Tajik-Uzbek mutual relations and it will take at least some seven to ten years to overcome the deadlock in Tajik-Uzbek dispute.

Another example: China implements a safe policy in Central Asia to not harm interests of other countries in the region. Thus, China abstains from building Tajik power plant on the river of Zarafshan in Soghd Province. It seems that China refrained from building the hydroelectric power station because the neighboring country - Uzbekistan - is against the construction of the power plant there.¹ Tajikistan and China signed an agreement on the construction of the Zarafshan hydroelectric power station in Soghd Province in January 2008. Uzbekistan expressed its protest through several channels. Beijing heard the message and does not wish to ignore it as Uzbekistan is a regional power. So the problem of Zarafshan has shifted from an economic issue to a political one.

Life demonstrates that it is necessary to make agreements and not to turn technical questions into a political issue. Surely, it is not an easy task to arrive at a compromise in a dry region. Let us remember, for example, that it took decades for the U.S. and Canada to make an agreement on water resource usage.

The risks of tensions over water and energy resources to the regional countries can be summed up as follows:

- Political and economic sanctions;
- Creation of “insider” and “outsider” alliances;
- Latent conflicts on the borders;
- Open conflicts (which is not likely).

In other words, the water and energy shortages should be viewed as a danger to stability in the region. Who will suffer the most? Most likely, it will be the population of the countries, especially those who are not well off.

What scenario is possible in this situation? It is widely known that the governments of the Central Asian region are unable to create enough jobs as a result of the economic crisis. This is why a huge number of the population of the region (Uzbekistan, Kyrgyzstan, and Tajikistan) annually goes for seasonal jobs in Russia and Kazakhstan. How long can this continue? It seems that after a while the migrants workers will stay in Russia and Kazakhstan and receive permanent and better paying jobs. Many of the migrants did not return home last autumn; they even took their families with them because they were afraid of a severe winter. This is a very dangerous symptom for Tajikistan.

Furthermore, due to the shortage of financing, the financing for petroleum and technical staff for irrigation system is not maintained properly, which is why the earth fertility is significantly low. It becomes apparent, that there is not much money in agriculture. If this trend continues, the *dehqāns* (farmers) will be looking for a better life, and going to other countries for work. I am sure that the more active and qualified citizens will find their niche.

Central Asia knows these things from its own past. As a result of Mongol invasion in the 13th century, the Dargam canal, which supplied Samarqand with water, became unusable. As a result of which, the City became empty. Tamerlane, who came to power in the next century, restored the Canal, and returned Samarqand its glory.

During the Soviet times, a canal was built in Beshkent District (not far from the Afghan border) and virgin soil was worked on. The water-usage system was damaged as a result of the civil war. The population left the villages. Three to four years ago, the government tried to return the villages back to life, and placed migrants there, and gave them limited financial means. However, the government did not fix the water system. The populations of these villages made 10-15km trips to get water. After three years of waiting for improvements, the migrants left the places.

Let us now imagine the picture throughout Tajikistan. The irrigational system is not serviced as it should be. What is awaiting us in the long term? What will happen if the village population will leave its places? Where will they go? Will they be able to find a job in the cities, if the industrial companies will face sharp shortages in electric resources and electric energy? Will they continue to support the government? Which movements will they join?

I am sure that under such a scenario, the less-educated village population will be an easy prey for different radical and extremist movements. The radical and extremist groups hold such a work in the

region and in Tajikistan especially. The leadership of the regional countries has stated their concern about this many times. However, the situation will not be getting better in the region, if the governments of the region will not be holding a balanced and thoughtful policy on religion and religious leaders. For example, a recent press item of possibly dubious validity cited the court of one of the Kazakh cities as recognizing a number of the Surahs (chapters) of the Qor'an as extremist literature.² If this is really the case, such a decision gives the strongest blow on the image of the country's leadership, and gives extremists strong arguments. I do not blame the servants of the Justice Lady of Kazakhstan. They are only following the Soviet stereotypes, when religious propaganda was equal to anti-government work. Taleban fighters became visibly stronger in the north of Afghanistan recently. Security forces of Tajikistan have expressed their concern about this. The First Deputy of the Minister of Defense of Tajikistan, Ramil Nadyrov expressed his concern over the activities of the Taleban movement in the northern borders of Afghanistan and in Tajikistan's southern frontiers on September 17, 2009 during the meeting of the Commanders and the Headquarters of the Central Asian Quick Response Forces of the CSTO. He stated that the recent military operations of the Afghanistan armed forces and NATO in Kunduz against the Taleban fighters can have an effect on Tajikistan. He stated that “It can make the Taleban move to our territory, and we have to be ready for such a turn of the situation.”

Let us imagine now what will happen if extremist organizations and movements are able to attract the citizens of Tajikistan. The process has already started. The arrests of Tajik citizens who are involved with the Islamic Movement of Uzbekistan (IMU has close ties to the Taleban and Al-Qaeda) is mentioned in the press. Moreover, there is information that the IMU fighters have concentrated in the northern borders of Afghanistan, and are looking for contacts on the other side: the territory of Tajikistan, Uzbekistan, and perhaps Turkmenistan.³

If the situation in Afghanistan will not be improving, if the crisis will not end in Tajikistan (and most importantly energy security is not reached), there will be threats of people leaving villages and the country as a whole, radicalization of the population, and the infiltration of the extremist organizations.

² “Kazakhstan stal pervoi stranoi v mire, kotoraiia ofitsial'no zapretila Koran [Kazakhstan became the first country in the world to officially prohibit Koran],” *Centrasia.ru*, September 30, 2009, <<http://www.centrasia.ru/newsA.php?st=1254284460>> (September 30, 2009).

³ In May of 2007, the news outlets informed about a clash between the IMU fighters and tribal armed groups of the Swat Province (Pakistan), underlined that up to forty Turkmens are fighting on the side of the IMU.

Conclusion

What can all this mean for the future? Left out villages in the far away districts of Tajikistan can be used by different extremist organization as the location for their bases and tanks, centers for the training of fighters and terrorists, and laboratories for the production of explosives and narcotics.

As we can see, the energy security of the country is connected to security in general. In order to prevent the situation from turning negative, coordinated and well-formed actions need to be taken by all the countries. They are as follows:

- Partner states (USA, Russia, EU, China, and India) need to make an agreement about the number and the route of transportation of energy.
- Partner states should aid the regional countries to form new rules of receiving energy, as well as water usage.
- Partner states should always be objective and not be prejudiced, while solving problems.
- The regional countries should take into account the interests of their neighbors in the area of energy resources, and to always be ready for reasonable compromises.
- The countries states should reach energy security, but not while harming their neighbors.
- The countries' leaderships should reject their political ambitions, and choose pragmatism as their creed.

Central Asia in the Context of Japanese-Russian Relations

Yuasa Takeshi^{*}

ABSTRACT

For Central Asian countries, Japan is a reliable partner with huge economic power, although Japan has not proposed any clear political strategy nor taken a consistent policy approach toward the region. The main purpose of this article is to outline the triangular relationships that exist between Japan, Russia, and Central Asia, and to figure out the characteristics of these relations from a Japanese perspective. Japan understands that the stabilization of Central Asia is directly linked with global security.

Keywords • Central Asia • Japan • Russia • Post-Soviet • Energy supply • Bilateral Relations • Triangular Relations • Eurasian Diplomacy

Introduction

Two decades have passed since the post-Soviet Central Asian states (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) gained their independence. They are on their way to establishing their own identities in terms of foreign policy, not only at the state level but also at the regional level. Although these Central Asian states, as individual actors in the international society, have found new partners in the Middle East, Asia, and EU countries, they have tried to balance their foreign policy with keeping their vital relations with their former

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¹ Yuasa Takeshi, "Japan's Multilateral Approach toward Central Asia," in Akihiro Iwashita (ed.), *Eager Eyes Fixed on Slavic Eurasia: Volume 1, Russia and Its Neighbors in Crisis*, 21st Century COE Program Slavic Eurasian Studies No. 16-1 (Sapporo: Slavic Research Center, Hokkaido University, 2007), pp. 65-84; Christopher Len, Uyama Tomohiko, Hirose Testuya (eds.), *Japan's Silk Road Diplomacy: Paving the Road Ahead* (Washington, D.C.: Central Asia-Caucasus Institute and Silk Road Studies Program, Johns Hopkins University-SAIS, 2008).

suzerain, Russia, both in the political and the economic spheres. In this context, for Central Asian countries, Japan is a reliable partner with huge economic power even though it is located on the rim of Eurasia. However, Japan has not proposed any clear political strategy towards Central Asia, nor has it taken a consistent policy approach towards the region.¹

Japan cannot ignore Russia when it constructs policies dealing with Eurasia. Russia is a special subject for Central Asian nations because of its history with them. Though Russia enjoys its role as former suzerain, Central Asia is the new frontier for Japan's diplomacy. When Japan created its new foreign policy strategy, particularly its approach to Eurasia in the post-Cold War international order, argument was inevitable on the position of Central Asia in the context of Japanese-Russian relations. Japan's initiatives during the post-cold war period, such as Eurasian Diplomacy in 1997, the Central Asia plus Japan Dialogue since 2004, and the Arc of Freedom and Prosperity in 2007, have been conscious of the Russian presence in the region. Russia has also reacted for or against these Japanese initiatives.

The main purpose of this chapter is to outline the triangular relations that exist between Japan, Russia, and Central Asia in contemporary international politics, and to figure out the characteristics of these relations from the Japanese perspective. In order to delineate these relations, I first survey Japan's multilateral approach towards Eurasia (including Central Asia) since the 1990s, while keeping in mind the bilateral relations between Japan and Russia - especially the territorial disputes regarding the possession of the Habomai, Shikotan, Kunashiri, and Etorofu in the Kuril Islands (which Japan calls its "Northern Territories"). For Japan, these islands form an unsettled boundary zone that belongs to them, or in other words a Japanese geographical gate towards Russia. The peculiarities of Japan-Russia relations during and after the Cold War era have been condensed in these islands. We should pay attention to them as a representation of the Japanese approach to Eurasia. As I argue later, the territorial disputes developed drastically in the second half of the 1990s. Dialogue, however, has cooled down in the twenty-first century, although bilateral economic relations have been remarkably enhanced. Central Asia may be the key factor that settles these complicated bilateral relations in the context of geographically wider international relations. In the future, energy cooperation, including peaceful use of nuclear energy, will be an example of cooperation for further development between the countries.

Immature Multilateral Approach toward Eurasia

Central Asia in the “Multilayered Approach”

At the beginning of the 1990s, Japan did not have a clear diplomatic strategy for Central Asia. Hirose Tetsuya, the first Director of the Newly Independent States (NIS) Division at the Ministry of Foreign Affairs of Japan, confessed frankly that the Japanese diplomatic staff was in the situation of “thinking on the run,” since “Japan’s NIS diplomacy initially suffered from poor preparation due to limited funds” and limited information on these countries. Several important missions to Central Asia had been completed during the first half of 1992, such as Vice-Minister of the Ministry of Finance, Chino Dadao’s visit to Uzbekistan (February) and Foreign Minister Watanabe Michio’s visit to Kyrgyzstan and Kazakhstan (April and May). However, these first steps of Japan’s diplomacy towards Central Asia were considered a part of the general approach of supporting the regime transition of the post-Soviet countries. Traditional methods, including Official Development Assistance (ODA), were employed in these approaches². Japanese governmental staff engaged in the region in the beginning might have felt nostalgic in Central Asia and especially in Uzbekistan and Kyrgyzstan: they might have sympathized with Central Asian societies that share similar characteristics with Japanese societies, like a close network of kinship, *Mahalla* (ward society), and respect of and precedence to elders. Moreover, some Japanese likened the newly independent Central Asian countries to the Japan of the Meiji Restoration era in the middle of the nineteenth century. Although it may not have been an appropriate comparison, it caused the older Japanese generation to imagine serious state-building in the region. During the first half of the 1990s, Japanese economic assistance to Central Asia had been constructed by generally depending “on chance and personal influence”³ with senior governmental staff, regardless of which country they supported.

The “Eurasian Diplomacy” speech by Prime Minister Hashimoto Ryutaro in July 1997 was a sign of the Japanese multilateral approach to the whole Eurasian region, including Central Asia (which, along with the Caucasus republics, was named “the Silk Road region”). It also gave the

² Hirose Tetsuya, “Japan’s Diplomacy in Central Asia: The Perspective of a Working-Level Policy Maker,” in Christopher Len, Uyama Tomohiko, Hirose Tetsuya (eds.), *Japan’s Silk Road Diplomacy: Paving the Road Ahead* (Washington, D.C.: Central Asia-Caucasus Institute and Silk Road Studies Program, Johns Hopkins University-SAIS, 2008), pp. 178-180.

³ Uyama Tomohiko, “Japanese Policies in Relation to Kazakhstan: Is There a ‘Strategy’?” in Robert Legvold (ed.), *Thinking Strategically: The Major Powers, Kazakhstan, and the Central Asian Nexus* (Cambridge, MA: American Academy of Arts and Sciences / MIT Press, 2003), p. 168.

Japanese government a chance to develop its systematic support of Central Asia.

It is noteworthy that Hashimoto put the improvement of relations between Japan and Russia as top priority in his speech. At the beginning of its multilateral approach to Eurasia, Japan faced the impending task of making a breakthrough in the settlement of its territorial disputes. In his speech, Hashimoto proposed to deepen bilateral relations with Russia, including focusing on the resolution of the Northern territories issues. He stressed three principles in the construction of relations: trust, mutual benefit, and long-term perspective. It was rather an immature signal that created the misunderstanding on the Russian side that Japan had changed its policy to promote economic cooperation and a peace treaty by putting aside the territorial issue⁴. However, the speech was a turning point in Japan's "multilayered" approach to Japanese-Russian relations, i.e., promoting economic and security cooperation parallel to the territorial issue. Bilateral cooperation had been attempted in several areas, including support for the regime transition of post-Soviet countries, linkage for conflict resolution in the region, and consultation to stabilize Northeast Asian security. In his speech, Hashimoto included the idea that the stabilization of political order in Eurasia, including Central Asia, would lead to the improvement of Japanese-Russian bilateral relations.

After the "Eurasian diplomacy" speech, bilateral negotiations between Japan and Russia kicked off from the summit meeting in November 1997, in order to settle a peace treaty by the year 2000. This process was called the "Krasnoyarsk process" after the place of the meeting and it at once brought about an optimistic outlook in the Japanese mass media of the conclusion of the peace treaty in the near future. During the Cold War era, Japan stressed the illegal invasion by Russia of its Northern Territory. However, after the Krasnoyarsk process started, Japan shifted to the more constructive subject of border demarcation, rather than a criticism of Russian policies.

During the informal bilateral summit meeting in Kawana, Japan, in April 1998, Japanese hopefulness for the negotiation process reached a peak. According to news resources, there was a rather in-depth proposal from the Japanese side regarding the Northern Territory issue: the border line between Japan and Russia would be drawn north of the group of the four disputed islands, namely, between the Urup and Etorofu islands, and it would be tantamount to recognizing Japanese sovereignty over the four islands. Furthermore, Japan would acknowledge that Russia could continue to exercise transitional administrative rights over the islands. Although both parties had intended to negotiate these proposals

⁴ Hiroshi Kimura, *Distant Neighbors, Volume Two: Japanese-Russian Relations under Gorbachev and Yeltsin* (Armonk and London: M. E. Sharpe, 2000), p. 213.

confidentially at first, the proposals became known due to a leak by the Japanese mass media when President Boris Yeltsin alluded to them at the press conference after the summit meeting. Also, there was concern among parties that the Japanese side considered the issue of border demarcation more seriously while the Russian side paid more attention to the issue of administrative rights. The Japanese proposals, despite being a critical bargaining chip, were refused by the Russian side in the end. Instead, Russia proposed only a detour idea by letter when Prime Minister Obuchi Keizo, Hashimoto's successor, visited Moscow in November 1998. The Russian proposal was that both countries prioritize the conclusion of the peace treaty, and that the border demarcation be decided by another treaty⁵. Obuchi belonged to the same faction with Hashimoto in the governmental Liberal Democratic Party (LDP) of Japan, and was a true statesman, embodying the will of Hashimoto's "Eurasian diplomacy." However, Obuchi suddenly came down with cerebral infarction in April and passed away on May 14, 2000. Bilateral negotiation stagnated and the Krasnoyarsk process reached a complete *impasse*.

During the process, however, it is noteworthy that Japan discovered the importance of Central Asia while exploring its "multilayered approach" with Russia. Even during Obuchi's failed visit to Moscow, Prime Minister Obuchi and President Yeltsin signed the Moscow Declaration on Building a Creative Partnership in November 13, 1998, stating, as regional issues, their intention of cooperation with Central Asia and the Trans-Caucasus region⁶. For Japan, the focus on Central Asian countries was an accidental result of the collapse of the Soviet Union. However, Central Asia had inevitably become the new frontier of Japan's foreign and security policy after the end of the Cold War when Japan was searching for a new strategy based on the changing regional order that surrounded it. Speeches and comments made by Japanese governmental staff like Hashimoto's "Eurasian diplomacy" may be good evidence for the understanding of changing Japanese perceptions during the 1990s.

Proposes and Failures of Multilateral Approaches

The policy of "Silk Road diplomacy," one of Hashimoto's initiatives, evolved from the original approach of Japan covering Central Asian and the Caucasus countries, even after "Eurasian diplomacy" faded in the end

⁵ Sato Kazuo and Komaki Akiyoshi, *Kensho Nichi-Ro shunou koushou: Reisen-go no mosaku* [Inspecting Summit Meetings between Japan and Russia] (Tokyo: Iwanami Shoten, 2003), pp. 250-253.

⁶ Ministry of Foreign Affairs of Japan, "Outline of the Moscow Declaration on Building a Creative Partnership between Japan and the Russian Federation," November 13, 1998, <<http://www.mofa.go.jp/region/europe/russia/pmv9811/outline.html>> (April 15, 2010).

of the 1990s. Although the policies encouraged the development of Japan's ODA, the slogan of "Silk Road diplomacy" was never established as the multilateral strategy in the region. Before long, under the administration led by Koizumi Junichiro (who was not from the Hashimoto faction in the LDP), the Central Asia plus Japan dialogue (CAJ dialogue) kicked off, in the summer of 2004, as Japan's new multilateral approach. Even in this dialogue, several immature points came into prominence. For example, the dialogue has not continued regularly: At the time of writing this piece (September 2009), there were only two ministerial meetings, i.e., the de-facto supreme level meeting of the CAJ dialogue, after the dialogue started (one in 2004, and one in 2006). In November 2007, Aso Taro (who was in charge of the foreign ministry after the last period of the Koizumi administration) and his team proposed a geographically enhanced multilateral initiative, the Arc of Freedom and Prosperity (AFP). It was the antithesis of the "arc of instability," upon which the George W. Bush administration had proposed the first Quadrennial Defense Review in 2001. In Aso's definition, the AFP was a geographical term, referring to the region along the rim of the Eurasian continent, including the ASEAN countries, Central and South Asia, the Middle East, the Black Sea region, and Central and Eastern Europe. Also, it meant an initiative for Japanese foreign policy to construct stable regions, based on "universal values" like democracy, in this geographical area. In this sense, the AFP stressed "value-oriented diplomacy" as the important pillar for Japanese diplomacy. However, the AFP was also not a continuous initiative, and it suddenly faded after the resignation of Foreign Minister Aso in August 2008⁷.

In September 2008, after his several challenges while being a candidate for the LDP leader position, Aso was finally nominated to the post, that is, to the new prime minister. The main reason of pushing him up to being the new party leader was his high name-recognition level and popularity, rather than his policies. LDP members considered Aso to be the ideal icon for the forthcoming parliamentary election campaign. Prime Minister Aso had hesitated to recommend his ideas on the AFP or "value-oriented diplomacy" towards Eurasia, due to fear of rejection from China. Japan had tried to reconstruct political relations with China, which had been bitterly criticized when Koizumi was in power, especially regarding his visit to the Yasukuni Shrine, given the background of disputes on historical understanding of Japan's imperialistic expansion until the end of the Second World War. Aso made it a priority to develop

⁷ Yuasa Takeshi, "Consolidating 'Value-Oriented Diplomacy' towards Eurasia? 'Arc of Freedom and Prosperity' and Beyond," in Christopher Len, Uyama Tomohiko, Hirose Testuya (eds.), *Japan's Silk Road Diplomacy: Paving the Road Ahead* (Washington, D.C.: Central Asia-Caucasus Institute and Silk Road Studies Program, Johns Hopkins University-SAIS, 2008), pp. 47-65.

a “mutually beneficial strategic partnership” with China to erase China’s distrust of Japan. In this sense, it was too risky for Aso to stress the AFP initiative while trying to improve relations with China as the initiatives encouraged a more democratic political regime in the region⁸.

During his term in office of about one year as Japanese prime minister, Aso referred to the AFP only twice. The first was in his presentation at the World Economic Forum in Davos, on January 31, 2009. After setting forth the strong conviction that “the pursuit of economic prosperity and democracy will lead to peace and happiness,” Aso suggested that the AFP was linked with his conviction⁹. The other reference was in his speech at a forum organized by the Japan Institute of International Affairs (JIIA)¹⁰ in the end of June, 2009, just before the G8 summit meeting in L’Aquila, Italy. In the speech, Aso stressed his policy results in the two-and-a-half years since his proposal of the AFP. He then introduced a brand-new initiative towards Central Asia: The Initiative of a Eurasian Crossroads. Aso envisioned the development of infrastructure for transportation like roads, railroads, and ports on the coast of the Caspian Sea, which would be the logistics and distribution route or corridor to “unite resource-rich Central Asia and the Caucasus in one whole region that includes Afghanistan and Pakistan which needs a foundation for the economy” and “the entirety of the Eurasian continent beginning at the Pacific Ocean and ending in Europe.” He also added that “China, India, Russia are important partners towards” the success of achieving synergistic effects in the region¹¹. His suggestion was not a fresh idea. During his service as Foreign Minister, Aso had proposed a similar policy in a speech in June 2006, just before the 2nd Ministerial Meeting of the CAJ dialogue. In this speech, he had already proposed to develop and maintain infrastructure from Central Asian countries to

⁸ For example, soon after his assumption as Prime Minister, Aso traveled to New York to participate in the General Assembly of the United Nations (September 25, 2008). He made a policy speech resembling his ideas during his term in office as foreign minister, touching on issues such as cease-fire in the Middle East, the Georgian conflict with Russia in 2008, and restoration assistance for Afghanistan. At that moment, however, he did not use the words of the AFP. Prime Minister Aso did not touch upon the “value-oriented diplomacy” either during his visit to China to attend the Asia-Europe meeting (ASEM) from October 24 to 25, 2008.

⁹ Special Address by H. E. Mr. Taro Aso, Prime Minister of Japan On the Occasion of the Annual Meeting of the World Economic Forum “My Prescriptions for Reviving the World Economy,” Congress Center, Davos, Switzerland, January 31, 2009, <http://www.kantei.go.jp/foreign/asospeech/2009/01/31davos_e.html> (April 15, 2010).

¹⁰ JIIA is known as the think-tank under the Ministry of Foreign Affairs of Japan, and it also arranged his first speech on the AFP in November 2006.

¹¹ “Japan’s Diplomacy: Ensuring Security and Prosperity,” Speech by H. E. Mr. Taro Aso, Prime Minister of Japan, June 30, 2009, <http://www.kantei.go.jp/foreign/asospeech/2009/06/30speech_e.html> (April 15, 2010).

Afghanistan, called the “southern route.”¹² Aso’s proposal might have been a message to Central Asian counterparts, in rivalry with similar ideas introduced by other major actors in the region like the initiative of the Trans-Asia Railway Network, or the so-called “Iron Silk Road” project, mainly supported by China, South Korea, and Russia. Moreover, Aso’s speech played a more important role as a message to voters in the forthcoming general election of the House of Representatives, the lower house of Japan. Since Aso had postponed the election with the excuse of prioritizing policies to reverse the cooling down of the national economy after the global financial crisis in 2008, the approval rating of the Aso administration declined critically. Aso, therefore, gave the policy speech a message of hope to appeal to public opinion to support his foreign policy. In his speech, Aso wanted to make a feint at the oppositional Democratic Party of Japan (DPJ) by insisting on his results and capabilities in recent Japanese diplomatic activities. He criticized the foreign policy initiatives of the DPJ in metaphors, saying that “in diplomacy and security, if you focus only on idealism while constantly opposing or expressing reservations about practical approaches, you will have no chance against the harsh realities of international societies.” However, his initiative was not approved in the results of the G8 summit meeting held immediately after the speech. Neither had it worked on Japanese public opinion, which was more interested in measures against the economic recession than in foreign and security policies. With the LDP’s crushing defeat at the general election in August 30, 2009, his plans for Central Asia fell through.

Japan’s multilateral initiatives towards Eurasia since the end of the Cold War had been proposed several times, but they had almost faded. The main reason was the political trends of Japan. In general, the time allotted for the statesmen responsible for foreign policy, like the Prime or the Foreign Minister, was too short for them to put their policies into practice and was restricted by frequent state-level elections and the strict rule of session system of the parliament. It was also related to the political system in Japan, which was based on the strong alliance of the LDP and on the bureaucracy since the Cold War period being fatigued¹³.

¹² Ministry of Foreign Affairs of Japan, “Central Asia as a Corridor of Peace and Stability,” Speech by Mr. Taro Aso, Minister for Foreign Affairs at the Japan National Press Club, June 1, 2006. <<http://www.mofa.go.jp/region/europe/speech0606.html>> (April 15, 2010).

¹³ We should note that this point is an institutional *impasse* for Japanese politics, and is related not only to Japanese foreign policy, but also to its domestic one. See, for example, the following comment by a leading scholar of Japanese politics: “The Diet (parliament) has been bound by the rule of session system strictly, and it never opens for a full year. (...) It is difficult to find the year that no important state-level election has been conducted. Whenever these state-level elections have been held, they have affected domestic politics inevitably. Furthermore, in some cases, the elections may be an obstacle

The new Prime Minister, Hatoyama Yukio from the DPJ, inaugurated on September 16, 2009, with the landslide victory of DPJ in the general election, clearly denied taking over Aso's concept on "value-oriented diplomacy," and recommended respect of the diversification of values in the international society.

Japan's Pragmatism in Central Asia

Oil and Gas from Far, Unpredictable Uranium

As mentioned above, contemporary Japan's approach to Central Asia and Eurasia sometimes displays its immature characteristics. However, this is not to the extent of necessitating a decline in Japan's presence there. There has been much progress in and outcome from each of Japan's bilateral approaches: Japan has been one of the main donors to most of the Central Asian countries since their independence. Although Japan reduced its ODA policy to set its own finances in order by cutting down expenses and to prioritize support of African countries, Japan kept its interests in stabilization and developments in the Central Asian region. The results of Japan's support of infrastructure in this region are becoming visible in the form of the renovation or new construction of airport terminals in Astana, Almaty, and Bishkek, and the railroad construction in southern Uzbekistan. Human resource development is another target of Japan's ODA to Central Asia, and it also has achieved results. Japan understands that the stabilization of Central Asia is directly linked with global security, and that providing the infrastructure for economic prosperity will relate to growing prosperity in the region¹⁴.

For Japan, energy supply issues also motivate its engagement in the post-Soviet region. For a long time, Japan has been over-dependent on the Middle East for the supply of oil and natural gas. After the lessons from the Oil Crisis of 1973-74 and the Gulf War in the beginning of 1990s, the Japanese government put forward the strategy of diversifying energy suppliers for the sake of Japan's energy security¹⁵. However, Central Asian countries may not be Japan's direct target regarding the issue. Geographically, Central Asian countries are not convenient suppliers of oil and gas for Japan because the distance between the countries makes it difficult to set a constant route for supply. Furthermore, many oil and gas fields in Central Asia are already under

to practice politics and to change political leaders." Sasaki Takeshi, *Seiji no Seishin* [On Political Motive] (Tokyo: Iwanami Shoten, 2009), p. 233.

¹⁴ Manabu Shimizu, "Central Asia's Energy Resources: Japan's Energy Interests," in Elizabeth Van Die Davis and Rouben Azizian (eds.), *Islam, Oil, and Geopolitics: Central Asia after September 11* (Lanham: Rowman & Littlefield, 2007), pp. 111-112, 119.

¹⁵ *Ibid.* pp. 108-109.

the control of Western oil majors. In these circumstances, Japan has not prioritized the import of oil and gas from Central Asian countries.

For Japan's energy supply issue, we need to look over a wider region - the whole Eurasian continent. There is also a link between Russia and Central Asia in the context of the Japanese strategy of energy supply from Eurasia. The idea of diversifying the supply route was driven by Japan's pragmatic policy towards Russia, especially since the beginning of the 21st century under the Koizumi administration¹⁶. The Japan-Russia Action Plan was signed in Moscow on January 10, 2003: this was an exhaustive document, describing the political will of the parties at the time, as well as the energy issue. It was proposed to reset the bilateral relations after the collapse of the Krasnoyarsk process. The plan proposed six pillars of cooperation which had enhanced existing agendas for bilateral relations: (1) "Advancing multi-tiered and comprehensive" political dialogue, which had been embraced since the Krasnoyarsk process; (2) peace treaty negotiations; (3) cooperation in the international arena; (4) cooperation in trade and economic areas, including energy cooperation issues like the Sakhalin-2 project to develop oil and gas field close to Japan; (5) development of relations in defense and security; and (6) advancements in cultural and interpersonal exchange. It is interesting that this plan stressed multilateral and regional agendas more than the previous plans that had explored a possibility of breakthrough in the bilateral framework. For example, the plan listed agendas not only of Northeast Asian security, like nuclear issues in the Korean peninsula, but also of security in Central Asia, including "the objective of assisting Afghanistan and the surrounding countries" in order to prevent the flow of illegal narcotics in the Tajik-Afghan border region¹⁷.

As former Russian ambassador to Japan Alexander Panov suggested, Russia understood that the document was a diplomatic victory for their country. "The Action Plan is like a smorgasbord," Panov wrote, "On the table, there are many dishes cooked by top-ranking chefs from Russia and Japan, given full play to their abilities." He wanted to suggest that once

¹⁶ With regards to his policy towards Russia (including the territorial issue), Koizumi himself had managed to ambiguously fit the needs of the moment. Koizumi performed a sea tour to view the Northern Territory islands from the Japanese side on September 2, 2004. During the meeting with former Japanese inhabitants of the islands, which was held after the tour, Koizumi made his original suggestion, which was different from the official position of the Japanese government. The suggestion was that: "There is no progress though we refrain 'Return all four islands together'. I consider the returning period flexibly, after confirming the jurisdiction of these islands." During his term in office as prime minister, Koizumi twice cancelled his attendance of the annual National Congress Claiming to Return Northern Territories, which the Japanese Prime Minister should customarily attend. After retiring as Prime Minister, he repeated his aforementioned cherished opinion, for example, in Moscow, February 17, 2009.

¹⁷ Ministry of Foreign Affairs of Japan, "Japan-Russia Action Plan," January 2003, <<http://www.mofa.go.jp/region/europe/russia/pmvo301/plan.html>> (April 15, 2010).

the territorial issue be listed as top priority in the “full-course menu” of the bilateral relations between Japan and Russia. In the Action Plan, as far as Panov understood, it became clear that both countries had to cooperate in multi-aspect fields simultaneously. He also added that, “Among these dishes, being rich in variety, the most ‘steaming and spicy-hot’ dish is, of course, the Peace Treaty problem.”¹⁸

The Action Plan may be the symbolic trigger that resets Japanese-Russian relations. With regard to cooperation on energy resources, both countries have made distinct progress since the plan was released. For Japan and the attainment of its goal of diversification of the channels of energy supply, Russia is a more realistic supplier of oil and natural gas than is Central Asia. Construction on the natural gas pipeline running through Sakhalin, and on the liquefied natural gas (LNG) plant at the south of the island, began in the 1990s: these are important projects, even for Japan¹⁹. Parallel to these projects, an oil pipeline plan from Eastern Siberia to the Pacific Ocean has also been a long-standing issue for Japan.

As part of a more realistic approach, Japan has explored the possibility of importing uranium, tungsten, and other rare earth elements from Central Asia. This approach, however, has not yet ripened. South Korea would be a major rival for Japan in this issue. In general, Korea has influential communities of their ethnic diaspora in Kazakhstan and Uzbekistan, and this historical connection helps South Korea’s active diplomacy with Central Asian countries. Prime Minister Koizumi’s visit to Kazakhstan and Uzbekistan in the summer of 2006 was a turning point for Japan in its taking some offensive action on this issue. Regarding cooperation with Central Asian countries on peaceful uses of nuclear energy, Japan announced the start of negotiation with Kazakhstan in April 2007. It was kicked off in June 2007, and the fourth round of the negotiation was held in September 2009. Although a statement between

¹⁸ Aleksandr Panov (translated by Suzuki Yasuo), *Kaminari noti Hare: Nichiro Gaiko Nananenkan no Shinjitsu* [Russian: Posle grozy iasno: Russko-iaponskie otnoshenia glazami posla Rossii v Iaponii (1996-2003 gg.); English: Sunshine after the thunderstorm: the truth about the 7 years of diplomacy between Japan and Russia] (Tokyo: NHK Shuppan, 2004), pp. 172-173. Of course, some Japanese experts have pointed out such assessment by Russian side is provocative and dangerous for settlement of territorial dispute. See, for example, a comment after the summit meeting between Japan and Russia when Vladimir Putin visited Tokyo in November 21, 2005. Kimura Hiroshi, “Koudou Keikaku Teian koso Kaidan Shippai no Minamoto [Proposals in the Action Plan are the origin to fail the meeting],” *Sankei Shimbun*, November 24, 2005.

¹⁹ In February 2009, Aso and Medvedyev attended the opening ceremony of the LNG plant in Prigorodnoe in the suburbs of Korsakov, south Sakhalin. Construction of a gas pipeline between Sakhalin and Vladivostok, extending for about 1,800 kilometers, began in the end of July 2009. This pipeline is for the export of natural gas to East Asian countries in the future. Gazprom has it in view to complete the construction before the APEC summit meeting in 2012, Vladivostok. Russian Prime Minister Vladimir Putin attended the ground-breaking ceremony.

governments in June 2008 said that a conclusion could be expected in the near future²⁰, Japan and Kazakhstan have not reached a conclusion yet. On the other hand, the incumbent Korean administration under President Lee Myung-bak has developed its policy towards Central Asia in the context of their “New Asia Initiative”: In May 2009, President Lee made a round of visits to Uzbekistan and Kazakhstan, during which he concluded agreements with his counterparts, such as the “action plan” with Kazakhstan designed to enhance bilateral collaboration in the areas of energy cooperation.

The Japanese approach to Kazakhstan has encouraged the development of the peaceful use of nuclear energy cooperation with another potential partner in this issue: Russia. For years, Japan and Russia had negotiated the building of a closer connection for atomic energy cooperation, and in May 2009 they signed a bilateral agreement on this issue. This is the incoming agreement which was concluded at the last days of the Soviet Union²¹, and will provide institutional conditions for the completion of bilateral projects that have been formulated since the end of 1990s. As the time of writing this article (September 2009), the original document has not yet been released, and therefore has not come into effect. According to news sources²², the agreement plans for wide-ranging cooperation between Japan and Russia so as to provide for the exploration and mining of uranium, both in Russia and in other countries. The construction, building, and operation of light-water reactors are also mentioned in the agreement. Furthermore, the processing and handling of radioactive waste, security of atomic energy (including protection from radiation effects and environmental monitoring), and research on radioisotopes are included as subjects for bilateral cooperation. The Tekhsnabexport, a 100 percent subsidiary company of the Atomenergoprom, has supplied low-enriched uranium since 1999, and the share of uranium enrichment services from Russia for the needs of the Japanese nuclear power industry is now at around 15 percent of the overall demand of Japan. Russian hopes that the share will increase to 25 percent by 2014²³.

²⁰ Ministry of Foreign Affairs of Japan, “Joint Statement by Prime Minister Fukuda and the President of Kazakhstan Nazarbayev [in Japanese], June 23, 2008, <http://www.mofa.go.jp/mofaj/area/kazakhstan/visit/o8o6_ksk.html> (April 15, 2010).

²¹ “Agreement on the cooperation in the field of peaceful utilization of atomic energy between governments of Japan and the Union of Soviet Socialist Republics” (signed in April 18, 1991).

²² These news sources can be read on the website of the Rosatom, <<http://www.rosatom.ru>>. For example, “RF i Iaponia prodvinulis’ v sfere mirnogo atoma, v tsentre vnimania: proekty po toplivu [The Russian Federation and Japan advanced in the area of peaceful atom utilization, in the centre of attention: fuel projects],” News release, *Rosatom*, May 13, 2009.

²³ See the following works, written by Japanese scholars, about the Russian atomic energy industry including the uranium enrichment service: Abiru Taisuke, “*Ima no Rosia*” ga

To realize these optimistic predictions by Russia, trilateral linkages that include Kazakhstan may become essential for both parties. Such linkages will function in the private sector. For example, in March 2008, the Atomenergoprom, a 100 percent subsidiary company of the Rosatom, signed a framework agreement on mutual cooperation with the Japanese company Toshiba. In this framework, both parties intend to enhance cooperation in the fields of the construction of nuclear energy plants and the nuclear fuel cycle²⁴. In addition to Toshiba, Japanese trading companies like Mitsui and Marubeni are under negotiation of interests in cooperative relations with Rosatom. This is being done in order to take part in the joint development project of uranium deposits both in Russia and in other countries, i.e. Kazakhstan. As I argued, however, Japan and Kazakhstan have not concluded the mutual agreement on peaceful nuclear energy cooperation, and it is unpredictable whether or not the trilateral linkage will work²⁵.

Policy for Stabilization in Afghanistan

Support for stabilization in Afghanistan and its neighboring countries, which was listed even in the Japan-Russia Action Plan, got some results, especially during the Koizumi administration period. Japanese support of Afghanistan after the events of 9/11, however, has been to collaborate with the U.S.-led “war on terror,” to which Japan can contribute within in the limits of Japanese legislations. These legislations include the Constitution strictly prohibiting the use of force and the rights of belligerency. When the Japanese Self-Defense Forces (SDF) were dispatched to Iraq between January 2004 and February 2009, Japan

Wakaru Hon [The Book to Understand “Contemporary Russia”] (Tokyo: Mikasa Shobo, 2008), pp. 226-230; Shiobara Toshihiko, “Roshia no Genshiryoku Sangyo to Genpatsu [Atomic Energy Industry and Nuclear Power Stations in Russia],” *Roshia NIS Chosa Geppo* (Tokyo: Japan Association for Trade with Russia and NIS, 2009), pp. 32-47.

²⁴ *Fuji Sankei Business I*, March 21, 2009, <<http://www.business-i.jp/print/article/200903210046a.nwc>> (March 21, 2009).

²⁵ The United States may also be an essential actor in multilateral cooperation on nuclear energy control in Eurasia. In November 2007, the U.S. and Russia reached an agreement on a mutual project for processing plutonium after over eight years of negotiation. This project has aimed to prevent the conversion of nuclear technologies to armaments, to dispose of radioactive waste safely, and to cooperate in strengthening the non-proliferation regime of nuclear weapons. Here I will skip a detailed discussion of the “U.S. factor”. The agreement between Japan and Russia will also link up with the development of the U.S.-led project, especially, in relation to the Japanese contribution of funds and technology for the project. Furthermore, in the future, this network may enlarge to include members such as China and France, and evolve to a stricter international framework for the safety control of nuclear materials and technologies, including nuclear-fuel reprocessing. The U.S.-led initiative, however, has been stagnated since the conflict between Russia and Georgia in 2008. See, for example, *Nihon Keizai Shimbun*, November 21, 2007 [in Japanese].

continued activities of the Maritime Self-Defense Forces in the Indian Ocean by providing fuel and water to other ships engaged in maritime interdiction operations under the Operation of Enduring Freedom, even after Prime Minister Koizumi stepped down. However, these Japanese activities have been based on legislation of a specified duration, and the Japanese government has had to bargain with the oppositional parties, especially with the DPJ, to be able to continue its activities. This was more a tactical confrontation on the basis of balance-of-power in the parliament, than an essentially political dispute between parties. In this context, unfortunately, these policies may have been less understood as a choice for Japan's comprehensive strategy towards Eurasia.

Political confrontations between parties inside of the Japanese parliament over support for Afghanistan continued even in the period of administration led by Abe Shintaro, Fukuda Yasuo, and Aso, the successors of Koizumi. In this context, as I wrote previously, Aso, in his policy speech at the end of June 2009, stressed the achievements of their contribution to the "War on Terror" and the initiatives by the LDP government towards Central Asia and Afghanistan. After the dissolution of the House of Representatives on July 21, 2009, Aso insisted, during the parliamentary election campaign, that the SDF activities in the Indian Ocean should continue because of the international coalitions' high estimation of the activities. During the campaign, on the other hand, the DPJ leader Hatoyama suggested that the activities should cease on January 15, 2010, the deadline for the activities permitted by existing law. Hatoyama also stressed the importance of the Japanese-US alliance, and raised no objection to the general strategy of the Barack Obama administration towards Afghanistan. Since then, Hatoyama and other executives of the DPJ have held that their party will reject "a simple extension" of the activities in the Indian Ocean, and will propose a new guideline to support state-building and poverty eradication in Afghanistan²⁶. Suddenly, after his inauguration as prime minister, Hatoyama stressed the same idea during his address to the General Assembly of the United Nations²⁷. Even on the Japan's contribution to stabilize Afghanistan and its surrounding areas, Hatoyama stands on his unique political philosophy, symbolized by the word "yu-ai," or fraternity.

Hatoyama's (and the DPJ's) position is not strange in view of the fact that Ozawa Ichiro, the former party president (from April 2006 to May

²⁶ See, for example, Hatoyama's comments in the debate among party leaders at the Japan National Press Club, August 17, 2009 (available only in Japanese), <http://www.jupc.or.jp/cgi-bin/pb/pdf.php?id=410> (August 17, 2009).

²⁷ Address by H.E. Dr. Yukio Hatoyama, Prime Minister of Japan at the 64th Session of General Assembly of the United Nations, 24 September 2009, New York, http://www.un.org/ga/64/generaldebate/pdf/JP_en.pdf (April 15, 2010).

2009), once proposed a policy for the stabilization of Afghanistan to enable the SDF's participation in the International Security Assistance Force (ISAF) in Afghanistan²⁸. Although the DPJ stopped suggesting the possibility of dispatching the SDF to Afghanistan during the election campaign in the summer of 2009, Japan's positive contribution to stabilize the region would be welcomed by NATO countries and their partners including, of course, the United States, which is on a continuous process of trial and error of new strategy for Afghanistan under the leadership of the Obama administration. Even nowadays, it is clear that Japan is a major driving force in international contributions to reconstruct Afghanistan: from September 2001 to July 2009, Japan has donated US\$1.79 billion for humanitarian aid, democratization, governance, security sector reform, and other reconstruction assistance for Afghanistan. This is the third largest donation, after those of the United States and the United Kingdom. As of February 2009, 130 Japanese civilians have worked in Afghanistan, including staff from the Japan International Cooperation Agency (JICA). From June 2009, four Japanese civilians, belonging to the Ministry of Foreign Affairs, have started working with the Lithuanian-led Provincial Reconstruction Team (PRT) in Chaghcharan. Japan has also supported initiatives by the Organization for Security and Co-operation in Europe (OSCE) to strengthen the capabilities of custom and border control sectors in the post-Soviet Central Asian countries and Afghanistan.

The former President of DPJ Okada Katsuya (from May 2004 to September 2005) has been installed as the foreign minister of the Hatoyama cabinet. Despite such a strong shift in foreign affairs, there are several concerns related to Japan's future policy for Afghanistan. First, the Social Democratic Party, a partner of the DPJ-led coalition government, would be an unstable element in foreign and security policy in the future. Although they have little influence in the parliament (seven seats in the House of Representatives), social democrats are hard-liners for stopping the dispatch of SDF overseas. If the dispatch of the SDF uniform staff will be taken as a critical dispute in Japan's policy toward Afghanistan, it may seriously deepen the rift between governmental parties. Second, the Hatoyama administration has the ambitious goal of building "a close and equal Japan-U.S. alliance to serve as the foundation of Japan's foreign policy," as was pledged in the DPJ's platform for government during the election campaign.²⁹ This may cause policy disputes between Japan and the U.S., not only in the context of global security agendas, but also regarding the issue of the presence of

²⁸ Yuasa Takeshi, "Consolidating 'Value-oriented Diplomacy' towards Eurasia?" *op. cit.*, pp. 62-63.

²⁹ *Manifesto: The Democratic Party of Japan's Platform for Government*, August 18, 2009, <<http://www.dpj.or.jp/english/manifesto/manifesto2009.pdf>> (April 15, 2010).

military bases in Japan. According to news sources, there is a request from the American side that, in case the Maritime SDF's ships withdraw from the activities in the Indian Ocean, Japan must make substitute proposals until President Obama's forthcoming visit to Japan, scheduled for November 2009³⁰.

Conclusion

Expressed simply, Japan's foreign policy after the Cold War is characterized as the rediscovery of geopolitics. During the Cold War era, it was enough for Japan to pay attention to bilateral relations with the U.S., mainly in the context of its national security. As we found, since in the normalization of diplomatic relations with China, as well as the "Fukuda Doctrine" to initiate Japan's original policy towards Southeast Asian countries in 1970s, Japan had explored its own style of diplomacy, even during the Cold War period. However, in the half century since the 1950s, a strict regime has continued, both in foreign and domestic affairs: Japan has depended heavily on the United States for its security, while the catch-all LDP has ruled predominantly to encourage sustainable development of the Japanese national economy. During this period, one knotty problem had been the remaining issue of postwar dealings with its neighboring country: the Northern Territory issue. Japan has developed new approaches towards Eurasia to settle this long-standing question after the end of the Cold War. However, its efforts have not come to fruition yet.

What Japan has lacked is a comprehensive vision and strategy and the ability to effectively comprehend the interrelations between individual policies. Certainly, there may be debates on whether such vision and strategy are necessary or not for Japan. Some would object that Japan has achieved sufficient fruition even without the grand strategy towards Eurasia. However, as we have seen in this paper, Japan has lost opportunities to solve long-pending issues, and, in some cases, has faced adverse developments in the international situation. The Northern Territory issue would be a typical example. Although there have been significant developments in bilateral economic relations and trade under the Japan-Russia Action Plan, their territorial disputes are deadlocked. As for the shortcomings of the Japanese side, the frequent replacements of governmental leaders, who have been responsible for the disputes, have caused an inconsistent strategy regarding the territorial issue. These circumstances have cast a shadow on the bilateral negotiations and have unnecessarily brought Japan disadvantaged conditions.

³⁰ *Yomiuri Shimbun*, September 19, 2009 [in Japanese]. To prepare these forthcoming dialogues, Foreign Minister Okada suddenly made his round trip in Kabul and Karachi from October 11 to 12, 2009.

It is interesting that the negotiation on the Northern Territory issue had taken a step forward while Japan explored a newly multilateral approach towards Eurasia during the latter half of the 1990s. Japan may be able to achieve a breakthrough on territorial disputes with Russia when it holds a new comprehensive strategy towards Eurasia that succeeds the AFP initiative, and a clear strategy on Japanese-Russian relations. Political relations between Japan and Russia, symbolized by the territorial issue, are still the frontier of Japan's approach to all of Eurasia. It will take some time for the birth of a full-fledged government that can demonstrate effective initiatives in this field.

On the other hand, Central Asia has been the newly emerging frontier of Japan's Eurasian policy, while still being in the zone of influence for Russia. Although their presences and political positions in the region are different, Japan and Russia have shared mutual interests in Central Asia regarding energy issues, and especially regarding the construction of a cooperative regime of technology for the peaceful use of nuclear energy. However, prospects of multilateral cooperation in this issue are not fully open yet because some necessary bilateral agreements among related states have not been concluded.

The perspective of Japan's projects for stabilization in Afghanistan is also unpredictable. The political platform of the DPJ attaches more importance to domestic affairs like child-rearing, education, pensions, and regional sovereignty, than to external affairs. It explains Japan's ambiguous foreign and security policies. Inside the DPJ, there are wide-ranging political groups with different backgrounds, from the former socialists to the patriotic revisionists, who aim to reform the current Constitution to establish a more autonomous national security regime for Japan. It would be a very difficult task for Hatoyama to bundle these groups and quickly work out concrete policies. There is little information on whether the DPJ-led administration will collaborate with international societies to attain its security agenda in Eurasia. However, the construction of a grand strategy towards all of Eurasia, including Central Asia, is an inevitable subject for Japan, not only for a breakthrough in the political stagnation between Japan and Russia, but also for the establishment of Japan's significant presence in Central Asia.

Energy-related Corruption and its Effects on Stability in Central Asia

*Gavin Hayman and Tom Mayne**

ABSTRACT

Central Asian political systems, precisely because they are characterized by élite rent-seeking in the energy and other natural resource sectors, require strong autocratic rule to maintain a modicum of internal stability. The weakening or death of the autocratic leader may therefore trigger a dynamic of visible and turbulent regime destabilization. The article discusses some aspects of energy-related corruption in Kazakhstan and Turkmenistan, and argues that such corruption has in both cases undermined the countries' development and, ultimately, their stability.

Keywords • Corruption • Energy Security • Kazakhstan • Turkmenistan • Political Instability • Kleptocracy

Introduction

Autocratic regimes, even those which govern lands rich with natural resources, may not be as stable as they appear. In Central Asia, Kyrgyzstan has seen a revolution, Tajikistan a civil war and Uzbekistan the Andijan uprising, yet the two most energy-rich nations - Turkmenistan and Kazakhstan - have seen little apparent instability since the fall of the Soviet Union. This would on the surface seem to go against the classic “resource curse” or “paradox of plenty” model in which poverty and violent conflicts appear more prevalent in countries with natural resources. The presence of valuable resources has been a central element in the violence that has afflicted countries like Nigeria, Congo and Iraq.

Unlike those countries, one could argue that revenues earned from natural resources have been the source of such apparent stability. In Turkmenistan, both former president Niyazov and current president

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Berdymukhamedov have used these revenues to promote a personality cult and install a powerful security service which tolerates no political opposition or free speech. In Kazakhstan, the highly centralised economy is run by a small group of the president's trusted associates; anything that is or could potentially be run contrary to the ruling party's interests will eventually be shut down or taken over by trusted hands.

However, kleptocratic systems are fundamentally unstable as they are built upon systems of patronage, rent-seeking, corruption and bribery - all of which undermine economic growth. This is the case even in kleptocratic systems that periodically perform well economically such as Angola or Kazakhstan.

As time passes, an inherent contradiction comes to the fore. Such kleptocratic systems - where the ruling elite control the vast majority of the country's resources - can only work with a strong leader. In order to remain in power, to stay "strong", a leader has to purge those elements in business and society that pose a threat to his or her power. These men and women are often the very element that has helped produce economic growth and in a more democratic system would become the country's next set of leaders in both business and politics. Such "purges" of intelligence and capability are common in Central Asia and are the more insidious by-products of the "paradox of plenty", compared to armed conflict.

The paradox certainly exists in Central Asia. The average life expectancy in Turkmenistan is ranked by the CIA World Factbook in 153rd place, currently worse than Iraq. Child mortality is ranked 169th, worse than Zimbabwe. Turkmenistan has earned billions in gas deals with Russia and may be on the brink of receiving an influx of dollars from international investment. However, such revenues will not necessarily contribute to social development. Across the Caspian Sea, Azerbaijan, despite having earned billions from oil deals with international companies such as BP and StatoilHydro, has lower life expectancy and higher rates of infant mortality than even Turkmenistan. The freedom of the media has suffered in the last few years, democratisation has regressed, social indicators are down, and more money than ever is going to the military and to the construction sector.

In Turkmenistan, Saparmurat Niyazov dismantled the education system, which was relatively strong in Soviet times, by reducing the years of schooling and basing students' education around a so-called holy book of his authorship, the *Rukhnama*. With a media that is completely state controlled, that exists solely to glorify the actions of the president and Turkmenistan, the next generation of Turkmenistan's population is being raised in a world where nothing is questioned and everything is glorious. An unquestioning populace poses little threat to an all-powerful leader. The country's next generations will possess an education that is

neither well-rounded nor specialist, qualities which underpinned the Soviet system.

Saparmurat Niyazov died in December 2006. His successor, Gurbanguly Berdymukhamedov, Niyazov's former dentist, has made some positive changes: reinstating the final year of education, and reducing the amount of time spent studying the *Rukhnama*. However, the system has not been inherently changed, as seen recently when Turkmen students were denied exit from the country to study at the American University in Bishkek. Seemingly, someone in Turkmenistan's leadership had decided that the liberal education available at this university would be dangerous for Turkmen society.

The transition from Niyazov to Berdymukhamedov was stable, though the man who rightfully should have become acting president once Niyazov had died was arrested and later jailed. Powerful figures linked to Niyazov's reign were also jailed, as Berdymukhamedov consolidated his own power base. This followed years of Niyazov-led purges which have robbed the country of Soviet-educated experts who had the know-how to run the country's vital sectors, the most vital of which is the energy sector.

Such a system is unsustainable; the country is stagnating and is in danger of going backwards. Reports from Transparency International state that the perceived level of corruption in Turkmenistan - already rampant under Niyazov - actually increased under Berdymukhamedov. Without the presence of a long-serving autocratic leader, minor officials can become more brazen in their corruption without the fear of repercussions.

In contrast, Kazakhstan has many talented and well-educated politicians and businessmen but one by one they too are being purged. They now live either in exile (for example, Akezhan Kazhegeldin, the former Prime Minister), are dead (Altynbek Sarsenbayev, an opposition politician who was assassinated in 2006) in jail (Mukhtar Dzhakishev, former head of the state uranium company) or part of the largely ineffectual opposition who no longer have a single seat in the Kazakh parliament.

The arrest of Dzhakishev was particularly noteworthy. He was accused of selling 60 percent of the country's uranium for personal profit. If this is true, then it is a particularly egregious example of gross corruption and a dangerous lack of oversight of such key resources. If it is false, then another potential backer of Nazarbayev's rivals has been removed. Many critics link his arrest with the dismissal of Mukhtar Ablyazov from the chairmanship of Kazakhstan's largest bank (BTA) which was then nationalised. Again, the question of whether this was a political or an economic decision loomed large. Ablyazov was a founding

member in 2001 of the Democratic Choice of Kazakhstan, a group of entrepreneurs whose emergence posed a threat to Nazarbayev.

President Nazarbayev likes to profess in his public utterances that Kazakhstan is slowly becoming a democracy, but that it needs to move at a snail's pace in order for it to be a stable transition. However, data shows that Kazakhstan is not moving slowly towards a democracy. If anything, it is going backwards. The American NGO Freedom House ranks countries in terms of their political rights and civil liberties on a scale of 1 to 7, with 7 being the worst. In 2009, Kazakhstan was ranked 6 in terms of political rights and 5 on civil liberties with its status ranked as "not free", the same scores it received in 2002.

Kazakhstan's first appearance in Transparency International's corruption perception index in 1999 saw the country ranked 84th out of 90 countries examined, with a score of 2.3 (with 10 being the highest score, representing a country with virtually no corruption). 9 years later, Kazakhstan scored 2.2, ranking it 145th out of 180 countries.

It appears that Nazarbayev will be president for life, with no limits to the number of terms he can serve, yet the bitter battle between Nazarbayev and his former son-in-law, Rakhat Aliyev, now in exile in Austria, has left the president increasingly isolated. New laws restricting speech on the internet have been passed and journalists continue to be harassed or even worse. Kazakhstan has also been hit hard by the financial crisis and has massive levels of foreign debt.

At the end of his current term, Nazarbayev will be approaching 73 and may well stand again, increasing the sense of disgruntlement amongst the younger generation. The current system actively supports Nazarbayev and his inner circle. Consequently, it is likely that there will be a succession struggle between various groups both in and outside Kazakhstan when Nazarbayev dies.

Such kleptocratic systems need to sustain themselves: money to control the security services, the banks and businesses, and the media. In the case of Kazakhstan and Turkmenistan, the vast majority of such funds come from the export of natural resources. Both countries give clear examples of elements that undermine stability, namely corruption, rent-seeking and the mismanagement of resource funds.

Nazarbayev and "Kazakhgate"

Kazakhstan may be the economic powerhouse of Central Asia, with a GDP higher than the other four former Soviet -stans combined, yet its autocratic kleptocratic system and gross corruption problem is similar to the others.

Nazarbayev is by no means the great reformer he professes to be, trying to bring the country to better levels of governance and democracy.

He is in fact at the top of the pyramid of rent-seeking, as proven by a scandal that broke in the late 1990s, dubbed “Kazakhgate”. An incredible blunder by Nazarbayev himself resulted in a chain of legal proceedings, in which it was revealed that the Kazakh president had been using the country’s oil revenues for personal enrichment and to maintain power.

Hoping to catch illegal behaviour by the former prime minister, Akezhan Kazhegeldin (who had announced his intention to run in the presidential election in 1999), Nazarbayev asked Belgian bank officials to search for illegal assets in accounts that may have been held by Kazhegeldin. The Belgian investigators found none, but they did uncover accounts benefiting other Kazakh officials. They referred the investigation to Swiss officials who subsequently notified the U.S. Justice Department of an American citizen’s involvement in the transfers to Kazakh officials. This man was James Giffen, an American independent merchant banker and a key figure in the negotiations when, in early 1993, the newly independent Kazakhstan started to attract interest from international oil companies such as Chevron (now ChevronTexaco) and Mobil.

Giffen, who currently awaits trial in America on various charges relating to Kazakhgate, had connections in this region’s business market dating back to before the Soviet Union fell. He became close to Nazarbayev, acting as a middleman and advisor as energy companies flocked to Kazakhstan to invest in the country’s oil sector. However, according to Giffen’s indictment by a Grand Jury in New York, it is alleged that he set up schemes that “defrauded the Government of Kazakhstan of funds to which it was entitled from oil transactions and defrauded the people of Kazakhstan of the right to the honest services of their elected and appointed officials”. Yet Giffen was allegedly defrauding “the government of Kazakhstan” for the benefit of its head - President Nazarbayev. Giffen, the president, and officials close to him, thus became enormously rich profiteering from the entry of multinational oil companies into Kazakhstan.

The Grand Jury indictment alleged that Giffen had created a scheme that was based around President Nazarbayev and the then-Kazakh Oil Minister Nurlan Balgimbayev, demanding that the oil companies pay Giffen’s own company, Mercator, a fee on behalf of the Republic of Kazakhstan, a strange arrangement that, the indictments allege, helped Giffen to skim money from the deals and distribute largesse.

Given that it was the Republic of Kazakhstan that retained Giffen’s services, it was very strange that oil companies would pay him such a bonus. According to the U.S. Grand Jury Indictment against Giffen, Mercator received roughly US\$67 million in fees between 1995 and 2000. During the same period, the indictment records that Giffen also caused approximately US\$70 million - paid by oil companies into escrow

accounts at Swiss banks for oil and gas rights in Kazakhstan - to be diverted into secret accounts under his control. Out of the fees and the funds diverted by oil companies, the indictment alleges that Giffen made unlawful payments of more than US\$78 million to two very senior officials of the Kazakh government dubbed “KO-1” and “KO-2”.

The indictment itself does not mention these officials by name but by cross-checking U.S. indictments with mutual legal aid requests and Swiss court documents relating to the matter it is clear that KO-1 is, in fact, the former oil minister Balgimbayev, whilst KO-2 is President Nazarbayev himself.

The writing had been on the wall for years. In the autumn of 1995, Giffen, Nazarbayev and a few senior Mobil executives met in the Bahamas to talk about an oil deal regarding the massive Kazakh oil field Tengiz. Eventually in 1996, Mobil was awarded a 25 percent share in Tengiz. The *New Yorker* reported that, at the meeting in the Bahamas, Nazarbayev made extraordinary requests, including a Gulfstream jet, tennis courts at his home, and satellite trucks for his daughter’s television network. Mobil apparently declined these demands, but nevertheless had to hurdle two other unusual requests before landing a stake in Tengiz: that Mobil directly pay Mercator’s fees that were due from the Kazakh government, and that Mobil pay them on top of the asking price for the field.

Mobil indeed wired a total of US\$51 million into Mercator’s account at Citibank in New York. The indictments describe how more than half of that money was immediately funnelled out of Mercator’s account to the accounts controlled by various parties to the deal. Eventually, US\$20.5 million found its way into a Swiss account in the name of Orel Capital Ltd, a company beneficially owned by Nazarbayev and his heirs. Nazarbayev spent this money on, amongst other things, some US\$45,000 of fees for an exclusive Swiss boarding school for his daughter.

The system of money-laundering and bribes maintained by Nazarbayev, Balgimbayev, Giffen and others, as described by the indictments, appears to have been so extensive that investigating magistrates in Switzerland identified as suspicious between 50-60 accounts in at least four different banks. In 2000, Swiss officials froze the assets of several accounts that the U.S. indictments would later describe as “secret accounts beneficially-owned by senior Kazakh officials” including Nazarbayev and Balgimbayev.

By 1999, the pressure was on and legal investigations had also begun in the United States. In August, Nazarbayev transferred US\$84 million out of his Orel account at CAI and into a new account at Banque Pictet, established as the official property of the Republic of Kazakhstan. Shortly thereafter, Balgimbayev’s wife and children moved out of the house in Massachusetts that had been bought by a front company owned by

Balgimbayev and funded by oil money. Investigators were uncovering a host of private benefits, including matching “his and hers” snowmobiles Giffen had sent Nazarbayev and his wife.

Other revelations followed. An investigation in Switzerland involving secret accounts forced the then-Kazakh prime minister Imangaly Tasmagambetov to make a startling announcement in parliament in April 2002. He stated that the Kazakh leadership had created a secret account in Switzerland under Nazarbayev’s direct control which held a US\$1 billion payment made for an oil contract. Tasmagambetov said the fund was a reserve fund in the event of an economic crisis and was created for the benefit of the country. However, Tasmagambetov also stated that the account had to be created secretly because “in 1996, it would have been complicated for parliament to make this law about the National Fund themselves”. Similarly, the Kazakh Deputy Minister of Information has gone on the record to argue that information about the secret account had not been shared with parliament because “it would have elicited many questions”.

Although Kazakh leadership has never clearly identified where the US\$1 billion has gone, it is believed to have been spent to shore up Kazakh pension funds, with the rest transferred to a new national fund. Here, there are at least some answers to what happened to such resource money. Answers from Turkmenistan regarding what has happened to the country’s gas revenues will perhaps never materialise.

Turkmenistan and Deutsche Bank

Since Niyazov’s death, many Western companies have turned their attention to Turkmenistan, hoping to exploit the country’s gas reserves, the fourth largest in the world. The EU and the U.S. too have increased diplomatic contact with Turkmenistan for the same reason. Yet such engagement poses a difficult question for the West: how to exploit the country’s resources without strengthening one of the most repressive regimes in the world, exacerbating the already very poor human rights situation and possibly ultimately undermining stability.

Niyazov’s regime was routinely cited as one of the “worst of the worst”, possessing the third least free media in the world, no political opposition, and reports of enforced detention, torture and mysterious deaths in the prisons. The West has been quick to laud Berdymukhamedov’s minor improvements, such as reinstating the final year of schooling that Niyazov had cut several years before his death.

However, the nature of the system is very much the same, a virtual police-state, which continues to be regarded as one of the worst abusers of human rights in the world. The U.S. State department commented in March 2008, “Although there were modest improvements, the

government continued to commit serious abuses, and its human rights record remained poor,” an opinion shared by leading NGOs. Freedom House still ranks Turkmenistan in its bottom eight “worst of the worst” countries in terms of civil liberties and political rights.

In terms of economic changes, in his favour Berdymukhamedov has reconciled the dual exchange rate; under Niyazov the “black market” rate that everyone in Turkmenistan used was five times greater than the official exchange rate. He has also redenominated the currency. Yet regarding the most crucial question for social development - where natural resource revenues go and how they are used - there has been little change. The country's finances remain as opaque as ever.

As documented in Global Witness' 2006 report *It's a Gas*, Turkmenistan earned billions of dollars from its natural gas exports, but as our research discovered, staggeringly none made its way to the national budget. Instead the gas money was kept offshore in banks worldwide, notably Deutsche Bank in Frankfurt, which held the largest of the off-budget funds - the Foreign Exchange Reserve Fund (FERF) - thought to contain up to US\$3 billion during Niyazov's reign.

Though it was nominally held under the auspices of the Turkmen Central Bank, only Niyazov could authorize payments from it, and used its dollars to strengthen his ubiquitous personality cult, replete with palaces and golden statues of himself. Following Niyazov's death, Global Witness issued a press-release stating that all Turkmen accounts at Deutsche Bank should be frozen to prevent money from being used for non-state business. Two years on, we know no more as to what happened to the FERG. Deutsche Bank has remained tight-lipped, as has the Turkmen government.

The government has also shown little improvement on budget transparency. In August 2007, it was reported that the Turkmen government's accounts regarding how it spends budget funds will be published in Turkmen mass media for the first time and that an Audit Chamber had been recently set up on the order of Berdymukhamedov for preparing such reports. This would have been a welcome step forward; under Niyazov, virtually no information pertaining to the budget was released. One Western official who worked in Turkmenistan in the 1990s said he had once seen Turkmenistan's national budget - all five lines of it.

Yet despite Berdymukhamedov's proclamation, nearly two years later information on the budget is still scant, and on how money is spent it is almost non-existent, apart from a very vague sector-by-sector breakdown. It is also still unclear how much of government spending currently comes from extra-budgetary funds. Under Niyazov this figure was a staggering 75 percent, though there are some reports from unofficial sources that the dizzying array of extra-budgetary funds that Niyazov used has been reduced.

This opacity affects developments that could otherwise be positive to reform. In October 2008, Berdymukhamedov announced that a “stabilization fund” would be set-up to “minimize the dependence of our economy on the oil and gas sector and also protect it from the negative impact of external factors.” He added that “The fund will be based on the budget surplus balance; it will subsequently accumulate the government’s financial assets.”

As Turkmenistan is heavily reliant on its oil and gas revenues, it is highly likely that such revenues will flow into the fund. Foreign investment in Turkmenistan’s energy sector would generate additional revenues. Countries with plentiful natural resources often establish such “future generation” funds, but these should be fully-audited, transparent entities. It is yet unclear whether the Turkmen stabilization fund will have any oversight at all. If this is the case, then the fund is in danger of becoming an economic black hole, like Niyazov’s infamous FERF, this time for Turkmenistan’s second president.

So much uncertainty still remains over the control of the country’s foreign currency reserves that the European Bank of Reconstruction and Development (EBRD) has yet to change its policy of not lending to the Turkmen government because of the country’s poor grasp of fiscal management.

This last point should be emphasised: one of the world’s leading international financial institutions is saying that it refuses to lend money to the Turkmen government because of its opaque nature of operating; without the bare minimum of information and oversight no financial institution can guarantee that the money would be used in the way it was intended. Yet despite this expert opinion, other international institutions and energy companies feel that the country is ready for massive investment with seemingly no conditions in place to mitigate the risks.

Such Regimes Gain Legitimacy from the West

According to the European Commission and major energy companies, there are no plans to put any kind of conditions of engagement with Turkmenistan. Companies may well follow their best practice procedures, but could promote transparency by agreeing in advance to publish the contracts they strike with and the revenues they pay to the Turkmen government, including the initial signature bonus. Companies should also agree not to strike deals with shadowy “local partners” which are often fronts for government officials.

Investment without such conditions could prove very unwise, and not only for the companies’ reputations. The EU, in light of the problems between Russia and Ukraine, is trying to secure its energy by turning to countries more unreliable and autocratic than Russia. But without

conditions, by plunging money into Turkmenistan, the EU risks building the house of cards higher with no stable foundations.

Now is the time for agreeing to pre-conditions on engagement. After deals have been made, infrastructure is in place and such regimes are richer, it is too late to promote transparency. Turkmenistan especially is looking to diversify its gas exports after a pipeline explosion that cut off the gas flow to Russia, which is by far Turkmenistan's most lucrative contract. The gas has remained off for 5 months and the relationship is still tense and the contract unresolved at the time of writing this piece. Turkmenistan would love to benefit from Western expertise and earn billions of Euros in the process. Of course, China is also vying for Turkmen gas exports, but we should not turn our plans for diversification into a "race to the bottom" - we have to insist at all times on high levels of transparency and good governance, if we care not only about doing what is morally right, but also in undermining stability. In some ways the EU has already lost the race with China, which is currently finishing a pipeline that connects it to Turkmen gas fields: another reason not to forget our principles when talking business.

If we do invest without suitable conditions in place, the West risks giving legitimacy to a regime with nothing to show in return. We have already allowed such regimes access to our banking systems, aiding and abetting Niyazov's (and now Berdymukhamedov's) personality cult as in the case with Deutsche Bank. "Kazakhgate" featured private accounts in banking institutions in Switzerland and offshore companies in Liechtenstein. Media reports also claim that the Nazarbayev family holds much real estate in EU member states.

If companies had been obliged to publish their payments to the Kazakh government, it is unlikely that the system of kickbacks and offshore money laundering detailed above would have been possible. The lack of transparency during contract negotiations was so complete, in fact, that the Kazakhgate scandal was only uncovered as a result of a disastrous miscalculation by President Nazarbayev himself. It is unacceptable that the world should find out what was paid - and into whose pockets the money went - only because Nazarbayev inadvertently laid bare his own finances while trying to eliminate a political rival.

Other institutions also give legitimacy for little in return. The Organization for Security and Cooperation in Europe controversially gave Kazakhstan its 2010 chairmanship, the first country not to be classified as "free" by Freedom House to hold the position (Kazakhstan is classified not even as "partly free", but as "not free"). The idea was that in return the Kazakh government would implement democratic reforms. Since the chairmanship was granted in 2008, Kazakhstan has failed to live up to such pledges. In speeches, however, the Kazakh ruling powers cite

the chairmanship as evidence that the West believes in the “Kazakh way” of leadership.

Why these Systems Ultimately Do Not Lead to Stability

Until the global financial crisis, economically, Kazakhstan performed well under Nazarbayev. However, in terms of human rights, press freedom, democratization and battling corruption, Kazakhstan has performed very poorly and has regressed in recent years. The financial crisis hit Kazakhstan hard. The longer Nazarbayev stays in power the more the feeling will grow that he is out-of-touch and no longer running a stable country. Who will succeed him is unclear. The transition may not be easy.

There are three succession options, none of which point to increased stability. First, if Nazarbayev appoints a successor, most likely a relative, it is very probable that this individual will not be as capable or as politically astute as Nazarbayev. This is what happened in Azerbaijan when Heydar Aliyev appointed his son Ilham, a former casino manager, to succeed him.

The Kazakhs who possess leadership qualities are mostly out of the country, leaving less capable yes-men in positions of power. Nazarbayev is unlikely to appoint anyone of particular acumen: one would expect him to maintain control behind the scenes - more easily achievable with a weaker president. With a weaker individual in charge, corruption increases, the economy stagnates and popular opinion starts to turn. All of these are very destabilising factors. The classic pattern of the “strong leader, weak offspring” may well happen in Kazakhstan.

If Nazarbayev dies or is forced out, one would expect to see a protracted battle by various business clans. The new leader is likely to consolidate power by reversing privatisations and annulling contracts which are not in his or her benefit. Even if the government were to respect the rule of law, independent investigations would be likely to find many legal problems regarding privatisations and contracts which were concluded in the 1990s. According to one leading Kazakh human rights expert, “big money cannot have been earned legitimately in Kazakhstan”. Without checks and balances on executive power, corruption increases, with bribery becoming the equivalent of such checks. The only benchmark to executive performance becomes loyalty to the leader, which is no benchmark at all.

If the new leader, like Nazarbayev, has little respect for the rule of law, the only guarantor of contracts struck by multinational companies is the leader himself. Such contracts may not be upheld after a succession of power or in times of economic strife. Such regimes are therefore not only morally wrong, but are bad for business. Without respect for the rule of

law, companies are essentially powerless. At various times both Nazarbayev and Niyazov have tried to renegotiate various aspects of energy deals. When oil and gas companies are thus compromised, energy security - the very thing we are trying to achieve - is jeopardised.

Turkmenistan lacks the business elite that Kazakhstan has. With little private enterprise and a less diversified economy, Turkmenistan's government is wholly reliant on its gas exports for revenue. The country has suffered from a "brain drain" as capable technocrats are jailed, sacked or exiled. There are not many figures left capable of running such a complex sector. Without any semblance of openness, a transition of power may be more violent. The precedent is there: in 2002, Niyazov survived a coup attempt when his motorcade was strafed with gunfire. This assassination attempt gave Niyazov a pretext for a wide-ranging series of purges. Turkmenistan is in great danger, yet the powers-that-be press on for investment regardless.

Berdymukhamedov could of course, rule for life like his predecessor. Corrupt autocracies can last for a long time, especially when rents from a country's natural resources are high. But such systems - with their associated corruption, bribery, and misappropriation of revenues - are extremely inefficient. Such regimes by their very nature underperform and it takes years to restore a country to democracy and prosperity after such mismanagement and likely chaotic successions. The West should bear this in mind in its current dialogue with Turkmenistan and Kazakhstan.

The Vulnerability of Energy Infrastructure to Environmental Change

*Cleo Paskal**

ABSTRACT

Energy generation, extraction, refining, processing and distribution require a complex, interlinked, expensive and sometimes global infrastructure. However, much of that infrastructure lies in areas that may become increasingly physically unstable owing to changes in the environment. Of particular concern are disruptions caused or exacerbated by climate change. A compromised global energy supply could result in a range of undesirable ancillary affects. This paper aims to identify some of the most susceptible nodes in the global energy infrastructure and show how they might be affected by moderate environmental change.

Keywords • Energy • Infrastructure • Climate Change • Hydro • Nuclear • Permafrost

Introduction

Energy generation, extraction, refining, processing and distribution require a complex, interlinked, expensive and sometimes global infrastructure. However, much of that infrastructure lies in areas that may become increasingly physically unstable owing to changes in the environment. Of particular concern are disruptions caused or exacerbated by climate change. A compromised global energy supply could result in a range of undesirable ancillary affects.

There are two separate but often interlinked challenges. One is inherited, the other is new. Both stem from the fact that energy infrastructure tends to have a long lifespan. The Hoover Dam in the

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western United States was completed in 1935 and is still an important hydroelectric generator. China's Three Gorges Dam, which is still not fully operational, has an expected lifespan of at least fifty years. Nuclear power stations, from design through to decommissioning, may be on the same site for a hundred years. Additionally, constructions such as refineries, coal power plants and high-voltage transmission lines can be perceived as undesirable for a community. As a result, when the time comes to build new installations, they are often erected in the same locations as the previous ones, as the local population is already accustomed to the infrastructure. This means that sites chosen in the 1980s may still be in operation in 2080 and beyond.

The lifespan of existing energy infrastructure is well within the timeframe predicted for potentially disruptive environmental change. When much of it was designed and installed, the degree of change was not understood and so was not factored in. This is an inherited challenge.

The new challenge involves upcoming investments. A substantial segment of energy infrastructure in North America and Western Europe is scheduled to be decommissioned in the coming decades either because it has reached the end of its natural lifespan or owing to the introduction of revised environmental standards. Combined with stimulus packages in some countries and development in others, this is likely to be the beginning of an era of large-scale investments in new infrastructure. In some cases it is now possible to predict with scientific accuracy at least the minimum level of environmental change over the next century (well within the lifespan of most new investments). However, in too many cases proposed new builds still do not incorporate the likely effects of environmental change.

When planners talk about performing "environmental impact assessments", almost invariably what is being assessed is how the construction would change the existing environment, not how a changing environment might affect the construction. While engineers and planners may perform a site inspection before designing an installation, they normally consider the parameters of that site a constant, not a variable. The general assumption is that the coast will not move, river levels will remain constant, the ground will not subside and precipitation will stay predictable. Most planners are not accustomed, and often not trained, to incorporate environmental change-induced site changes into designs. An added problem is that while some change may be broadly predictable, there is likely to be wide variability in some areas, making precise projections impossible. The science is improving, but there are still many unknowns and a lack of fine graining. This in itself is sometimes used as a justification to avoid incorporating any change at all. The result is that a multi-billion-pound, high-tech, environmentally friendly installation could be erected in what will soon become a flood

zone. Not only will the original investment be lost, the destruction of the property itself can cause new vulnerabilities.

It is not enough just to assess an installation's impact on the environment; one must also assess the impact of a changing environment on the installation. Then, as much as possible, the impact of that change must be integrated into planning and countered. In pursuit of this goal, this paper aims to identify some of the most susceptible nodes in the global energy infrastructure and show how they might be affected by moderate environmental change.

Hydropower

The successful management of hydroelectric installations is contingent on the ability to predict the volume of water entering the system. Before construction, care is taken to assess river level, hydrological cycles and precipitation patterns. Until recently, those findings were considered to be constants. For example, precipitation patterns might run on decadal cycles but the cycles themselves were considered largely predictable, and dams, turbines and reservoirs were designed accordingly. As the climate changes, what were constants are now becoming variables. This causes problems for both primarily glacier-dependent and primarily precipitation-dependent power plants.

Glacier-Dependent Hydro Plants

Hydroelectric installations, such as some in the Himalayas, Alps and Andes that depend primarily on glacial thaw, are likely to face difficulties in managing widely varying flows both seasonally and over the years. In Europe, mountain areas are likely to see more flooding in the winter and spring, and drier summers. These fluctuations can disrupt hydroelectric power generation, erode infrastructure and damage valuable regional industries.

Currently, many glaciers are retreating, producing more run-off than dams were designed for.¹ In China, for example, virtually all glaciers are in retreat and as of 2005 the start of spring flow has advanced by nearly a month since records began.² The Chinese Academy of Science estimates that by 2050 possibly 64 percent of China's glaciers could be gone.³

One immediate impact of that thaw is flooding. An estimated fifty new lakes have formed in Nepal, Bhutan and China as a result of thawing glaciers. Glacial lakes can be unstable and liable to burst their

¹ *South Asian Disaster Report 2007* (New Delhi: SAARC Disaster Management Centre, 2008), pp. 61–66.

² *Stern Review: The Economics of Climate Change* (London: HM Treasury, 2005), p. 78.

³ *The Fall of Water* (UNEP, 2005), available at <www.unep.org/PDF/himalreport.pdf> (April 15, 2010).

banks, as happened in Nepal in 1985, when one outburst washed away communities and a hydroelectric installation.⁴ It is also possible that in areas that are already susceptible, the added geological stresses caused by the new lakes could be the 'last straw' that triggers an earthquake.

Eventually, once the glaciers reach a minimal extent, the flow may markedly decline, creating a new set of challenges, including a potential decline in hydroelectric production and increased competition with other sectors, including agriculture, for the water itself.

Precipitation-Dependent Hydro Plants

Hydro plants that depend primarily on predictable seasonal precipitation, such as many of those in India, will find it increasingly difficult to anticipate flow. This could potentially cause a decline in power generation, floods and irrigation problems.

Unexpected rainfall has already complicated the management of some of India's many dams (the country is one of the world's major builders of dams). In India, as in many other places in the world, dams often serve three purposes: flood control, irrigation and power generation. Most rain-dependent plants are designed to store water from the rainy season in order to be able to irrigate and generate power in the dry season. Those plans rely on predictable rain patterns. Some Indian dam managers are working on monsoon schedules that assume regular 35-year rainfall cycles. However, in 2008-09, hydroelectricity generation in India declined by 8.42 percent relative to the previous year. The loss was blamed on inadequate rainfall.⁵

The situation can be equally problematic when there is too much water for the design of the installation. If the reservoir fills in the rainy season and then, owing to changing precipitation patterns, the rain keeps falling well into what should be the dry season, the reservoir can back up and risk inundating the villages upstream. If in order to prevent that the dam's floodgates are opened, the released water can add to the already swollen river and flood the cities downstream.

It was just such a downstream flooding that happened in August 2006 to Surat, an Indian city with a population of over 3 million people with a thriving economy as one of the world's largest diamond-cutting centres. Unseasonably heavy rains overwhelmed dam management and led to the sudden release of water from an upstream dam. The resulting floodwaters covered around 90 percent of the city and destroyed nearby villages. Over a hundred people are known to have died, hundreds more went missing, and disease spread as thousands of animals drowned and rotted in the waters. The financial cost was at least in the tens of millions

⁴ *Ibid.*

⁵ "Power generation growth plummets to 2.71% in FY'09," *Times of India*, April 9, 2009.

of dollars, and the cost of the loss of rare manuscripts from the city's academic institutions was incalculable.⁶

Other Factors

These flow extremes, especially when combined with other environmental change factors such as deforestation, can cause erosion, subsidence, landslides and siltation, each of which can affect the efficacy and stability of hydroelectric power plants.

There are added political complications. Disputes between states, already concerned over electric power- and water-sharing, will only get worse as water supplies become even more erratic and hydroelectricity becomes less reliable. Additionally, Clean Development Mechanism financing and the push for low-carbon power generation generally is resulting in a new era of dam building. Over a quarter of all CDM projects are for hydroelectricity, with 784 slated for China alone.⁷ Some projects are well conceived; others less so. It is critical that all new and existing plants be assessed to determine how environmental change over the lifespan on the dams will affect both their power generation viability as well as their structural integrity.

Nuclear Power

Nuclear power generation may also face challenges in ensuring output and site security. Reactors usually require a large amount of water for cooling. As a result, they are generally situated in areas that are susceptible to environmental change. They are normally either on the coast, making them increasingly vulnerable to sea level rise, extreme weather and storm surges, or they are on rivers, lakes or reservoirs and are dependent on increasingly valuable, and variable, freshwater supplies.

Some installations have already been tested. There has been a degree of flooding at nuclear power plants in the U.S., France and India, and in 1992 Hurricane Andrew caused extensive damage to the Turkey Point site in Florida.

In the UK, many of the existing coastal power stations are just a few metres above sea level. The Dungeness plant, in coastal Kent, is also built on an unstable geological formation. Already the site needs regular management to stay protected. Many of these installations are ageing,

⁶ Dinesh Kumar Mishra, "The unbearable lightness of big dams," *Hard News*, October 2006; Himanshu Upadhyaya, "Cry me a river," *Hard News*, October 2006; Himanshu Thakkar, "Damn it, this was designed!" *Hard News*, October 2006; Monika Nautiyal, "Desert into sea," *Hard News*, October 2006; Ashok Patel, "Modidom's watery grave," *Hard News*, October 2006.

⁷ UNEP Risoe CDM/JI Pipeline Analysis and Database, <<http://cdmpipeline.org/cdm-projects-type.htm#6>> (April 15, 2010).

and there is momentum for new plants to be commissioned. However, as noted above, it is difficult to get communities to accept a nuclear power station in their region, so in many cases the proposal is for the new plants to be located on the same sites as the old ones. The government has given assurances that builders would have to “confirm that they can protect the site against flood-risk throughout the lifetime of the site, including the potential effects of climate change”.⁸ It is, however, difficult to estimate both the lifetime of the site (those who built the existing installations did not factor in that new ones would be going in beside them, markedly extending the lifespan of the site) and the potential effects of climate change. For example, while sea level rise and storm surges may be increasingly well-understood, other disruptive factors, such as the possibility that changes in wave action could liquefy coastal sands, are not.⁹

Riverside plants have different problems. In Europe, cooling for electrical power generation (including both nuclear and fossil fuel plants) accounts for around one-third of all water used. However, in some areas drought is reducing river, lake and reservoir levels at the same time as air and water temperatures are increasing.

During Europe’s record-breaking heat wave of 2003, temperatures across the continent reached more than 40° Celsius. As a result, in France, 17 nuclear reactors had to be powered down or shut off. The reduction in generation capacity forced state-owned Électricité de France to buy power on the open market at close to ten times the cost it was charging clients. The inability to generate its own power in a heat wave cost the utility an estimated €300 million.¹⁰

The Hadley Centre predicts that, by 2040, heat waves such as the 2003 one will be “commonplace”. The effect on any form of power generation requiring large amount of water (including coal-powered plants) is likely to be substantial.¹¹

The same heat conditions that make it difficult to deliver power also create a peak in demand owing to the desire for air conditioning. As a result, as average temperatures increase, it may take less of a temperature spike to affect system stability. In the summer of 2006, which was not as hot as 2003, France, Spain and Germany all had to power down nuclear

⁸ “Flood risk ‘won’t stop nuclear’,” *BBC News*, July 22, 2008.

⁹ Michael J. Savonis, *et al.*, “Impacts of climate change and variability on transportation systems and infrastructure: Gulf Coast Study, phase 1, U.S. Climate Change Science Program Synthesis and Assessment Product 4.7,” U.S. Department of Transport, March 2008, pp. 4-38.

¹⁰ James Kanter, “Climate change puts nuclear energy into hot water,” *New York Times*, May 20, 2007.

¹¹ Vicky Pope, “What can climate scientist tell us about the future?” *Met Office*, Undated, <<http://www.metoffice.gov.uk/climatechange/science/explained/explained1.html>> (April 15, 2010).

plants because of heat and water problems. Exemptions were also given, allowing the plants to discharge water hotter than normally permitted into ecosystems, potentially disrupting other industries, such as fisheries. Installations in the U.S. have experienced similar problems.

Given the high cost, long lifespan and potential for damage of nuclear power plants, it is essential that substantially more research be done on how they will interact with an increasingly volatile global environmental system.

Offshore/Coastal Production and Facilities

As more accessible oil and gas sites are depleted, more difficult offshore and coastal production may gain in importance. Offshore and coastal oil and gas extraction is accomplished under a wide range of conditions, from the tropics to the tundra. The challenges vary depending on the location. In order to assess the variety of risks, case studies of the uncertainties in the Gulf Coast of the United States and the Arctic are instructive.

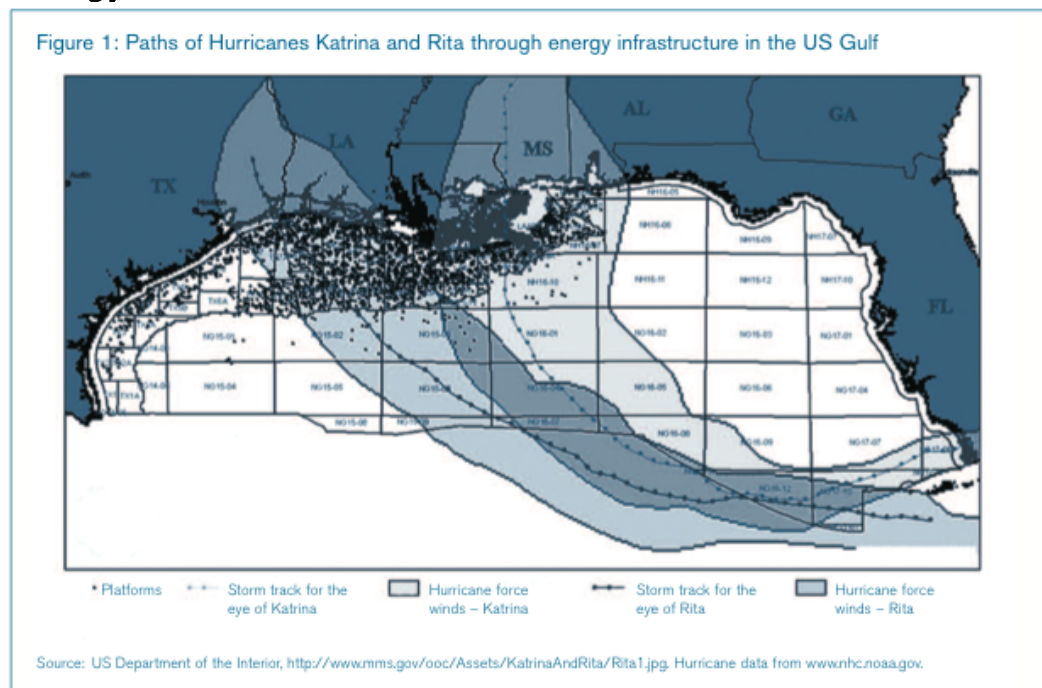
U.S. Gulf Coast

Over a quarter of U.S. oil production and close to 15 percent of U.S. natural gas production come from the Gulf of Mexico. As of August 2008, there were over 3,800 production platforms of various size operating in the Gulf. Additionally, this region refines around 30 percent of the U.S. oil supply and contains 42,520 km of onshore pipelines.

Climate change projections anticipate that the U.S. Gulf Coast will see increased flooding and extreme weather events. Storm activity has already affected supply. In the summer of 2005, Hurricane Katrina shut off what amounted to around 19 percent of the U.S.'s refining capacity and, combined with Hurricane Rita, damaged 457 pipelines and destroyed 113 platforms (see Figure 1).¹² Oil and gas production dropped by more than half, causing a global spike in oil prices. Much of the infrastructure destroyed in 2005 was rebuilt in the same location, leaving it vulnerable to similar weather events.

¹² "MMS updates Hurricanes Katrina and Rita damage," *Minerals Management Service*, May 1, 2006, <<http://www.mms.gov/ooc/press/2006/presso501.htm>> (April 15, 2010).

Figure 1. Paths of Hurricanes Katrina and Rita through Energy Infrastructure in the U.S. Gulf.



Source: Cleo Paskal, *The Vulnerability of Energy Infrastructure to Environmental Change*, Briefing Paper, Chatham House and Global EES, EERG BP 2009/01, April 2009 (reissued with additions, July 2009), p. 6.

In the summer of 2008, Hurricanes Gustav and Ike passed through the Gulf and destroyed 60 platforms. Interestingly, even before the hurricanes arrived, the economic effect was felt. What amounted to almost 10 percent of U.S. refining capacity, as well as much of offshore Gulf production, was shut down in preparation for the hurricanes. This shows that even just the threat of extreme weather can affect supply and price. Climate change predictions suggest that this sort of disruption is likely to become more common.

There are also other potential impacts. While most pipelines are buried, and thus seemingly insulated from the effects of severe weather, there are exposed nodes, such as pumping stations and valves, that are vulnerable. Also, it is uncertain how changes in water tables, soil structure, stability, erosion and subsidence might affect the pipelines.¹³ Understanding how, or if, those factors may affect supply will require more research.

¹³ Michael J. Savonis, *et al.*, "Impacts of climate change and variability on transportation systems and infrastructure," *op. cit.*, pp. 4-37 to 4-43.

Other Low-Lying Coastal Facilities

Many of the world's largest oil and gas facilities (including Ras Tanura, Saudi Arabia; Jamnagar, India; Jurong Island Refinery, Singapore; Rotterdam Refinery; and major installations in the Niger Delta) are only slightly above sea level. This leaves them vulnerable to rising sea levels, storm surges, increasing storm activity, subsidence and changes in ground composition. If even one of these regions is affected, it could affect local security and global supply and markets.

Arctic

The U.S. Geological Survey estimates that the Arctic might contain over a fifth of all undiscovered oil and gas reserves.¹⁴ One study postulated that Siberia could contain as much oil as the Middle East.¹⁵ However, dreams of a resource bonanza in the north are premature. The environment is difficult and becoming increasingly unpredictable. Norway's northern Snohvit gas field cost 50 percent more than the original budget and, in the autumn of 2006, North Sea storms sank a 155-metre Swedish cargo ship and caused an oil rig to break away from its tow and be set adrift off the coast of Norway.¹⁶ As one North Sea oil industry executive said: "We've had our third 'once-in-a-hundred-year' storm so far this year."¹⁷

In the short to medium term, there are likely to be higher waves, increasing storm activity and more icebergs threatening offshore rigs and complicating shipping.¹⁸ Additionally, with warmer and wetter air freezing and thawing more often, icing of ships, aircraft and infrastructure will become more common.¹⁹ Also, many key elements of production, such as how to contain an oil spill in Arctic waters, are poorly researched. All of this could result in high insurance costs, hampering exploration.

¹⁴ "90 billion barrels of oil and 1,670 trillion cubic feet of natural gas assessed in the Arctic," USGS Newroom, July 23, 2008, <http://www.usgs.gov/newsroom/article.asp?ID=1980&from=rss_home> (April 10, 2010).

¹⁵ Beth Chalecki, "Climate change in the Arctic and its implications for U.S. national security," Oceanic Studies, Fletcher School of Law and Diplomacy, <fletcher.tufts.edu/ierp/ideas/pdfs/issue2/Chalecki_Arctic.pdf> (August 15, 2006).

¹⁶ "Nordic storm sink Swedish ship," *BBC News*, November 1, 2006; "Arctic riches coming out of the cold," *International Herald Tribune*, October 10, 2005.

¹⁷ Private conversation.

¹⁸ "Nordic storm sink Swedish ship." *op. cit.*; "Arctic riches coming out of the cold," *op. cit.*

¹⁹ "Naval operations in an iceless Arctic," Oceanographer of the Navy, Office of Naval Research, Naval Ice Center, United States Arctic Research Commission, briefing paper for a symposium on 17–18 April 2001.

Energy Production and Distribution in Cold Climates

An additional problem for offshore Arctic energy extraction is that onshore Arctic energy infrastructure is likely to suffer substantial damage. Coastal areas are already seeing more erosion and are weathering stronger storm activity. However the biggest problem may be the thawing of the permafrost.

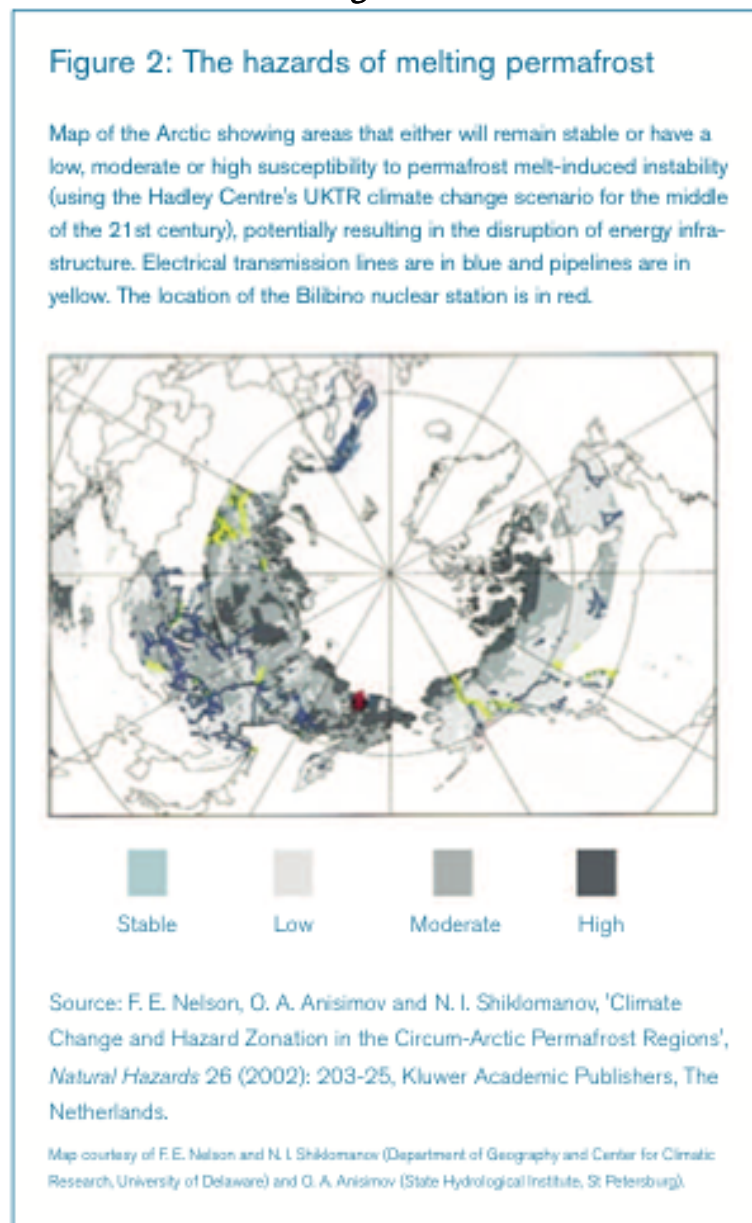
Permafrost, essentially permanently frozen land, acts as a concrete foundation for infrastructure in cold climates. It covers around 20 percent of the planet's landmass, including large areas of Russia, parts of the Alps, Andes and Himalayas, and almost half of Canada. Many of these are energy production regions. They are also regions of energy transmission and distribution. The Trans-Alaska pipeline alone carries as much as 20 percent of the U.S. domestic oil supply.²⁰ As temperatures rise, the permafrost thaws. The ice trapped inside the frozen ground liquefies. If there is poor drainage, the water sits on the earth's surface and floods. If there is good drainage, the water runs off, potentially causing erosion and landslides.

Thawing permafrost has the potential to severely affect infrastructure in cold climates (see Figure 2). Linear installations such as pipelines, electrical transmission lines and railways are only as strong as their weakest point. If one section is destabilized, the entire supply can be disrupted. Already in some cold climates pipelines, roads, ports and airports are at risk of imminent structural damage and possible permanent loss. In Alaska, complete Arctic communities are being relocated. One of China's top permafrost experts who was involved in the multi-billion-dollar, state-of-the-art Tibet railway, built in part on hundreds of kilometres of Himalayan permafrost, was quoted as saying, "Every day I think about whether the railway will have problems in the next ten to twenty years."²¹ Although the railway is still in operation, not long after its opening sections of the foundation started sinking.²² Often engineering solutions to these problems can be found, but they can add substantial costs and affect performance.

²⁰ Beth Chalecki, "Climate change in the Arctic and its implications for U.S. national security," *op. cit.*

²¹ David Wolman, "Train to the Roof of the World," *Wired*, July 2006.

²² Pankaj Mishra, "The train to Tibet," *The New Yorker*, April 16, 2007.

Figure 2. Hazards of Thawing Permafrost.

Source: Paskal, *The Vulnerability of Energy Infrastructure to Environmental Change*, *op. cit.*, p. 7.

Construction and repair are also being affected. In cold climates, heavy equipment is often moved in the winter when the ground is most solid. With warming, that window is shortening. In some areas of Alaska, for example, the number of days per year on which heavy equipment can be driven on the tundra has halved.

Not only does environmental change create challenges for new cold climate resource extraction, but existing installations that rely on ice roads, waste containment and pipelines built on thawing permafrost may need to be reassessed. In August 2006 a BP pipeline in Alaska corroded and broke. While this was not a direct result of environmental change, it

gave an indication of the sort of vulnerabilities that may become more likely if thawing permafrost undermines pipelines. The line carried close to 2.6 percent of the U.S. daily supply and the closure created an immediate spike in oil prices and gas futures. The U.S. government considered releasing emergency stockpiles and the Alaska government faced a financial crunch.²³

The stability of cold climate infrastructure is often overestimated. For example, with the retreat of Arctic sea ice a shipping route from Russia to Canada, through the Northwest Passage, has been mooted. Russia has offered to keep the Canadian section of the route open past the summer season with icebreaker convoys. The proposed Russian terminal is Murmansk. The proposed Canadian one is Churchill, Manitoba, on Hudson Bay. Shipping via Churchill can cut transit routes between Russia and the U.S. Midwest by hundreds of kilometres. Under the plan, grain is the main proposed cargo; however, fossil fuels could also be transported. Some in Ottawa support the plan. However, Churchill is only linked to the rest of Canada by rail, not road, and the railway, built in many places on permafrost, is already suffering from deteriorating tracks. There have already been derailments and at times in the summer the train cannot travel faster than 10 km an hour. This is an example of realities on the ground literally undermining economic and strategic analyses made in distant locations.

With environmental change, infrastructure problems in cold climates are likely to become more common. It is going to take a major investment in permafrost and cold climate engineering research to find ways to rebuild Arctic and other cold climate infrastructure in a manner that will be viable over the long term.

Other Causes of Disruption

Any extreme weather event, such as high winds, heavy rains/snows and ice storms, can impair power delivery, and there are global predictions of an increase in these kinds of disasters. One UK government report, commissioned after the costly summer floods of 2007, has found that potentially hundreds of UK substations are at risk of flooding.²⁴ The wake-up call came that summer when a switching station near Gloucester, servicing around 500,000 homes and businesses, came within centimeters of being flooded. Stronger storms can also bring down power lines and some areas, such as parts of the northern United States and southeastern Canada, may face more ice storms like the one that cut off

²³ Mary Pemberton, "BP: Oil production may be closed months," *Associated Press*, August 7, 2006.

²⁴ David Shukman, "Flood risk fear over key UK sites," *BBC News*, May 7, 2008.

the power for millions in the winter of 1998. Extreme events of all sorts are likely to become more common, straining power delivery systems.

Renewable Energy Generation

Every form of energy generation, including renewables, and every installation site chosen should be evaluated for its stability in times of environmental change. For example, while solar plants may seem immune from disruption as long as the sun transits the sky, if they are built on flood plains they risk being rendered useless. Wind farms should assess if long-standing air currents may shift or if the hills they are often built on are likely to erode or suffer from landslides. Geothermal power plants should ensure that they do not trigger earthquakes. Tidal generation should incorporate the effects of sea level rise, erosion, storm activity and so on. Just because an energy source is “green”, this does not mean it is sustainable under environmental change conditions.

Economic Recalculations Caused by Environmental Change

The clearest example of how energy supplies may be affected by a re-evaluation of cost is the way in which all of the above-mentioned disruptions (or even the likelihood of disruption) may affect insurance costs, potentially endangering the economic viability of certain investments.

Other factors may change calculations as well. For example, if predictions of increasing water scarcity hold true, fresh, clean water may substantially increase in value. This would force a re-evaluation of the real cost not only of hydro and freshwater-cooled nuclear installations, but of fossil fuel extraction and refining techniques that pollute water which could otherwise be used for drinking and irrigation.

Already China has abandoned or suspended the vast majority of its coal-to-liquid projects, in part as a result of concerns about water availability. Another potential area of concern is Canada’s oil sands. The method of extraction used in the oil sands requires and contaminates large amounts of water. Currently Canada is perceived to have abundant freshwater; however that is predicted to change in some regions as the climate shifts. Already there are concerns about water quality in some of the communities that share river systems with the oil sands. Apart from the domestic value of freshwater availability, ensuring a stable supply of freshwater for agriculture in Canada has wider implications. It is increasingly likely that, as other areas of the planet, such as Australia, become less fertile, Canadian agriculture’s contribution to global supply will gain in relative importance.

Geopolitical Factors

Many of the potential disruptions mentioned could engender a political response. For example, in the case of Russian pipelines being undermined by thawing permafrost, if the engineering required for stabilization proves too costly, Russia might switch increasingly from pipelines to tankers. This would allow Russia much greater flexibility in delivery and could lead to greater politicization of supply.

It is also possible, though quite controversial, that an increasingly parched U.S. will look to Canada to supplement its water deficiencies. In some areas of the U.S., such as the agricultural belts and water-scarce cities such as Las Vegas, water security might become more important than oil security. Other forms of energy may be found, but it is more difficult to find other forms of water. In such a case, U.S. energy security policy (which has been supporting the water-polluting Canadian oil sands) might come into conflict with U.S. water and food security policy (which would benefit by ensuring that a vast water supply to the north is not contaminated).

Another problem related to the politics of water that might affect energy supply could arise when dam building deprives one group, region or country of its expected supply of freshwater. Attacks on the installations themselves are even conceivable, should some become desperate enough as a result of increasing water scarcity - their goal being to destroy the dam in order to attain water supply.

Conclusion

There are concerns about both older installations not being designed for new conditions and new installations not integrating change into their planning. Either situation could result in marked decreases in energy output and risks to the installations themselves. That, in turn, could affect energy prices, economic growth and regional and global security. Volatile energy prices have the potential to destabilize major economies.

Many of the challenges outlined above can be overcome with sufficient research, planning, engineering and financing. In some cases, it may even be possible to integrate change into planning in such a way that energy output increases with changes rather than decreases. For example, hydro installations in regions that are expecting higher rainfall could be designed to eventually take advantage of that excess flow, rather than be overwhelmed by it.

However, the reinforcement of global energy infrastructure is unlikely to happen overnight. A number of steps are required:

1. An acknowledgment that the problems are real and wide-ranging;
2. A will to counter them;

3. Appropriate investment in, and research on, potential impacts as well as engineering and design solutions;
4. Implementation;
5. Continual re-evaluation in the light of changing environmental conditions and predictions.

It is in the best interest of those concerned with energy security, such as national governments and the business community, especially the energy and insurance industries, to ensure this happens as quickly as possible. Until it does, it is to be expected that there will be increasingly frequent disruptions to energy supply, potentially in multiple locations and sectors at the same time. The economic, social and political costs are likely to be substantial.

At the same time, it may make sense to focus on building a more decentralized energy structure, preferably based on locally available renewables situated in secure locations. A degree of regional energy self-sufficiency could provide a better defence against the sort of large-scale outages that result when centralized power systems are compromised. This sort of regional, network-based system might also prove more flexible and adaptive, and therefore more able to cope with the increasing variability and unpredictability caused by environmental change.

Finally, it is worth remembering that energy infrastructure is often among the best-funded, planned and maintained constructions available. The challenges that even this well-supported sector will face are an indication of the vulnerability of other large sections of the critical infrastructure that support our economies, security and lives.

Potential Security Implications of Environmental Change in Central Asia

*Tobias Siegfried**

ABSTRACT

Climate change dynamics in the Central Asia region will be multifaceted and, while key stressors have not yet been identified nor potential impacts quantified, these dynamics translate into an increased vulnerability in the region. Effects will be exacerbated due to the ongoing degradation and depletion of natural resources. What is urgently needed is a new long-term trans-boundary water and energy resources - sharing agreement that is efficient, fair and flexible and that guarantees, to the highest extent possible, environmental sustainability.

Keywords • Climate Change • Environmental Change; Adaptation • Mitigation • Hydropower • Water • Energy • Irrigated Agriculture • Resources Management

Introduction

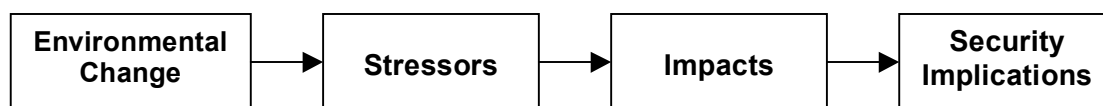
There exists a general consensus that future climate change has the potential to severely impact fragile regions on the planet, especially the semi-arid to arid zones.¹ If adaptation strategies are absent and

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¹ "IPCC, 2007: Summary for Policymakers," in *Climate Change 2007: Impacts, Adaptation and Vulnerability*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.), Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge, UK: Cambridge University Press, 2007), pp. 7-22.

institutions are not in place for mitigation, economies will suffer and intra- and interstate conflicts over the allocation of scarce resources will potentially ensue. These developments, together with growing population pressures, have the potential to increase social tensions and cause a dramatic deterioration of the security situation at watershed scales and beyond (see Figure 1).² Central Asia, in particular, is one of the regions vulnerable to environmental change.

Figure 1: The Impacts of Environmental / Climate Change May Lead to Severe Security Implications if Components of Environmental Change and Impact Pathways Via Stressors Are Not Adequately Understood and Adaptation / Mitigation Strategies Not in Place.



Central Asia is a landlocked region of some 4 million square kilometers with 80 million inhabitants, a mere 2 percent of Asia's population. Yet it sits astride US\$3 trillion of fossil fuels and remains a strategic crossroads at which the interests and influences of foreign lands meet.

The five Central Asian republics crucially depend on the availability of sufficient amounts of annual renewable freshwater for hydropower production in the upstream and for irrigated agriculture in the downstream. The degree of water's importance to the region is a simple matter of geography and climate. Central Asia is arid except for the mountainous regions of Kyrgyzstan and Tajikistan, where annual precipitation feeds the region's major rivers, the Amu- and Syr-Dariya. It was these rivers, and the Aral Sea into which they drained, that drew in the Soviet Union in the 1920s. Central Asia's last foreign overlords, the Soviets produced 20,000 miles of canals, 45 dams, and 80 reservoirs, providing water for agriculture and industry. The system was centrally controlled from Moscow until 1991, after which a group of untested national governments was forced to manage what had been a unitary economic system untroubled by largely factitious borders.

After the fall of the Soviet Union, the newly established Central Asian republics enshrined the principle of resource sovereignty in their constitutions. Their legalistic claims had, of course, little to do with hydrological reality. In upstream Kyrgyzstan and Tajikistan, two nations

² Andrei P. Kirilenko, Nikolay M. Dronin, Gylaiym Zh. Ashakeeva, "Projecting Water Security in the Aral Sea Basin Countries: Climate Change, Irrigation, and Policy," *Natural Resources: Economics, Management and Policy* (2008): 51-87.

with only a negligible share of fossil fuels, water provides the cheapest source of electricity. This is especially important in the winter months, when heating needs are the most urgent. In order to generate hydropower during those months, the Kyrgyz and Tajiks spend the warmer ones husbanding water in several large reservoirs.

But that is precisely when downstream Uzbekistan, Turkmenistan, and Kazakhstan have the most pressing need for irrigation water. This means that upstream and downstream demand patterns are diametrically opposed, and seasonal variations and the partitioning of infrastructure have led to a species of water diplomacy that follows deal-making with deal-breaking and uses rivers as collateral.³ Thus, the water-energy-agriculture nexus in the region unfolds in a complex interaction of independent state and non-state actors with rival objectives for freshwater allocation in space and time.

Current Issues

National decision-makers have shown decreasing interest for proper trans-boundary resources management in recent years. For example, the barter agreement in place since 1998 regulating water and energy compensations between the upstream and downstream has all but collapsed after an unprecedented freshwater scarcity in 2008 that may be a harbinger of what the future holds for the region.⁴

Neither the water and energy allocation and distribution among the various sectors and users, nor the agricultural sector strategies including crop choice are guided by sound principles of efficient and sustainable resources management. On the contrary, up-and-coming Central Asian oligarchs try to gain substantial influence in the distribution of the monetary benefits of water and energy sales and belligerent talk about issues surrounding the nexus appears more and more on the agenda.⁵

The hydropower and irrigation infrastructure that was built during Soviet times is rapidly aging, which makes it ill-prepared to handle adverse impacts from future climate change. In many places, the monitoring network has fallen into disrepair and the coverage of data

³ T. Siegfried and T. Bernauer, "Estimating the performance of international regulatory regimes: Methodology and empirical application to international water management in the Naryn/Syr Darya Basin," *Water Resources Research* 43, W11406 (2007).

⁴ T. Bernauer and T. Siegfried, "On Cooperation, Compliance and Performance in International Water Management," *Global Governance* 14 (2008); T. Siegfried and L. Summerbell, "Fluid Diplomacy - A Looming Water War in Central Asia Could Mean Disaster for the Region and Beyond," *SEED Magazine*, January 7, 2009.

⁵ P. Quinn-Judge, "Conventional Security Risks to Central Asia a Summary Overview," Paper presented at the conference: *Energy, Environment and Future Security in Central Asia*, Rome, October. 2009.

collected on key environmental variables has been greatly reduced in the region.⁶

The on-going construction of new large-scale infrastructure in Kyrgyzstan and Uzbekistan adds fuel to the increasing trans-boundary tensions. The downstream is especially concerned about the Kamabarata I & II (Kyrgyzstan) and Rogun (Tajikistan) dam projects due to the fear of lacking expertise in the proper management of these large-volume storage systems (see also Figure 2). These concerns are certainly warranted as the former Soviet hydraulic and agricultural engineering elite is gradually retiring and leaving behind a notable vacuum in proper expertise which Central Asian republics are ill-prepared to backfill.

Further, the negative effects of past, unsustainable resource use and management practices are increasingly being felt. This occurs at a time when population is expected to grow by 20 million people over the next 40 years, which corresponds to a 30 percent increase relative to today, Uzbekistan contributing with 50 percent and Tajikistan with 25 percent to the expected growth (Data source: World Population Database, United Nations). The agricultural production in the downstream countries especially is showing signs of widespread yield decreases. The losses of soil fertility are mainly due to widespread soil salinization.⁷ The latter is a complex phenomenon of two controlling processes. First, it can be attributed to continuously rising shallow groundwater tables in irrigated low lands due to the lack of proper maintenance, repair and extension of the existing drainage systems including vertical drainage pumps. Second, the extent of soil salinization in the region is controlled by the diurnal freezing and thawing of top soil in the winter time.⁸

In summary, it has to be acknowledged that renewable freshwater is the backbone of Central Asia and key to the future viability of the region's economies. Over the last few years, management has been replaced with *muddling through*, which leaves the region vulnerable to the largely unknown dynamics related to a changing climate in the future.

Potential Future Climate Change Impacts in Central Asia

Recent research shows that glaciers outside the Antarctic have reacted to small-scale natural climate fluctuations in an acutely sensitive way over the past 100,000 years. Anthropogenic climate change makes this past natural variability look small and there is near-unilateral consensus

⁶ Personal communication: Dr. Yakovlev, Uzbek Hydromet Service, May 2008.

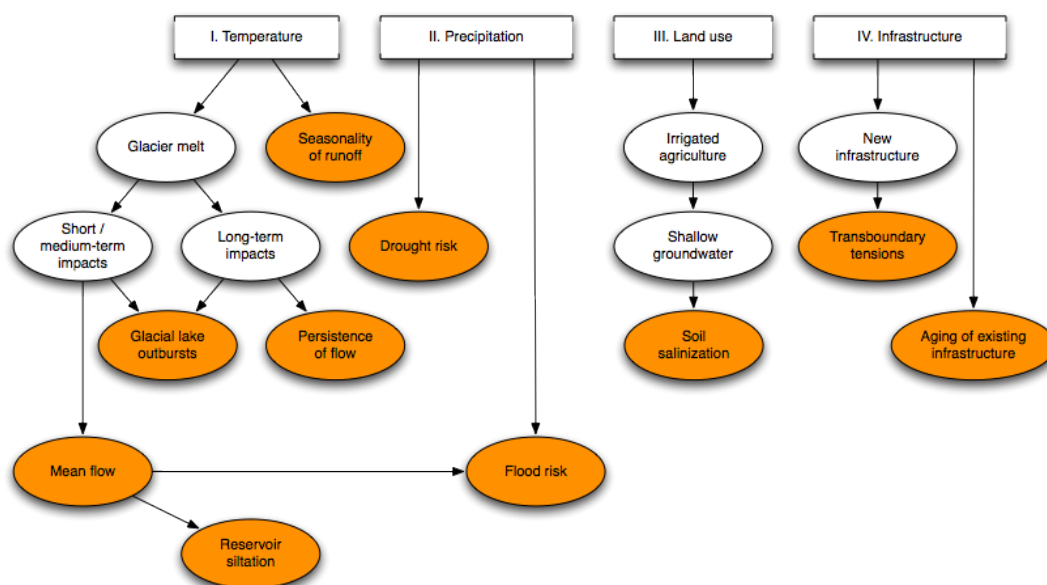
⁷ Funakawa S. and Kosaki T., "Potential risk of soils salinization in different regions of Central Asia with special reference to salt reserves in the deep layers of soils," *Soil Science and Plant Nutrition* 53 (2007): 634-649.

⁸ D. Zhang and Wang S., "Mechanism of freeze-thaw action in the process of soil salinization in northeast China," *Environmental Geology* 41, 1-2 (2001): 96-100.

among experts that glaciers outside the Antarctic will entirely vanish in the 21st Century.⁹

The time scales of land ice loss and the reduction in snow cover due to rising average temperatures in the mountain ranges of Tien Shan, Pamir and Hindukush have not yet been established despite the tremendous impacts in the downstream. Over the short to medium-term horizon, it is to be expected that increases in mean runoff will translate to increased water availability. For example, uniform melting of the estimated 150 km³ of glacier volume in the catchment of the Syr-Dariya over the next 50 years would increase mean runoff in the downstream of Syr-Dariya from 400 m³/s to 500 m³/s, all else being equal. This additional water needs to be properly managed so as to reduce risks from flooding during peak runoff times. Additional flow will also increase the load of suspended solids in the river waters thus causing higher sedimentation rates and augmenting the threat of reservoir siltation (see Figure 2).¹⁰

Figure 2: Depiction of the Four Main Components of Change with Associated Impacts (See Also Figure 1). Stressors are Highlighted in Orange Color.



⁹ J. M. Schaefer, G. H. Denton, S. Ivy-Ochs, P. W. Kubik, D. J. Barrell, F. Phillips, C. Schluechter, B. G. Andersen and T. V. Lowell, "Near-Synchronous Interhemispheric Termination of the Last Glacial Maximum in Mid-Latitudes," *Science* 312 (2006): 1510-1513.

¹⁰ W. B. Langbein and S. A. Schumm, "Yield of Sediment in relation to Mean Annual Precipitation," *American Geophysical Union Transactions* 39 (1958): 1076-1084.

As natural water storage in glaciers vanishes over the long-term, a change in the seasonality of the runoff will occur with increases in winter runoff and pre-agricultural season runoff during late winter and early spring.¹¹ Besides, an increase in runoff, variability and decrease in the persistence of flows will likely be observed with significant impacts in the downstream during the summer irrigation period. Adequate measures such as the construction of supplemental man-made storage will have to be taken in order to address these changes.

The predicted warming in Central Asia could lead to an increase in the moisture holding capacity of the atmosphere, thus impacting precipitation and the hydrology of the two Dariyas. However, there is inconclusive evidence as to the direction and magnitude of changes in precipitation in the region. Different isotope-based tree ring climate reconstructions are pointing to more humid conditions during past interglacial warm periods.¹² This could indicate a shift from a current climate of “Mediterranean character” to a wetter future with a corresponding intensification of the hydrological cycle in the region.

However, these predictions rely on extrapolation beyond historic climate ranges and hence are very uncertain. At the same time, a recent study of the climate change impacts on the discharge of the large Asian rivers that descend from the Tibetan plateau uses multi-model ensemble mean predictions from the common general circulation models to predict a reduction in the availability of annual renewable freshwater in Central Asia by 40 percent in 2100 relative to today.¹³ Models that show a trend towards drier conditions suggest that divergent moisture fluxes and changes in large-scale circulation patterns would explain such development.

Glacial lake outbursts in unstable geological environments due to retreating land ice may pose a severe and significant threat to downstream regions, to hydrological infrastructure and to settlements alike.¹⁴ Similarly, increasing temperatures lead to a thawing of permafrost thus destabilizing critical mountain slopes. Landslides into natural or man-made reservoirs could potentially damage dams in a catastrophic way. This threat has most prominently been recognized in the case of Lake Sarez, Tajikistan. The lake was formed in 1911 after an earthquake

¹¹ D. Nohara, A. Kitoh, M. Hosaka and T. Oki, “Impact of Climate Change on River Discharge Projected by Multimodel Ensemble,” *Journal of Hydrometeorology* 7 (2006): 1076-1089.

¹² K. S. Treydte, G. H. Schleser, G. Helle, D. C. Frank, M. Winiger, G. H. Haug and J. Esper, “The twentieth century was the wettest period in northern Pakistan over the past millennium,” *Nature* 440, 27 (April 2006): 1179-1182.

¹³ Z. W. Kundzewicz, D. Nohara, J. Tong, T. Oki, S. Buda and K. Takeuchi, “Discharge of large Asian rivers - Observations and Projections,” *Quaternary International* 208, (2009): 4-10.

¹⁴ Anjali Nayar, “When the ice melts,” *Nature* 461 (2009): 1042-1046.

triggered a massive landslide behind which 19 km³ of water are nowadays stored.

Rising temperatures can impair agriculture in the downstream directly. An increase in heat wave frequency in the oases of Uzbekistan, Turkmenistan and Kazakhstan as well as an increase of night-time temperature will impact agricultural yields of temperature sensitive crops.

Addressing Environmental Change

From the above discussion, it should become clear that climate change dynamics in the region will be multifaceted and complex with the potential for cascading effects and intricate feedback loops. Key stressors have not been identified yet and impacts not yet quantified. This clearly translates into an increased risk of exposure in Central Asia.

What is urgently needed in the region is a new long-term trans-boundary water and energy resource-sharing agreement that is efficient, fair, and flexible. Two distinct management challenges exist at different time scales for adaptation to and mitigation of the impacts of environmental change in Central Asia. These are real-time resources management issues as well as long-term planning issues. Real-time management issues include identifying efficient reservoir release policies during shortage conditions and optimizing irrigation deliveries. Another problem is the inter-temporal management of reservoir storages under hydrologic uncertainty, using short- and medium range operational forecasts. Long-term planning issues must address the effect of climate change on water resources availability, the effect of intensified irrigation on agriculture and the increasing demands for electrical power, and the design of water management policies and institutions as well as the extension of hydropower infrastructure in order to develop a coherent risk management plan.

Quantitative models must be developed to allow the measurement of trade-offs stemming from the allocation of these resources while accounting for future economic and environmental uncertainties. Such trade-offs would allow the hydrocarbon-rich but water-poor republics to provide energy compensation in return for guaranteed water supplies. As part of this process, a supra-national institution should be established to explicitly deal with questions of natural resources allocation in the region, as well as to foster dialogue and mutual trust between the multiple stakeholders.

The international community should back this institution - both with money and expertise - as the consequences could not be more dire. The implosion of national economies, precipitated by water failure, would witness the obliteration of all stabilizing social mechanisms and the onset

of chaos, with all the accompanying brigandage and brutality it summons.

Climate Change and Water Security: Implications for Central Asia

Renat Perelet^{*}

ABSTRACT

Global climate change poses serious threats to the Central Asian region's natural environment, and given the dependence of its socio-economic systems on natural resources, climate change could pose a threat to the region's socio-economic systems. For most countries in the region, agriculture represents a major sector of the economy and is by far the largest source of employment. Environmental changes - particularly changes in the availability of water - puts this critical sector at risk. The growing concern over climate change in Central Asia is due to the degree to which climate change affects the region's energy, water, and food security and how this can lead to political tensions and conflict unless this issue is carefully, and collectively, managed.

Keywords • Climate Change • Water Security • Agriculture; Water • Energy • Watershed

Introduction

Global climate change poses serious threats to the Central Asian region's natural environment and, given the dependence of its socio-economic systems on natural resources, climate change could pose a threat to the region's socio-economic systems themselves. For most countries in the region, agriculture represents a major sector of the economy and is by far the largest source of employment. Environmental changes - particularly changes in the availability of water - put this critical sector at risk. Relatedly, climate change has significant implications for energy security

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¹ "Expert: Europe 'unaware' of its water footprint," *EurActive*, February 18, 2009. <<http://www.euractiv.com/en/climate-environment/expert-europe-unaware-water-footprint/article-179526>> (April 10, 2010).

in the region. Mountainous Krygyzstan and Tajikistan rely heavily on hydropower for meeting their energy needs and climate change could exacerbate their energy insecurity if river flows diminish. Clearly, the nexus of climate change and energy security affects the region's water and food security.

In this region, production of some agricultural commodities has already decreased and the volume of available water resources and water quality are at risk of suffering from severe climate change impacts. As noted by Ms. M. Barlow, Special Adviser on Water Issues to the President of the UN General Assembly, in an interview to an EU News correspondent earlier this year, "it is amazing - stunning - that water is being ignored in the climate change debate."¹

Not only is Central Asia vulnerable to climate change impacts, but the region also significantly contributes to the problem by generating large volumes of Greenhouse Gas (GHG) emissions. Kazakhstan is the 30th largest emitter of carbon dioxide worldwide and Uzbekistan is the most carbon-intensive economy in the world.²

The growing concern over climate change in Central Asia is due to the degree to which climate change affects the region's energy, water, and food security and how this can lead to political tensions and conflict unless this issue is carefully, and collectively, managed.

Agriculture in Central Asia

By far, the two most significant crops in Central Asia are cotton and wheat. Only Kazakhstan does not cultivate significant amounts of cotton. This emphasis on intensive cotton cultivation in the Amu-Dariya watershed countries of Krygyzstan, Tajikistan, Turkmenistan, and Uzbekistan played a major role in the drying and polluting of the Aral Sea because of the large amounts of water and fertilizer used in cotton cultivation.

Aside from these two primary crops, the region produces a wide variety of products which include barley, corn, flax, grapes, potatoes, rice, sugar beets, sunflowers, tobacco, apricots, pears, plums, apples, cherries, pomegranates, melons, dates, figs, sesame, pistachios, and nuts.

Agriculture in Kazakhstan

Agriculture in Kazakhstan remains a small sector of the country's economy. Kazakhstan is the only country where agriculture's contribution to the GDP is under 10 percent - it was recorded as 6.7 percent, and as occupying only 20 percent of the country's workforce. At

² World Resources Institute Annual Report, 2005, <<http://www.wri.org/publication/wri-annual-report-2005>> (April 10, 2010).

the same time, more than 70 percent of its land is utilized for crops and animal husbandry. A negligible percentage of this land is used for crop growing, as 70 percent is used as permanent pastureland. The little land used for crops is located in the north of the country. Kazakhstan's largest crop is wheat, which it exports. Minor crops include barley, cotton, sugar beets, sunflowers, flax, and rice. Agricultural lands in Kazakhstan were depleted of their nutrients during the Virgin Lands Campaign of the Soviet era.

Agriculture in Kyrgyzstan

Agriculture in Kyrgyzstan is a significant sector of the economy. It comprises 35.3 percent of the total GDP and occupies 55 percent of the total workforce. Only 7.5 percent of the total land area is used for crop cultivation, but 44 percent of the land is used as pastures for livestock. Because of the many mountains of Kyrgyzstan, animal husbandry remains a significant part of the agricultural economy.³

Agriculture in Tajikistan

Agriculture in Tajikistan comprises 23.4 percent of the total GDP of Tajikistan's economy, but it employs 67.2 percent of the total workforce. Despite this, only 27 percent of total land is used for agricultural purposes - 6 percent as cropland and 23 percent as pasture. Most crops in Tajikistan require irrigation for successful cultivation. The largest crop in terms of economic importance is cotton. The intensive cotton cultivation in Tajikistan during Soviet times contributed to the drying of the Aral Sea.

Agriculture in Turkmenistan

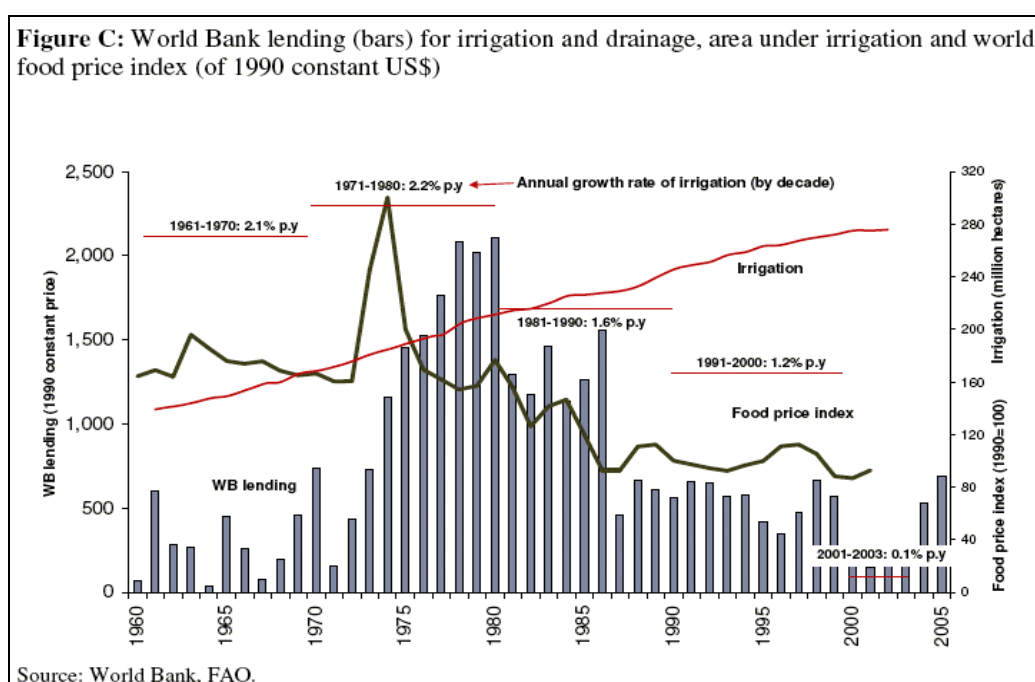
Agriculture in Turkmenistan is a significant sector of the economy which contributes 20.9 percent of the GDP and employs 48.2 percent of the workforce. However, only 4 percent of the total land area is cultivated. Because of the arid climate, irrigation is necessary for nearly all cultivated land. Minor crops of citrus fruits, dates, figs, melons, pomegranates, olives, and sugarcane are grown in some parts of the country. Sesame and pistachios are also grown in smaller quantities. The two most significant crops are cotton - which is grown on half of the country's irrigated land, and wheat. Although Turkmenistan was formerly the world's 10th largest cotton producer, exports have fallen by 50 percent in recent years. This is due in large part to the environmental difficulties of irrigation in a desert environment.

³ CIA - The World Factbook 2006 (Government Edition).

Agriculture in Uzbekistan

Agriculture in Uzbekistan produces 34.2 percent of the GDP of the economy and employs 44 percent of the workforce. Despite this, agriculture uses only 11 percent of the total land area, and occurs mainly in river valleys. The most significant crop in Uzbekistan is cotton. In 1999, Uzbekistan was the world's 5th largest producer. However, because of the risks associated with a one crop economy, Uzbekistan has been moving to diversify its production, resulting in drops in the total cotton production. Another cause behind the crop diversification efforts may be the large amounts of irrigation water and fertilizers needed for cotton.

Figure 1. World Bank Lending for Irrigation and Drainage



By 2060, the drying trend in a number of countries is expected to be offset by patterns of increasing runoff across Canada/North America, northern Europe, Siberia, Central Asia and northern China, East Africa, southern Arabian peninsula, peninsular India, Myanmar to Papua New Guinea.⁴

⁴ *Climate Change, Water and Food Security – Technical Background Document From the Expert Consultation Held on 26 to 28 February 2008* (Rome: FAO, 2008), <http://ftp.fao.org/docrep/fao/meeting/013/ai783e.pdf> (April 15, 2010).

Climate Change and Water Availability in Central Asia

Water management policies and their harmonisation are crucial because of the water interdependencies of the countries in the region (as it is shown in Figure 2 below).⁵

The Central Asian countries are undergoing radical economic transitions with great impacts on many sectors likely to be affected by climate change. Much of the agriculture of this arid region was developed in response to the agricultural plans of the former Soviet Union, the legacy of which is still there. Irrigated cotton production, for example, expanded from the 1960s through the 1980s, with significant impacts on water resources, the environment, and human health. Water resources were overcommitted to agriculture and were transferred unsustainably from several river systems.

Figure 2. Water Management in Central Asia⁶



Since the 1960s, the water quality in Central Asia has drastically deteriorated. The main reason for this has been the discharge of heavily polluted water through drainage systems currently making up to 15 per cent of the river flow volume of the Aral Sea basin. Since the 1960s,

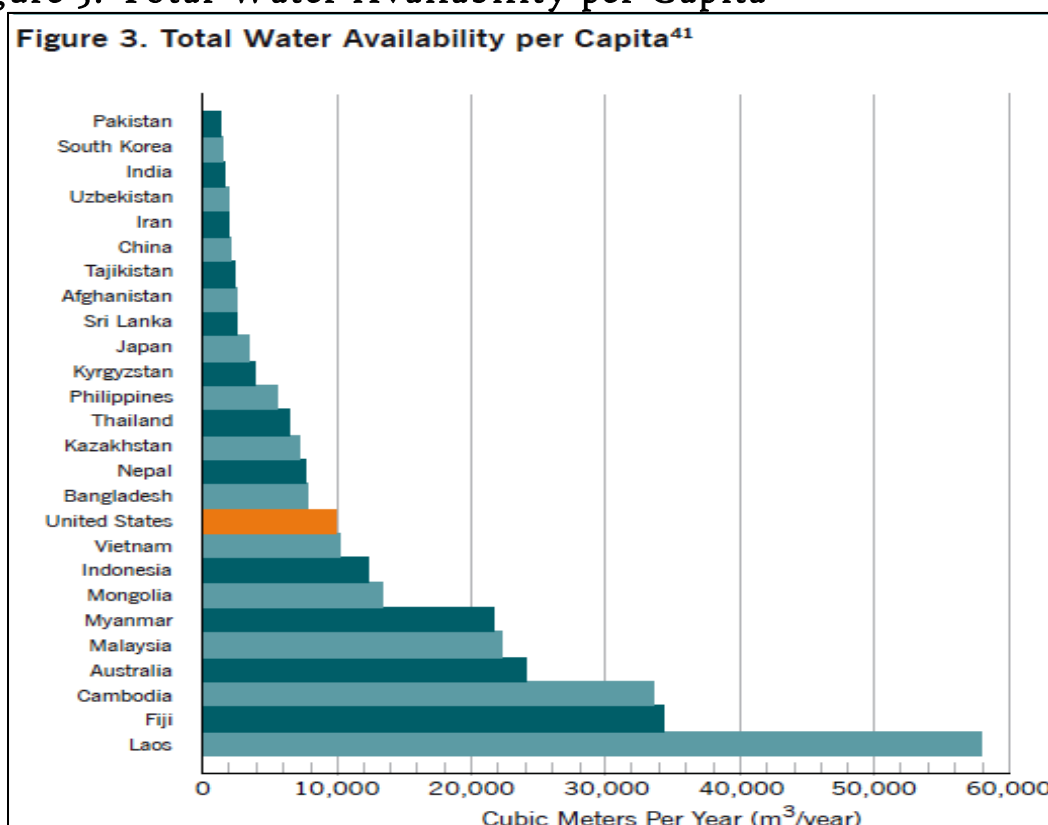
⁵ UNEP 2003, <<http://www.unep.org/annualreport/2003/>> (April 15, 2010).

⁶ Philippe Rekacewicz, "Water Management in Central Asia: State and Impact – Maps and Graphics," UNEP/GRID-Arendal, 2005 <http://maps.grida.no/go/graphic/water_management_in_central_asia_state_and_impact1> (April 15, 2010).

mineralization of water in the lower reaches of the Amu-Dariya and Syr-Dariya has at least doubled, and water has also become unacceptable for drinking.⁷

Throughout the Central Asian nations, options to reduce water use include lining more irrigation canals to reduce seepage losses (up to 40 percent of diverted water is lost in arterial channels) and reducing the area of crop and pasture irrigated by inefficient flooding methods while increasing the area of more-valuable fruit and vegetable crops irrigated by efficient drip and below-ground irrigation systems. In Turkmenistan, for example, cotton irrigation required 12,000 m³ water/ha in the mid-1990s; more modern techniques would require only 7,000 m³/ha. More than one-third of all water used in Turkmenistan is applied to irrigated cotton; thus, modernizing techniques could save 20 percent of the country's current water use. Uzbekistan plans to reduce water consumption in agriculture and opportunities for similar savings could also apply in Tajikistan.

Figure 3. Total Water Availability per Capita⁸



⁷ *Central Asia Human Development Report 2005* (UNDP, 2005), http://hdr.undp.org/en/reports/regionalreports/europethecis/central_asia_2005_en.pdf (April 15, 2010).

⁸ *Asia's Next Challenge: Securing the Region's Water Future*, Asia Society, April 2009, <http://www.asiasociety.org/files/pdf/WaterSecurityReport.pdf> (April 15, 2010).

Turkmenistan features an extremely uneven allocation of water resources: 95 percent of the share is Amu-Dariya, the other 5 percent of the share is from all the other rivers, springs, and discovered reserves combined, including the underground water in the south and southwest of the country.

Water scarcity has an immediate impact on the natural environment and human living conditions and a secondary impact on agricultural productivity. Turkmenistan has experienced tensions with Uzbekistan over water allocations from one of the most important water sources in the region, the Amu-Dariya, flowing through the eastern part of the country.⁹ At the same time, this crucial water source has been regularly listed among the most polluted water bodies in Central Asia.

Virtual-Water Concept

About 70 per cent of all water used by humans goes into food production. The virtual-water content of a product (a commodity, good or service) is the volume of freshwater used to produce the product, measured at the place where the product was actually produced. It refers to the sum of the water used in the various steps of the production chain.

The water is said to be virtual because once the wheat is grown, the real water used to grow it is no longer actually contained in the wheat. The concept of virtual water helps us realize how much water is needed to produce different goods and services. In semi-arid and arid areas, knowing the virtual water value of a good or service can be useful towards determining how best to use the scarce water available.

Table 1. Total Water Availability per Capita¹⁰

The Virtual Water "Cost" of Agricultural Products	
•	The production of 1 kg wheat costs 1,300 L water
•	The production of 1 kg broken rice costs 3,400 L water
•	The production of 1 kg eggs costs 3,300 L water
•	The production of 1 kg beef costs 15,000 L water
•	The production of 1 cotton shirt of 300 gram costs 2,500 L water

The virtual-water content of a product consists of three components, called green, blue, and grey components. The “green” virtual-water content of a product is the volume of rainwater that evaporated during the production process. This is mainly relevant for agricultural products

⁹ UNEP, 2003, *op. cit.*

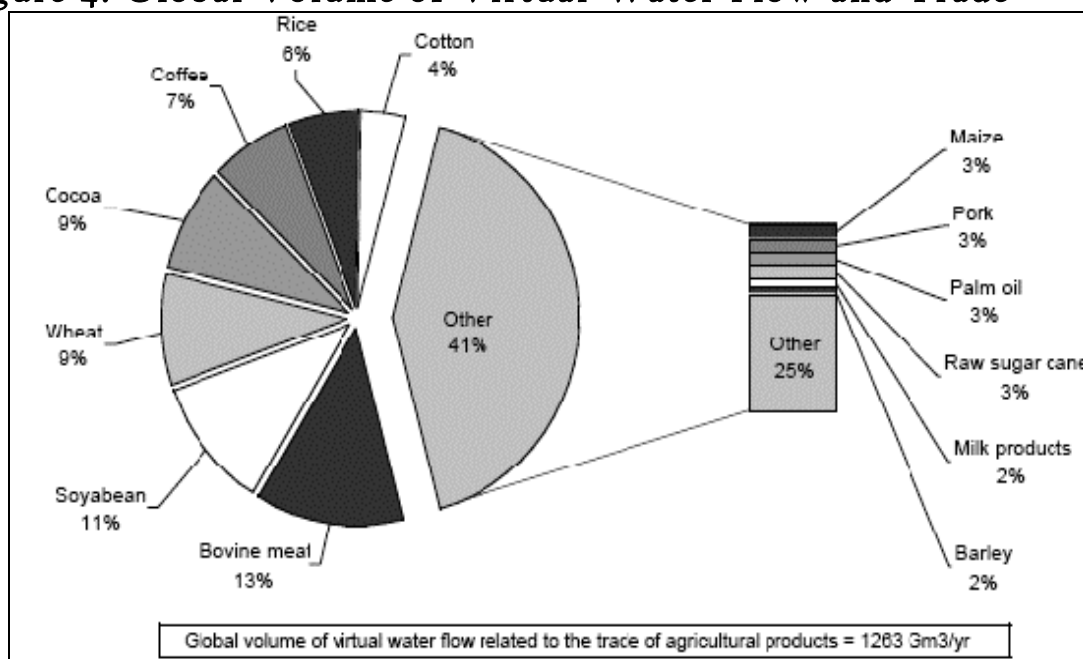
¹⁰ *Asia's Next Challenge: Securing the Region's Water Future, op. cit.*

where it refers to the total rainwater evaporation from the field during the growing period of the crop (including transpiration by the plants and other forms of evaporation).

The “blue” virtual-water content of a product is the volume of surface water or groundwater that evaporated as a result of the production of the product. In the case of crop production, the blue water content of a crop is defined as the sum of the evaporation of irrigation water from the field and the evaporation of water from irrigation canals and artificial storage reservoirs (although for practical reasons the latter component has been left out from our studies). In the cases of industrial production and domestic water supply, the blue water content of the product or service is equal to the part of the water withdrawn from ground or surface water that evaporates and thus does not return to the system where it originated.

The “grey” virtual-water content of a product is the volume of water that becomes polluted during its production. This can be quantified by calculating the volume of water required to dilute pollutants emitted to the natural water system during its production process to such an extent that the quality of the ambient water remains beyond acceptable water quality standards.

Figure 4. Global Volume of Virtual-Water Flow and Trade



Virtual-water trade refers to the idea that when goods and services are exchanged, so is virtual-water. When a country imports one ton of wheat instead of producing it domestically, it is saving about 1,300 cubic meters of real indigenous water. If this country is water-scarce, the water that is “saved” can be used for other purposes. If the exporting country is water-

scarce, however, it has exported 1,300 cubic meters of virtual-water since the real water used to grow the wheat will no longer be available for other purposes.

Only when pricing gives water an economic value will it become a relevant cost factor and hence have an impact on trade decisions.

Figure 5. National Virtual-Water Balances 1997-2001

Top 5 Exporter	Gm ³ /yr	Top 5 Importers	Gm ³ /yr
Australia	64	Japan	92
Canada	60	Italy	51
USA	53	UK	47
Argentina	45	Germany	35
Brazil	45	South Korea	32

Climate Change Response Policies

- *Mitigation:* GHG reduction through energy efficient technologies, Best Available Technology, Carbon sequestration by reforestation policies.
- *Adaptation:* energy efficient housing, climate change related consumption, climate change adaptable agricultural crops, agricultural adaptation.
- *Reducing human vulnerability through enhancing food security (individuals, communities, countries).*

As noted by the 2001 Intergovernmental Panel on Climate Change (IPCC), “[a]daptation is a necessary strategy at all scales to complement climate change mitigation efforts.” Furthermore, it was also noted in the report that “experience also demonstrates that there are constraints on achieving the full measure of potential adaptation. In addition, mal-adaptation, such as promoting development in risk-prone locations can occur due to decisions based on short-term considerations, neglect of known climatic variability, imperfect foresight, insufficient information, and over-reliance on insurance mechanisms.”¹¹

Three Dimensions of Food Policy

- *Economic:* Changes in food production patterns, restructuring agricultural crops and husbandry, energy- and water-efficient

¹¹ *Working Group II: Impacts, Adaptation and Vulnerability*, Intergovernmental Panel on Climate Change, 2001, <<http://ipcc.ch/ipccreports/tar/wg2/index.php?idp=10>> (April 15, 2010).

agriculture, virtual-water assessment in agricultural produce, and organic agriculture.

- *Environmental*: Enhancing ecosystem goods and services, soil fertility improvement, pollution charges for inadequate use of fertilisers and pesticides.
- *Social*: Changes in food consumption patterns, combating poverty, environmental education, culture, conscience

Key Issues in Water and Climate

Due to natural and anthropogenic causes, the climate pattern in future would have more extremes, causing frequent flash floods in some areas and severe droughts in others. Any global model on climate will not be able to predict the daily or weekly amount of rainfall over a given area. Under these circumstances, the only key issue is to stabilize and protect the farmer against the vagaries of climate, through watershed management or watershed development.

Worldwide climate change appears not only in temperature variability but in precipitation as well. There is a possibility to find the same trend of climate change characteristics in Central Asia. The understanding of this problem and the cooperation of many people is required for addressing the issues and impacts of climate change relating to floods and droughts.

Actions

Actions should include creating a resilient interface to absorb the shocks of the climatic changes and to provide some insurance for water managers who are properly managing micro-watersheds of first-order streams. Also, the micro-watershed management can greatly improve, among other benefits, the control of the silting process behind major dams.

Watershed and micro-watershed management must be promoted as a means of providing employment, minimizing soil erosion, controlling peak hydrograph, and of enhancing groundwater recharge from rainfall. The successful case of micro-watershed should be compiled and documented.

“The current lack of capacity and technical equipment has resulted in a “black hole” of weather information in some countries,” said Vladimir Tsirkunov, Senior Environmental Engineer for Europe and Central Asia and the team leader of the study. “The result is that it is impossible to effectively track and predict weather patterns developing in these areas. It is a serious problem because it has a spill-over effect on neighbouring countries and their economies-now and in the future.”

Farmers are among those hardest hit by shortcomings in forecasting services, according to the report. Agriculture is particularly important in Central Asian and Caucasus economies, and as a result, farmers in those countries have likely been disproportionately affected by deteriorating capacity.

A country like Tajikistan, for example, has to re-sow an average of 70,000 hectares each year because initial sowings are washed or blown away. Better forecasts could reduce those losses. Helping farmers to anticipate the kind of weather they will have will help increase yields while decreasing wasted resources. It will also help with other important aspects of farming like fertilizing and pest and disease control.

In view of the above and in order to strengthen environmental security in Central Asian countries, one can suggest:

- Considering virtual water content of produce and products made in Central Asian countries in their international trade and national economies to optimize water management,
- Introducing best-practice techniques that feature energy and water efficiency in Central Asian countries,
- Negotiating exchanges of natural renewable resources and/or access to them (in particular, biodiversity and ecosystem services) to new technologies from advanced countries, all of which could be carried out practically on a non-monetary basis.

Environment and Security in the East Caspian Region

Timur Berkeliev^{*}

ABSTRACT

It is generally believed that environmental problems themselves cannot threaten security, but can represent a security threat in combination with other factors. Considering various forms of interaction between ecology and security, it is necessary to identify and assess the environmental problems capable of generating or aggravating tension between countries or communities and assist in their elimination. This paper examines the interdependence of social and ecological processes, the resultant social consequences and the effects on security in the East Caspian Sea region of Turkmenistan.

Keywords • East Caspian • Environment • Ecological Processes • Fishery
• Security Threats

Introduction

It is generally believed that environmental problems themselves cannot threaten security, but can represent a security threat in combination to other factors. For the Caspian region, this position is especially true, as the status of the sea and border sectors are not determined, and agreements on the distribution and use of resources are considered to be unfair by all parties. Former treaties between the USSR and Iran on these issues do not inspire optimism: they represent the right of strength and have nothing to do with justice.

Considering various forms of interaction between ecology and security, it is necessary to identify and assess the environmental problems capable of generating or aggravating tension between countries or communities and assist in their elimination. At the same time, the program supposes that the joint resolution of environmental problems

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can create a bridge to wider mutual understanding and the resolution of problems outside the ecological agenda.

Social consequences of environmental problems can be conditionally classified into two categories - direct and indirect. Direct consequences can be manifested, for example, in loss of biological resources (trade species and their fodder objects) and can be represented in monetary terms. For example, it is possible to calculate the economic cost to Caspian countries arising from steady reduction of sturgeon stocks, expressed in reduction of sales. To this category, one may also attribute expenses under indemnification of the damage. For example, on construction of hatchery capacities instead of destroyed spawning sites.

Indirect consequences, commonly referred to as the loss of “ecologic services” include a decline in ecologic systems capacities for autopurification, losses of their balance, and gradual transition to some new condition. For a society, it means loss of the aesthetic value of landscapes, and the creation of less comfortable conditions of existence of the population, among other impacts. The further chain of consequences results, as a rule, again in direct economic losses; in the tourism sector and so forth. For example, in recent years, pollution of the sea environment resulted in numerous beach closures and zones of rest in a number of seaside settlements.

Most of the damage caused to nature by human activity still remains beyond economic calculations. Due to an absence of methods to assess the economic value of biodiversity and ecological services, planning bodies of the Caspian countries prefer to develop extractive industries to the detriment of sustainable use of bioresources, tourism and recreational development. Nor is the influence of ecological matters on security considered in the existing system of economic evaluation.

Speaking about the connection of ecology and security, it is necessary to note the following:

1. *Interdependence between social and ecological processes*: Migrations, lack of protein food, endemic diseases, transboundary pollution, unfair distribution of benefits from the use of bioresources, unsustainable development - these phenomena can be equally a part both of ecological and social agenda. Problems of ecological security in the Caspian region are to some extent connected with global *Power security*. For example, the energy security strategy of the EU plans on covering a quarter of the EU's energy needs at the ecological expense of the Caspian region. It is important to keep in mind that the main parts of the underdeveloped hydrocarbon resources are located at the eastern coast of Caspian Sea, and the

Kazakhstan press has shown that the situation in “oil” cities and settlements is far from “quiet”¹.

2. *Perceptions*: The recognition of environmental problems by a society can be connected not to the real importance of a problem, but with its symbolic importance or perception of importance as a result of attention given by the mass-media, emotional influences, etc. For example, the mass loss of seals in 2000 led to growth of public attention to the condition of the sea, in particular - to chemical and oil pollution which were not connected with the loss of the seals. In a certain sense, it is possible to speak about the existence of “imaginary” problems taking place only in public consciousness (including as a result of deliberate PR-activity).
3. *Hierarchy/interference of ecological factors*: It is possible to speak about “root” and “symptomatic” factors, “problem tree”, etc.; generally search of root problems represents non-trivial task. It is natural that public attention is more often concentrated on “symptomatic” factors.

To research these issues, it is necessary to understand both real, and imaginary problems, both root, and symptomatic ones. It is necessary to consider also the specificity of investigated objects - natural features of the Caspian basin and peculiarities of social and economic situations at the seacoast:

1. The level of Caspian Sea changes. Continued rising of the sea level leads to flooding of industrial facilities, change of conditions of habitats, and increasing uncertainty of the condition of biological resources.
2. The majority of key environmental problems (pollution, influence of dams, over-exploitation of resources) are transboundary in nature.
3. Commercial species of Caspian Sea, as a rule, are also “transboundary”, i.e. fish migration. This fact causes uncertain fishing rights and never-ending disputes, about the scope of contribution each country inputs in their reproduction.

¹ Fight between Turkish and Kazakhstan workers at Tengiz oil field October 20, 2006. Mass disorders in Aktau August 20, 2006 referred in the Kazakhstan press as “fat revolt” because workers of oil-producing organizations took part in them). Mass fights between Turkish and Kazakh workers in Atyrau the February 22 and April 15, 2005, etc. All similar incidents since the Novouzen events of 1989 had two distinctive features: (a) they had ethnic character; (b) the active role in them was played by workers of the oil-producing organizations.

4. In the social sphere, the region is characterized by sharp differences in the development of industrial towns and settlements on the one hand, and small fishery communes on the other.

Problems of the East - Caspian Region (Turkmenistan)

Population

In the Caspian zone of Turkmenistan, there is a concentration of oil and gas production (Hazar, Balkanabad, etc.), oil refining industry (Turkmenbashi), and chemical industry (Hazar, Karabogaz), that are responsible for much of the employment of the population in the area. The majority of the population of the Turkmen coast of Caspian Sea lives in urban settlements connected to industry and transport. Considerably smaller numbers of inhabitants live in rural settlements, engaged in traditional kinds of economic activity - such as fishing and cattle breeding.

Due to the geographic-climatic conditions of the Caspian zone of Turkmenistan (arid climate, scarcity of fresh water sources) agriculture, except for cattle breeding, is not developed. Accordingly, the basic foodstuffs are delivered to the region from the outside. Earlier, fishing enterprises constituted an essential source of financial receipts. Due to the deterioration of the ecological situation on the Caspian Sea and irrational, unsustainable fishing in the past, fish resources have been rapidly reduced, so the industrial fisheries do not play an important role in the economy. Nevertheless, fishing remains one of the major sources of employment for rural population of the Caspian zone, providing people with food and livelihood.

The cities of Hazar, Garabogaz and some other settlements of the Caspian zone of Turkmenistan have been established rather recently - in the 1950-60s mainly with the purpose of oil and chemical raw material production. Accordingly, the population there consists of workers of the enterprises, employees (managerial employees, employees of services sector, of municipal services, etc.), and members of their families. Production was exported out of the republic, while supply of the population with consumer goods was provided by other republics.

The town of Garabogaz (Bekdash) can serve as the most impressive example of such situation. It was established in the middle of the 20th century on the coast of the gulf of Kara Bogaz Gol. The geographic and climatic conditions are extremely hard: there are practically no natural sources of fresh water. The city-forming enterprise is "Karabagazsulfat". Prior to the disintegration of the USSR, this enterprise exploited the unique mineral salt resources of the gulf, and was the main manufacturer

of sodium sulfate, bischofite, epsomite, and other resources in the USSR and the country's socialistic coalition. There was a rather advanced urban infrastructure, including waterworks, a sewerage system, public transport, centralized gas and a heat supply. There was also an airport. At the same time, practically all consumer goods were delivered from other republics; the staff (engineers and qualified workers) were alien; even potable water was delivered from the neighbouring republics-first by ferry, and then by a pipeline. Surrounding rural settlements had no communication with Bekdash; neither in the social plan, nor in terms of goods and services exchange.

Upon the disintegration of the USSR and liquidation of its planned economy, the population of Caspian towns met serious difficulties. The centralized supply of cities with food and other production was reduced, while the market was not able to adjust to the new problems. Mass migration of population caused another round of manufacturing decline; traditional consumers of industrial output of the Western Turkmenistan began to use other suppliers². Absence of earnings compelled inhabitants to search for alternative sources of income in retail trade, fishing and fish processing, leasing of apartments and summer residences, etc. It is remarkable, that by this period, the population raised novel interest in the environmental problems of the region; although many migrants from Cheleken and Bekdash had mentioned pollution among the reasons for their departure.

Depressive tendencies in the development of urban settlements and reduction of the population proceeded until the end of the 1990s³, involving also the largest city of region - Turkmenbashi. Simultaneously, there was significant new growth in the informal sector of economy connected to retail trade, recreational activities and utilization of natural resources.

Since 2000, the large industrial enterprises have resumed work. As a result, the urban population has stabilized. For the last decade, rural settlements did not show any demographic changes. Rates of a natural population increase did not differ much from the country average (3.6 percent). Historically, fishing, hunting and cattle breeding were considered to be basic sources of income of the population. Agriculture on the coast is impossible for the lack of irrigation water. Practically every

² All over the CIS countries, quite competitive (and less expensive) Oglanly bentonite was substituted for more expensive low quality bentonite from Bulgaria, Greece and even India. Instead of cheap sodium sulphate from Garabogaz, they import it from the Dead Sea, etc.

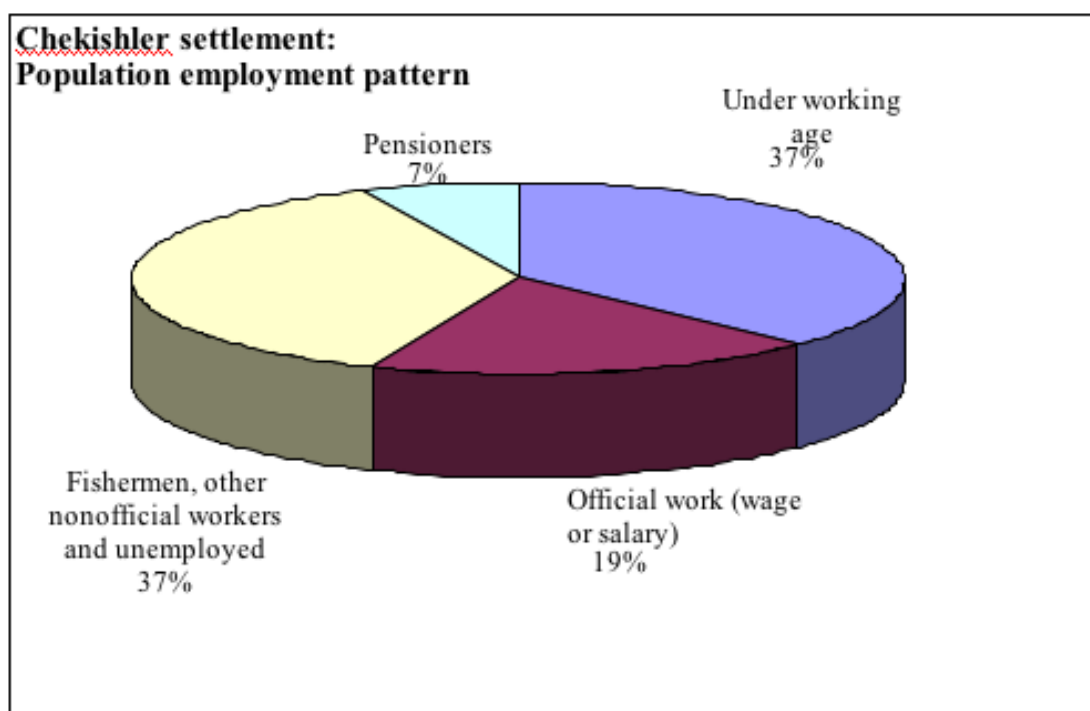
³ So, during 1979-1999 population of Cheleken town reduced from 14,1 th. to 10,7 th. persons, in the settlement of Bekdash - from 8,3 th to 4,6 th. persons, Ekerem - from 6,2 th. to 2,3 th. persons.

family has cattle, although the poverty of coastal pastures and scarcity of water sources limit income from this kind of activity.

In the late 1990s, the last collective fish farm closed. Nevertheless, natural resources provide one of the basic sources of income, including income from fishing, game and outrun cattle breeding. It must be noted, though, that a majority of the food is consumed by the families that produce it, and a minority is sold on the market. The exception is sturgeon and black caviar, a kind of cash-crop of the Caspian coast.

Alternative income sources include: retail trade, transport services, and frontier trade with Iran and Kazakhstan. A minority of men find work in the enterprises for exploration and development of hydrocarbons (basically, low skilled and underpaid). Nevertheless, the latter leads to the increase in “consumption standards” which also strikes the families living basically at the expense of natural biological resources. Figure 1 reflects the employment pattern of a typical coastal settlement.

Figure 1. Chekishler Settlement: Population Employment Pattern.



Thus, the demographic situation on the Caspian Sea coast developed in two directions:

1. In industrial centers - the outflow of the population connected to reduction of industrial activity in the 1990s, and population stabilization in the period after 2000. Since 2000, there has been an increase in employment in extractive and processing industries and growth in the informal sector.

2. In rural settlements - a stable situation exists on a background of natural population increase. Though fishing has ceased to provide employment, the livelihoods of half to two-thirds of the population depend on natural biological resources (fish, game, pastures). A decrease in incomes from traditional kinds of economic activity, and an increase of "consumption standards" has led to a gradual destruction of Caspian fisheries.

The rapid urbanization in the 1950s and 1960s was caused by the development of mineral resources in the region. This development pattern could not lead to steady growth and made the region dependent on world fuel markets.

Biological Resources of the Sea

The only fishery enterprise of the "Balkanbalyk" region (approximately 350 workers) is in Turkmenbashy; which in recent years has not received new boats. Available boats are involved in sprat fishing. They are mostly rented by individual businessmen who deliver the catch to a processing factory in Turkmenbashy. Within the last decade, annual catches changed around 5-10 thousand tons (th.tn.).

Historically, the southern part of the Turkmen coast was ranked the second fishery region of the Caspian Sea as measured by catchment value. In the 1930s, only the Esenguly area caught more than 7 th.tn. of fish (maximum catch was marked in 1934: 10,7 th. tn of vobla, 2,1 th. tn. of carp). In the following years, the catch level consistently reduced, reaching only 0,2 th. tn. in the early 1980s. During the 1980s and 1990s, commercial fishing gradually came to an end. The local population connects the collapse of the fishery with excessive water diversion for irrigation in Iran (see text box).

The lower course of the Etrek River is a place of reproduction of the basic food fish of this area - vobla and carp. Fishing of these species downstream in flooded areas during high water were the place of commercial fish reproduction and had value not only for the specified area, but also for all of Turkmenistan's coast. The efficiency of spawning grounds is determined by Etrek's water discharge. The correlation factor between an annual drain and catches in 1930 is +0,88. With the development of irrigation on the Iranian side of the border, the river water flow began to decrease progressively. So, before 1957, the river mouth dried up only in exclusive low water years; from 1957 onwards, the river dried up almost annually. In the 1960s and 1970s, the river delivered its waters to the sea only 5-7 months of the year. In the 1980s and 1990s,

the river reached the sea even less often including, for example, in 1984, 1986, 1990, 1995-1997, 1999-2000. Coastal fishery has practically ceased.

In the late 1940s and early 1950s, they fished sea species such as anadromous herring (annual catch reached 4-5 th.tn) and sea pike-perch. However, stocks of these fish were quickly exhausted, and by 1960, drift fishery began to drop. Fisheries along the coast line disappeared one by one, and often along with it, fishermen settlements. Later, there had been an accepted interdiction of fishing with drift nets that enabled experts in fish-breeding to speculate on a theme of "restoration" and "sustainable condition" of anadromous populations.

Since 1951, there has been fishing of anchovy sprat with electric lights. While this fishing on the Caspian Sea flowered, more than 300-350 th.tn of sprat⁴ was caught. Turkmenistan's share of this catch was 45-50 th. tn. A sharp decrease took place in 1992-94. The annual catch at the end of 1990 was 6-9 th. tn.; since November, 2000 there was a drop of catches by 3-4 times. At the end of 2000-2001, the catch of sprat was partially restored and it is now limited only to opportunities of processing and internal consumption. However, judging from reduction of catches in neighbouring states, a significant increase in the catch is impossible because of the condition of the fishery in the Caspian Sea.

The main tendency in the history of fishing in the Turkmen sector (as well as all over the sea) is of a shrinking catch and the consecutive replacement of valuable species of fish by less valuable ones. At the same time, there exist opportunities for the restoration of fishing of both semi-anadromous and anadromous fish species.

An assessment of the legal sturgeon catch in the Turkmen sector of the Caspian Sea, except for a small scientific quota, has not been conducted since 1946 though the area of the Turkmen Gulf is considered to be one of the most important places for sturgeon fattening. It is difficult to estimate the level of poaching and the quantity of young fish harvested. However, it is obvious that the damage to the sturgeon population is connected to activity outside Turkmenistan in the spawning rivers (Volga, Ural, and Kura), i.e. rivers with dams and overfishing. Taking into account the high importance of the Caspian Sea sturgeon as a commercial resource and element of biodiversity, the government of Turkmenistan accepted a decision to construct a sturgeon factory that could produce 5 million baby fishes per year.

It is remarkable, that all parties consider the existing distribution of sturgeon quotas unfair. The Russian Federation contributes more than the others in artificial cultivation; Kazakhstan possesses a unique free-

⁴ Until the disintegration of the Soviet Union, flotillas worked in common: in the spring, in the summer and in the autumn, fishing was conducted basically on the western coast, and in the winter – on the eastern coast, in the middle and the southern part of the sea.

flow spawning river; Turkmenistan provides the richest and least polluted places for sturgeon fattening, etc. Each country demands an increase in its sturgeon catch quota with a compromise usually achieved by increasing the total catch under which “the scientific base” is brought. In 2006, the disagreement resulted in the refusal of Turkmenistan to sign a new distribution of quotas to the commissions on water bioresources that has led to a full interdiction on export of the Caspian caviar.

Unfortunately, information on the condition of fish resources is completely unreliable. All establishments engaged in research of these resources on the Caspian Sea (CaspNIRH, KazNIRH, AzNIRH), are organization departments of the fishery branch, and the data provided by them reflects departmental interests, instead of the actual state of affairs. Accordingly, the condition of populations from year to year is consistently over-estimated, and the designed catch quotas are not implemented. Uniquely reliable and authentic sources of information until recently were catch figures; these data unequivocally reveal a reduction of the population of all commercially important species of ichthyofauna.

Now catch figures have also ceased to give objective information. Most of the catch is done by individuals and therefore not included in state statistics. The information can be received indirectly by estimating the number of people, boats and equipment involved in this sector. On the Turkmen coast, there are up to 1000 private boats, and the average annual catch is 10-15 tn. Consequently, for the entire Turkmen sector of the Caspian Sea, the fish catch of the informal sector is not less than 10 thousand tons only of ordinary fish (grey mullet, vobla, herring, and carp) - which is one and a half to two times the volume of the “Balkanbalyk” (sprat) catch.

Due to the unilateral interpretation by the mass-media regarding the reasons of the degradation of fish resources of the Caspian Sea, public opinion is concentrated only on the pollution of the sea and poaching. Direct or indirect indications of “external forces” used in such cases, such as the “Dagestan caviar mafia”, “Iranian fishermen”, “Azerbaijan oilmen”, etc., do not promote trust between peoples.

Independent experts cite overfishing and dams as the main reasons for the disappearance of fish stocks. Dams have made inaccessible most natural spawning sites of semi-anadromous fish, including the sturgeon. Thus, the benefits from dams (hydropower, irrigation, transport) are enjoyed only within countries the dams are located with adverse consequences for downstream fisheries. Additionally, dams have changed natural cycles of substances important for biological efficiency, in particular, phosphorus. The monitoring of fish reserves, and the determination of allowable catch and fishing were in the hands of the same department, therefore reserves and quotas, including sprat and

sturgeon, were always determined too optimistically. Fluctuations of the sea level, illness, alien species and eutrophication are considered as less important problems. Actually, these factors are together one problem, which can be defined as “the destruction of the natural ecosystems of the Caspian Sea”. All the other problems are the reasons, consequences or individual manifestations of this problem.

Alien species: The number of alien species in the Caspian Sea exceeds twenty, some of them have been introduced intentionally “for increase in biological efficiency of the reservoir”. Events became dramatic in the Caspian Sea when the mass reproduction of comb jelly *Mnemiopsis leidyi* started. Now, the *Mnemiopsis* is considered to be the main reason for the last stage of reduction in the catch of sprat and other fishes. However, it is possible that the ecological niche for this invader was formed in connection with overfishing of species that were potential food competitors. An analysis of age structure of caught fish shows that for the catch of sprat in 1974, more than 70 percent were 4-8 years of age. In 1997, the share of this age group decreased to 2 percent, and the bulk of fish were 2-3 years of age. In other words, quotas for sprat catch were based on an incorrect estimation of the total biomass of these fish.

Mass algae bloom: This brings one more element of uncertainty into the situation of bioresources in the Caspian Sea. The first warnings of an opportunity of this phenomenon were made in 1999 in connection with an increased discharge of nutrients to Caspian Sea and the infringement of natural trophic circuits. Since 2004, there were repeatedly marked local cases of mass death of fish (phytophages - mullets and bullhead) during the summer season, which could not be connected with a source of pollution or other harmful influences. At last, in 2006 the bloom of blue-green algae in the Iranian sector was revealed. Unfortunately, the full data on this phenomenon are not available for the time being, but the nodularia (*N. spumigena* and *N. harveyana*) indicated in the list produce substances that are toxic for people and fish (hepatotoxins and neurotoxins). Mass flowering of algae leads also to the creation of hypoxia zones.

In recent years, there have been no catch of non-fish water objects. Population of crayfish in the Turkmen sector is in good condition now, but there is little fishing of crayfish. Seal hunting has not been conducted on the Caspian for about 10 years, nevertheless, the population continues to fall even after their mass death in 2000, and the seal population is now about 125 thousand (in comparison with 350 - 400 thousand in 1970s).

Withdrawal of other biological resources - by some estimates waterfowl makes approximately 85,000 at the cost of US\$300,000-400,000 per season. They are mainly bald-coot (59 percent), diving ducks (19

percent) and river ducks (15 percent). General migratory flow of these species has decreased almost by half over the last 30 years (a universal phenomenon in the Palaearctic region) and consists of 5 to 8 million birds, several hundred thousand of them settle in Turkmenistan for 4-5 months of wintering.

Thus, in the use of biological resources of the Turkmen coast of the Caspian Sea, two tendencies coexist:

1. Reduction of the populations and catch of the fish species that provide the basis for commercial fishing (sprat, sturgeon).⁵
2. Increase in “unorganized” fishing of ordinary fish species in which the condition of their populations is not clear.

From the point of view of decision makers, these natural resources are a low priority, because the measured economic value of the official catch is small in comparison to the value of the production of hydrocarbons. There is no real estimation of the catch in the informal sector; and cost of “ecological services” cannot easily be expressed in monetary figures.

Nevertheless, fish protein is an essential part of the human diet on the coast, and though intensity in use of biological resources has not yet reached a level of conflict, it deserves the most steadfast attention. It is possible to characterize the zone in the mouth of the Etrek River as a “hot spot”.

Economic Activities and Pollution in Coastal Areas

The basic sources of pollution are the production and processing of hydrocarbons, chemical industry, agriculture, power, transport, and household waste products. Only the most important points are examined below:

Pollution from hydrocarbons production: The main sources of pollution are in drilling and the installation of wells; the spills and emergency blowouts connected to them; and oil refining. Actual production and transportation of oil influence to a lesser degree.

Offshore oil production near Cheleken: Here, there are 56 sea platforms with 116 wells. Among them, 28 wells located on 22 platforms are operating; the others are abandoned, suspended or inactive. During the active development of the deposits, there were 6 open fountains with ignitions and oil spills, 2 open fountains with a blowout of gas and water, numerous so-called “contingencies” also took place. All serious failures

⁵ As a result of a ban on sea fishery a sturgeon quota of Turkmenistan is implemented in the Volga River.

have taken place during the drilling and installation of wells (in the 1970s and 1980s up to 10 rigs drilled simultaneously) - the common reason being technological infringements and personnel errors. The last failure continued for three weeks with emissions up to 10,000 m³ of water-oil mix per day (upon visual evaluation). Upon completion of an exploration cycle, the number of failures has sharply decreased, and the ecological condition of water in the area is satisfactory.

Now the "Dragon oil" company is increasing its capacity for oil production in the Caspian Sea, simultaneously liquidating leakages from old wells. According to standard calculations, each one million tons of the produced oil is accompanied as an average by 131.4 tons of losses (for joint ventures it is approximately 2 percent). With a planned increase in offshore production near Cheleken of up to 4 million tons, it is possible to expect annual spills of over 500 tons of crude oil, and for the whole of Western Turkmenistan, it is possible to expect about 5,000 tons of offshore oil spills.

In addition to the pollution from oil itself, "associated water" poses an important and underestimated risk factor. As a rule, water separates from oil in so-called "evaporation pools", arranged in natural dips of relief (takyr, saline lands, interbarkhan dips). As soon as associated waters have a high mineralization (100 and more g/l), there is a slow infiltration in soil instead of evaporation. These waters contain oil residue surface active agents and heavy metals. Quite often, we have to watch the mass death of birds on similar "reservoirs" because of an oil film on the surface. Many takyr were in the past used by the local populations for water gathering, including in areas where water is now delivered by a multi-kilometer flume. In particular, such takyr on Cheleken supplied water for up to 10,000 person together with cattle; but is now polluted with oil and associated waters. The total volume of associated waters in Balkan welayat is 7 million m³.

Industry: As it was noted above, the Caspian region of Turkmenistan is basically industrial. The greatest concentration of the industrial enterprises is in Turkmenbashi and its suburbs, including: Turkmenbashi oil refinery, thermal power station, SAA "Balkanbalyk", the transfer tank farm, and the crash stone quarry department in the settlement of Kenar.

The Turkmenbashi oil refinery processes 6-7 million tn oil per year. The refinery works on sea water, and on average consumes 6,868,000 m³ per year. Prior to the 1970s, the system of sewage treatment was extremely primitive, and drains merged in the Soymonov bay within the area of 8 km² which have been separated from the sea by a dam. Some

parts of the polluted waters penetrated an adjoining part of the gulf where the death of fish and birds was repeatedly noticed by employees of the Hazarskiy reserve. The situation has become even more complicated with the rise in sea level. Badly contaminated sites of the coast have been flooded and the level of the polluted subsoil waters has risen.

Sewage disposal plants and a series of ecological projects executed during the current reconstruction of the enterprise have led to environmental sanitation that has immediately had an affect on the biota condition. Thickets of Characeae seaweed in recent years have practically covered all of Turkmenbashy gulf. This is an indicator of water purity. Shrimp has re-appeared even in the maximally polluted Soymonov bay. The contents of phenols and oil hydrocarbons in the area of the refinery and a tank farm in comparison with 1980s have decreased from 10-20 up to 2-3 maximum concentration limits.

In Hazar, there are a number of enterprises connected to the production and transportation of oil (including NGDU “Chelekenneft” and the “ Dragon oil” joint venture), the Factory of Technical Carbon (manufacture of soot from passing gas; emissions in atmosphere - about 3000 tn per year; there are prospects on recycling), and the Cheleken Chemical Plant (manufacture of iodine and bromine). On the Cheleken Chemical Plant, there are radioactive waste products with specific activity of 80,000 Bq/kg in quantity from 15,000 up to 18,000 tn. Now the burial ground is constructed and transportation of these waste products and deactivation of territory of the plant is planned.

Agriculture: The Turkmen part of Pre-Caspian zone is one of the most arid regions of Turkmenistan and has little agriculture. The area of available land is 13.9 million hectares. More than 90 percent of these lands represent flat and mountain pastures with various degrees of watering. Prevalence of a flat surface; places occupied with such large sandy files such as Chilmamaedkum, Uchtagan, Kum-Sebshen; shortage of water; lack of nutrition and vegetative cover; the adverse atmospheric phenomena (cold winds, dusty storms, frosty and snow winters) are the basic natural features that affect the development of agriculture.

The environment, especially the presence of fodder and water resources, have caused agriculture to be characterized by outrun cattle-breeding with the cattle maintained year round on pasture with seasonal moving from one pasture to another. Due to the impossibility of agriculture on the coast, chemical fertilizers and pesticides are not used and the impact of agriculture on the environment is minimal.

Transport: Turkmenbashy is the major transport hub (with an airport, seaport, and motorways). Additionally on the coast, there are berths in

Garabogaz (shipment of sodium sulfate and other salts), in the settlement of Aladja on Cheleken (shipment of oil), in the settlement of Ekerem (oil), and in the settlement of Kuli-Mayak (table salt).

Export of oil and oil products from Turkmenistan is carried out through Turkmenbashi port (throughput - 3 million tons per year), and also through terminals of Aladzha (throughput 2.4 million tons of oil per year) and Ekerem (1.2 million tons per year). Terminal Aladzha is capable of serving tankers with deadweight up to 5 thousand tons, and terminal Ekerem - up to 7 thousand tons. To support its growing export needs, Turkmenistan plans an extension and modernization of its port infrastructure, and the creation of a bulk-oil fleet.

Extension of port infrastructure for the transfer of oil and oil products includes reconstruction of the Turkmenbashi port, which will result in the increase of oil products transfer of up to 5 million tons per year. For this purpose, there will be the construction of a third petroleum pier and the reconstruction of two existing piers, construction of the terminal with throughput of 6 thousand tons per year for storage and transfer of liquefied gas, reconstruction of the ferry terminal, reconstruction and construction of ship-repair base, and a warehouse. Construction of a dry-cargo berth designed for sea boats of any type and class is now complete in the port.

Besides all this, reconstruction has been completed on the existing petropier within the terminal of Ekerem, where it is now possible to load oil into two tankers simultaneously. At the same time, an international contract for the selection of a general contractor and construction of a new petropier with throughput of 2 million tons of oil per year at the terminal has been signed.

Together, the eastern part of Caspian Sea can now transport approximately 10 mln.tn of oil with the possibility of growth enabling up to 20-40 mln.tn to be transported in the near future.

Tourism: Recreational resources of Turkmen coast of Caspian Sea are huge: there are hundreds of kilometers of sandy beaches, unique natural landscape monuments, pure sea water, and a long swimming season. Until recently, this economic sector in the region has been underdeveloped and oriented toward domestic consumers. Accordingly, on the coast there are about 20 recreation departments with total capacity of about 350 beds available. The great demand of the 1990s and early 2000s resulted in the rapid increase in the "informal" sector in the country settlement of Avaza. The annual services of this sector are estimated to be about 250 thousand man-days, or up to US\$1,000,000 in monetary terms. As the settlement had neither centralized water supply nor sewage system, there was an adverse ecological situation and the settlement has been liquidated.

In parallel, two hotels have been constructed, and in 2006, an international tender was announced for the design and construction of modern centers for recreation and tourism on the Caspian Sea coast to replace the liquidated summer residences.

Municipal waste products: In the territory of Balkan welayat, 14 city and etrap dumps are available with a total area of 91 hectare:

Turkmenbashy: There is one city dump located 20 km away off the city where household and industrial wastes are transported. The structure is not defined and the ground is not equipped.

Hazar: There are three garbage dumps located on the outskirts of each of three settlements: Garagel, Aladja, and the Neftebaza - with a total area of 14 hectares.

Gumdag: There is one city dump with an area of 3 hectares.

Esenguly: There is a dump in outskirts with an area of 2 hectares.

Turkmenbashy etrap: There are three garbage dumps. For the etrap center, there is a dump in "Kaylu" 9 km away. For the city of Garabogaz, there is a place 8 km off the town.

Taking into consideration the growth in the volume of packing materials, disposable utensils, etc., the handling of waste products is extremely difficult. On the coast, it is necessary to create factories for garbage processing, to organize grounds for waste products, and to arrange for the centralized disposal of garbage from small settlements. The following six points provide an overview of the situation on municipal waste products:

1. In recent years, the general level of pollution of the Turkmen sector of Caspian Sea has decreased, and the most dangerous sources of pollution has considerably reduced. Nevertheless, there remains a certain degree of risk of big failures connected to the oil-and-gas sector.
2. In the long term, agriculture will still not significantly impact the natural environment. Nevertheless, for the sustainable development of the region, it is important to maintain economic relations between rural settlements and urban centers, first of all by the stimulation of small-scale manufacture on the basis of local resources and bartering.
3. It is possible that sea transport will become one of primary risk factors for the Caspian ecosystems in the near future.
4. The municipal waste products which in recent times had not played a significant role in the pollution of the sea and the coast will gradually become a serious factor.

5. Recreational activity also tends to grow both in volume and environmental impact. The informal sector generated in this part of the economy can increase the regional budget without centralized investments and without damage to the region's natural resources, under the condition of the proper state tax and ecological control.
6. The “hot spots” are Turkmenbashy (oil refining, transport, recreational activity, city waste products) and the Cheleken area (onshore and offshore oil production, chemical industry, industrial pollution, including radioactive pollution).

Ways to Address the Revealed Problems and “Hot Spots”

1. It is necessary to overcome unilateral “raw material-oriented” development of the region. Measures should be taken to regulate market relations between city and village, and to create a market of auxiliary goods and services, capable of absorbing the growing money supply.
2. Development of such a market is impossible without the steady use of natural resources. Until now, operation of these resources was exhaustive. Restoration of fishing in former volumes will demand some coordinated actions by all the Caspian states. These measures would have to include the restoration of natural spawning places with the subordinated role of artificial reproduction, a more accurate approach to estimating populations and catch quotas, reduction of pollution, etc., and the setting of catch quotas should not be in hands of the fishery branch. The further development of a network of Specially Protected Natural Territories is also necessary to stabilize the natural environment.
3. It is necessary to give local communities the right to participate in the management of resources upon which their existence depends.
4. Aquaculture is one alternative economic activity. In view of the growth of earnings in the oil sector and the falling catch in the sea, fish-farming could become competitive.
5. Activity on strengthening local communities should develop in two directions:
 - a. Increase of market potential of the population; and embedding of local communities in the regional market circuit. Till now, participation of local communities of the coast is expressed only in deliveries of fish and an unqualified labour.
 - b. Strengthening collective potential for joint actions, in particular, for solving the problem of household waste products.

6. It is necessary to give more attention to the informal sector of the economy, in particular, tourism and recreation. The turnover in this sector now is already considerable; so, it is necessary to develop a legislative base and to adjust the system of ecological and financial control.
7. At the core of the struggle against pollution is the system of monitoring. In Turkmenistan, there is a legislative base and political support to observe the principle of “polluter pays” in relation to local organizations and transnational corporations. However, the technique of nature protection structures requires strengthening⁶. It is rather expedient to also find opportunities for public monitoring on the coast.
8. Consultations and search arrangements within the framework of the region also remain a priority task as water purity in the basin and stability of bioresources cannot be provided within the framework of one country.

Table 1 below briefly lists the major factors impacting environmental conditions of Turkmen Caspian zone, and possible reciprocal measures.

Table 1. Major factors impacting environmental conditions of Turkmen Caspian zone, and possible reciprocal measures.

The Factor	Condition	Influence	Reciprocal Measures
Geographical level			
Sea level	Rise; in a broad sense - fluctuations	Unstable wildlife management	The forecast of zones of flooding; the Policy of economic activities in a risky zone; Passive bank-protection
Desertification (including in connection with rise of the sea)	Expansion of a desertification zone	Degradation of coastal ecosystems	Monitoring; Local protective measures
Biological level			
Wetlands	Expansion	Restoration of ecosystems, increase in a forage reserve	Monitoring

⁶ There is now a program for the regional monitoring of the Caspian environment in the framework of the Caspian Environment Programme (CEP).

Fish	Reduction of fish resources	Degradation of ecosystems; Decrease in life standard	Restoration spawning places; recalculation of allowable of catch
Bird	Reduction of resources?	Degradation of ecosystems; Decrease in life standard	Monitoring
Seal	Reduction of population	Degradation of ecosystems	Monitoring
Social level			
Population	Stable	-	-
Disproportion between development of city and rural settlements	Absence of economic relations between city and village	Unstable development	Stimulation of the local market
Industrial activity in coastal areas	Reduction of pollution	Restoration of ecosystems	Monitoring
Agriculture	Stable	-	Stimulation of manufacture of local food products
Transport	Growth, is expected especially for oil products.	Increase in loading on ecosystems; risk of failures	Development of strategy of reaction; adaptation of the legislation
Tourism	The big weight of informal sector; plans on expansion of public sector	Local increase in loading on ecosystems (Turkmenbashi outskirts)	Monitoring, development of a clearing infrastructure

Impact on Ecosystems

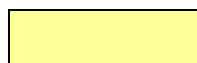
High level



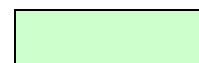
Average level



Low level



Positive changes



Radioactive Tailings in Kyrgyzstan: Challenges and Solutions

Kalia Moldogazieva^{*}

ABSTRACT

The legacy of uranium production threatens the environment and public security in Kyrgyzstan and neighboring countries. The key ecological problems include: pollution of the environment with radionuclides; increasing risk of RAW tailing dumps destruction due to climate change, natural disasters and anthropogenic catastrophes which are typical for mountainous and seismic regions, and large land avalanches in certain areas of the country.

Keywords • Uranium • Mining • Processing • Kyrgyzstan • Tailings • Dump • Radioactive • Fuel Cycle • Contamination

Introduction

As a result of many years of uranium mining and processing in Kyrgyzstan, there is more than 132 mln.m³ of accumulated waste which is stored in 37 mountain dumps. According to the data provided by the State Cadastre of the Kyrgyz Republic in 2004, tailings dumps contain 48,3 mln.m³ of radioactive wastes. These uranium wastes were produced since the mid-1940's in the former Soviet Union, mainly for military purposes. The territory of Kyrgyzstan, which in the past was the Kyrgyz Soviet Socialistic Republic, experienced a rapid expansion of uranium mining and processing activities in those years.

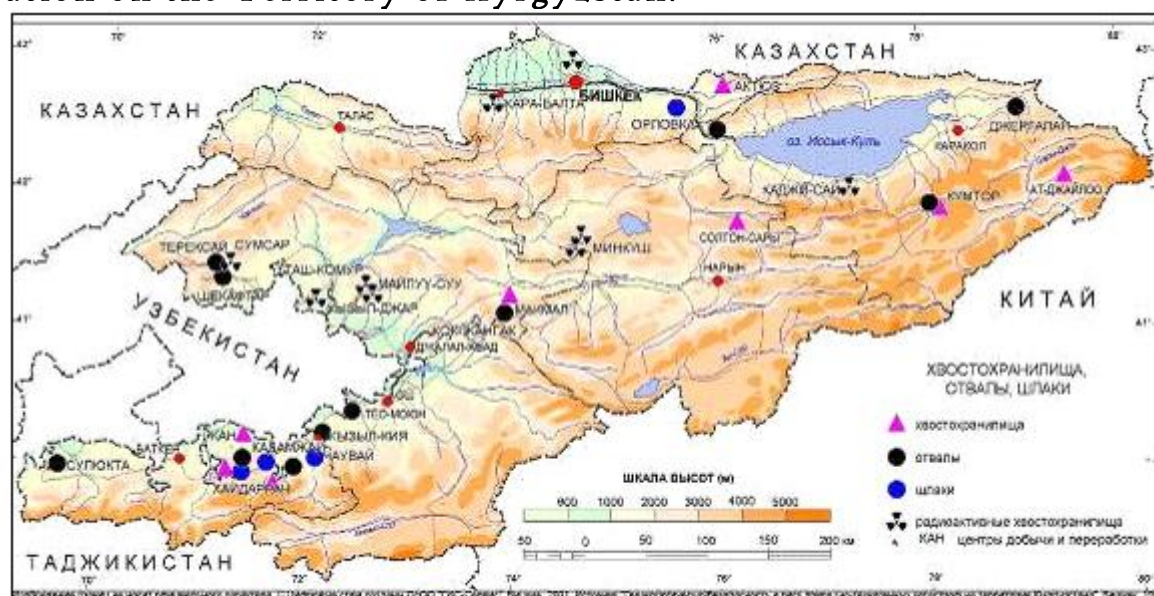
The main deposits of radioactive ore processed in Kyrgyzstan are presented on the map (Figure 1). Currently, in Mailuu-Suu (in the South of Kyrgyzstan), there are 23 radioactive tailings dumps and 13 dumps of cull ores. In the tailings, there is a large mass of ionium (Th²³⁰) with a half-life period of 80,000 years, radium (Ra-226) with half-life period of 1600 years, and residual uranium and its long-lived isotopes. Therefore,

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radioactivity of the tailings dumps will remain for many centuries. Considerable volumes of uranium processed at the two hydro-metallurgical plants were supplied from deposits from other countries, including Eastern Germany. After the closure of the mine in the village Kadji-Sai in northern Kyrgyzstan, there were two uranium ash disposal areas and one disposal area with buried radioactive equipment covered by a 1m layer of clay.

There are some other deposits and radioactive ore-processing mines in Kyrgyzstan such as the former Leninabad Mining-Chemical Plant in southern Kyrgyzstan - in Shekaftar, Kyzyl-Jar; the Kara-Balta Mining Plant (KMP) in Kara-Balta town, and the villages of Min-Kush, Kadji-Sai, as well as the Kyrgyz Mining Metallurgical and Chemical Metallurgical plants in Ak-Tiuz and Orlovka villages.

Figure 1. Map on RAW (Radioactive Wastes) Tailing Dumps Location on the Territory of Kyrgyzstan.¹



The legacy of uranium production threatens the environment and public security in Kyrgyzstan and neighboring countries. The key ecological problems are²:

- Pollution of the environment with radionuclides in the regions of radioactive waste storage and storage of other toxic elements;

¹ Isakbek Asangalievich Torgoev and Yurii Georgievich Alieshin, *Ekologiya gornopromyshlennogo kompleksa Kyrgyzstana* [Ecology of the Mining Complex of Kyrgyzstan] (Bishkek: Ilim, 2001).

² *Ibid.*

- Increasing risk of RAW tailing dumps destruction due to the climate change, natural disasters and anthropogenic catastrophes which are typical for mountainous and seismic regions.
- Large land avalanches in the areas of the Koi-Tash, Tektonik and Izolit RAW dumps on the slopes of Mailu-Suu river basin. This is arguably the most dangerous threat posed by the legacy of uranium production because large avalanches in these areas could destroy tailings dumps and contaminate the Mailu-Suu River and transboundary waters downstream with radioactive materials.

Details of Research

In 1998 and 1999, I was able to conduct research on development trends in two provinces of Kyrgyzstan: “North-South: ecological and demographical aspects of sustainable human development formation in Kyrgyzstan”. Selection of the two provinces - Jalal-Abad in the south and Issyk-Kul in the north - was justified by a number of factors: differences in their industrial and agricultural sectors, activities of different investment projects, presence of ethno-cultural peculiarities.

Photo 1. Photo of a Uranium Dump Taken by Author.



Photo 2. Researchers at a Uranium Dump.

Four settlements were selected for study - one town and one village in Jalal-Abad and Issyk-Kul - in accordance with the presence of considerable ecological and social problems typical for the whole republic as well. 23 indicators were analyzed during the 3 years period. And then correlative and regressive analysis were conducted in accordance with 17 indicators: density of the population, birth rate, death rate, natural population growth, infant children's mortality, minimal income, unemployment level, availability of medical and sanitary assistance, coverage of the population by the safe drinking water supply, radiation level, immunization percentage of the population from 6 infection diseases, level of pregnant women services, percentage of new born babies born with low weight of body, expected average span of life, sickness rate, sickness rate with cancerous diseases, infant babies sickness rate with inborn anomaly.

We were able to make the radiation measurements in all settlements. Measurement of gamma background was conducted by radiometer SRP-68-01. The normal radiation level should not exceed 30 micro-roentgen/hour.

Findings on Tailing Dumps

On the territory of Mailu-Suu town and its countryside, we researched 20 tailing dumps and 5 disposal areas of uranium as well as different rayons of the town. Higher levels of gamma radiation were revealed on the following tailing dumps: № 4, 5, 18 (from 30-500 micro-roentgen/hour) and 5 disposal areas (disposal areas III, V, XI, XII, XIII - up to 300

micro-roentgen/hour). Research on radioactivity in the town has shown that there are areas with higher gamma radiation, namely, in the northern part of the city on the Karagach locality and Nekrasov str, 4/4 - up to 250 micro-roentgen/hour. The disposal area № 5 is located in the center of this area, where the level of gamma radiation reaches 250 micro-roentgen/hour. In the central part of the city on the Pravoberejnaya str near the bridge and garages, the gamma background is more than 3000 micro-roentgen/hour. In the southern part of the town near the Bus Station on the public transport stop, we measured up to 1700 micro-roentgen/hour.

Research conducted in the Suzak village has shown that radiation levels comply with natural radiation background 9-15 micro-roentgen/hour. Similarly, the gamma background of Tilekmat village in Issyk-Kul province was equal to 19-23 micro-roentgen/hour, which also complies with natural radiation background.

On the territory of Kadji-Sai town and its countryside we researched the following: one tailings dump; the part of the territory of the former mine "Tsentrāl'naya" where ore with a high level of uranium was mined; and on the territory of Kadji-Sai Electrical Plant (KEP). On the KEP territory, there are distinct locations where the level of gamma background is 60-170 micro-roentgen/hour, and we measured 60-170 micro-roentgen/hour at the "Tsentrāl'naya" mine. The gamma background on selected points of the tailing dump area is not supposed to exceed 31 micro-roentgen/hour.

Gamma background measurements in residential areas of Kadji-Sai town (19-27 micro-roentgen/hour) were within the norms of natural background radiation. In the upper part of the town at the purification facilities, the measurement was 32-36 micro-roentgen/hour. Therefore, the radiation situation in the Mailu-Suu town and its countryside were basically satisfactory, excluding the localities mentioned above (Karagach, Nekrasova, Pravoberezhnaya). The gamma radiation levels in those cases were elevated because the population used uranium-containing ore as the construction material for individual and public buildings. Higher levels of gamma background at tailings dumps and disposal areas are explained by the presence in the disposal areas of ore containing sufficiently high concentration of uranium, and insufficient or absent covering layers of tailings dumps in a number of localities.

The most dangerous threat is posed by tailings dumps № 3 and 18, located near the Mailu-Suu river basin on account of the frequency of natural disasters (avalanches, earthquakes, floods) in recent years in the area. The non-observance of sanitary-protective layers of tailing dumps and disposal areas (absence of fences) deserves special concern: during our expedition we observed how the local population used these areas for the livestock grazing and other activities.

Study of radiation situation in production facilities of KEP and the “Tsentrāl’naya” mine (currently non-operated) in Kadji-Sai town indicate elevated levels of radiation. The population of Kadji-Sai is also exposed to radiation by extracting copper and other metals from the equipment, wires, metals located at the mine in order to sell the materials to middle men for a comparatively low price. The danger of this activity is not taken into consideration by locals; jobless people somehow have to survive. My assistant responsible for measurements was able to take a picture of people of people stealing the copper in the mine. These people turned their faces and requested not to take any pictures.

As was stated previously, full correlative and regressive analysis was conducted on 17 indicators.

Positive correlation of indicators was revealed as for the population density (17 indicators) and birth rate (21 indicators) with average expected span of life (9 indicators). Correlation coefficients equaled about +0,801 and 0,729 accordingly. This value could be explained as follows: the standard of living is better in urban areas with higher population densities and better access to qualified medical services, access to which increases the average life span. There is a negative correlation (-0,793) between infant mortality and income level of incomes: higher incomes were correlated with lower rates of infant mortality.

A clear, positive correlation (+0,938) was observed between indicators of maximum permissible discharge and general sickness rate among the population, whereas, higher air pollutions leads to higher rates of illness.

There is a negative correlation (-0,729) between average expected life span with sickness rate of cancerous diseases. There is also strong positive correlation (+0,938) between radiation level and infant mortality due to inborn anomalies meaning that the higher the radiation level, the more infant mortality due to inborn anomalies was observed. Correlation of other comparable indicators was weak or the number of values was insufficient.

Therefore, the most important external factors for the indicators of infants’ rate mortality, general sickness rate and infants’ mortality from inborn anomalies are maximum permissible discharge, minimal income level and the radiation level. Cancerous diseases sickness rate also contributes strongly to the decrease of expected life span.

During the mission in 1998, we found that Mailu-Suu inhabitants are more active in comparison with Kadji-Sai, and there is a potential in the form of Mailu-Suu Lamp Plant, which produced 150 mln lamps for export in 1997, mainly to eastern countries. The most prevailing ecological problem here are the tailings dumps. After our mission, in 1998 a number of international agencies with participation of the Ministry on Environmental Protection proposed projects on strengthening protective and restoration measures on tailings dumps and disposal areas. In the

mass media, there were statements about allocating considerable financial resources to solve this problem. In Kadji-Sai the social situation is worse although I have met the deputy chairman of the Village Council who informed me that financial resources have been allocated for renovation the purification facilities at the Electrical Plant that produces diode tubes.

There are also many jobless people who are in a desperate situation, abuse alcohol, and leave these places. Other people continue small scale trading activities. There is a Department on job placement for unemployed people that opened with the assistance of German Technical Assistance (GTZ). In Kadji-Sai, there is a primary need in social and economical measures to restore the town rather than address ecological issues, although control, monitoring and improvement of fences are essential. These two towns could serve as the monuments of irrational extensive use of natural resources, where the highest priority was the economy, without consideration of the far-reaching ecological consequences and passive involvement of the general public in decision-making process.

Social Survey in the Jalal-Abad and Issyk-Kul Provinces

In the summer of 1997, a social survey was conducted in these two provinces. The questionnaire was prepared in two languages - Russian and Kyrgyz. In Suzak village where the majority of the population is Uzbek ethnic group, the survey was conducted with assistance from a local doctor who knows the Uzbek language. The questionnaire consisted of 55 questions distributed into the following groups:

1. General level of public awareness in the field of ecological problems.
2. Questions on health conditions of people in the area.
3. Harmful habits and life style.
4. Family planning issues.
5. Social conditions of the people participated in the survey.
6. Migration.
7. Life terms and conditions.
8. Role of mass media in highlighting ecological problems in the researched region.
9. Measures taken to solve ecological problems.
10. Level of life standards of the population living in the region.

In Jalal-Abad province there were 580 people covered by the survey. Amongst them, 246 are male (42.4 percent) and 334 female (57.6 percent). This sociological survey was conducted in Mailu-Suu town and Suzak village. 56.6 percent of the urban citizens were surveyed, as were 43.4 percent of village inhabitants. The following ethnic groups in Jalal-Abad province were covered: Kyrgyz - 55.7 percent, Uzbek - 19.5 percent;

Russians - 15.2 percent; Tatars - 4.1 percent, Ukrainians - 1.9 percent; Germans - 0.7 percent; Kazakhs - 0.3 percent and others - 2.6 percent. According to the level of education the following percentages were found: with high school education 60.3 percent, vocational - 19.2, higher education - 15 percent; uncompleted higher education - 1 percent. Age groups: less than 18 - 2.8 percent; 18 - 29-29.5 percent; 30-45 years old - 18.3 percent; more than 55 years old - 7.1 percent.

In Issyk-Kul province, 252 people were covered in the survey, among them 47.6 percent were male and 52.4 percent female. The sociological survey was conducted in Kadji-Sai town and Tilekmat village. There were 59.1 percent urban inhabitants and 40.9 percent village inhabitants. The following ethnic groups in Issyk-Kul province were covered: Kyrgyz - 77.8 percent; Russians - 19.4; Tatars - 0.8 percent; Ukrainians-0.4 percent; Other - 1.6 percent. According to the level of education, the following percentages were found: high school - 59.1 percent, vocational - 12.7 percent, higher education - 22.2 percent, uncompleted higher education - 2 percent, uncompleted secondary education - 4 percent. Age groups: less than 18 years old - 2.8 percent; 18-29 years old - 25.8; 30-45 years old - 41.7 percent; 46-55 years old - 18.7 percent, more than 55 years old - 11.1 percent.

To the question: *Is there any ecological problems in your village, town?* 78.1 percent of people in Jalal-Abad province and 69.4 percent in Issyk-Kul province responded "yes", "no" - 12.8 percent and 21.8 percent accordingly; and response "I don't know" 7.8 percent and 7.9 percent respectively. Meaning that the majority of people covered in the survey recognized the existence of ecological problems in the region. From a number of concrete ecological problems people counted: air pollution - 39.8 percent in Jalal-Abad province and 50.8 percent - in Issyk-Kul; industrial wastes - 23.6 percent and 26.6 percent, domestic sewage waters - 33.4 percent and 30.6 percent; garbage - 51.4 percent and 57.5 percent; transfer of diseases from animals - 15.3 percent and 11.1 percent, venereal diseases - 38.3 percent and 10.3 percent; other ecological problems - 6.4 and 3.2 percent respectively in Jalal-Abad and Issyk-Kul provinces. Therefore, the most essential ecological problems, according to the responses are air pollution, garbage, domestic sewage waters and industrial wastes.

In the group pertaining to physical health conditions the following trends were found: 65.9 percent in Jala-Abad province and 67.5 percent in Issyk-Kul province have stated that they were sick at least once during the last 15 years. We also analyzed dynamics of general sickness rate and concrete pathology. In Jalal-Abad province one year ago, inhabitants most frequently mentioned: gastrointestinal diseases (14.3 percent), pulmonary (10.2 percent) heart diseases (8.8 percent), neuropsychic (8.3 percent), infection diseases (7.1 percent), oncological diseases and tuberculoses were mentioned by 1.6 percent of people covered in the survey, and venereal diseases - 0.9 percent. In all the above-mentioned

pathologies, there is a growth of sickness rates. In particular, people covered in the survey responded that they had suffered from gastrointestinal diseases: 15 years ago - 2.9 percent, 10 years ago 4.1 percent; 5 years ago - 6.4 percent and 1 year ago - 14.3 percent. In Issyk-Kul province one year ago 15.5 percent of people mentioned gastrointestinal diseases, heart diseases - 7.1 percent, infection diseases - 6.7 percent, neuropsychic - 6.3 percent, pulmonary - 4.4 percent, oncological diseases - 1.6 percent, tuberculosis and venereal diseases were not mentioned by the people surveyed.

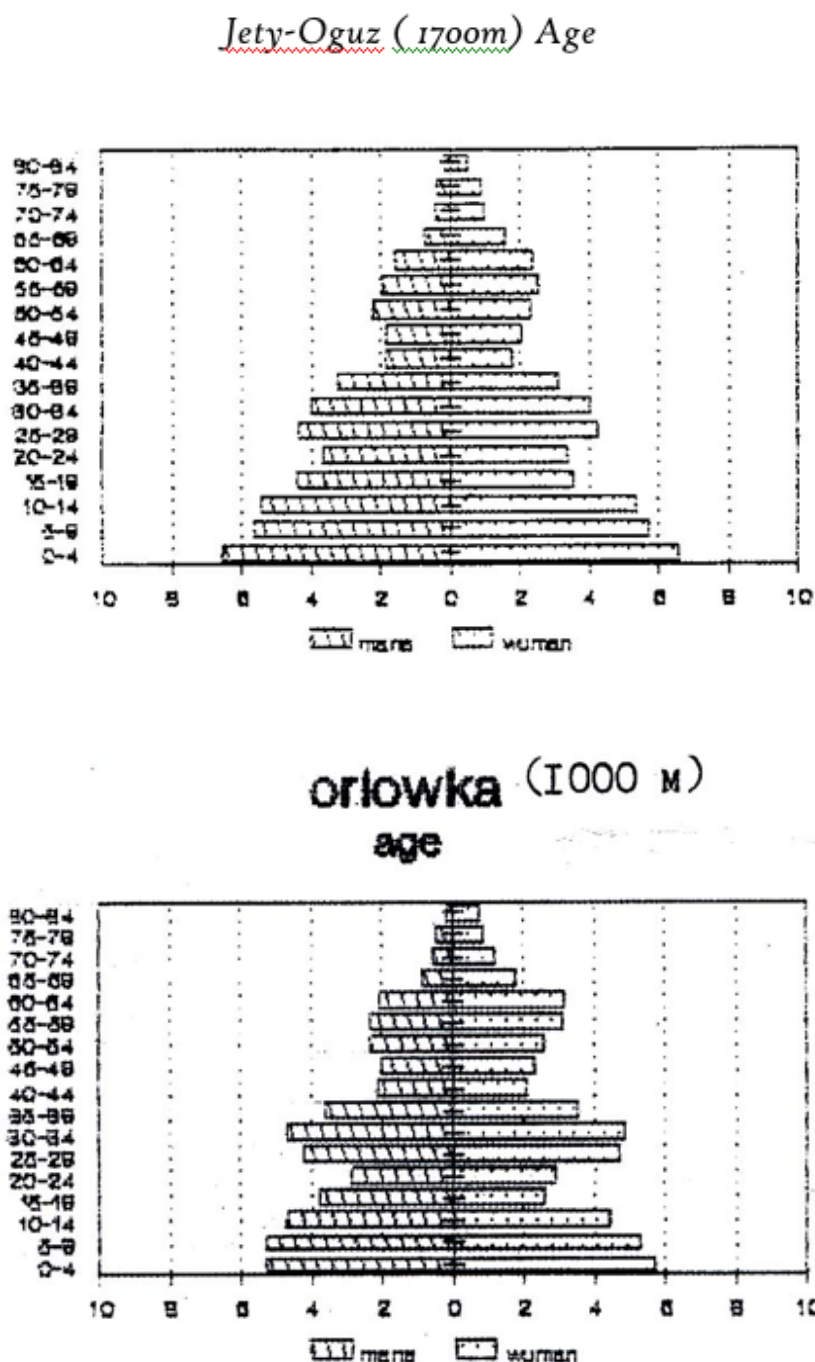
Ak-Tiuz Village Tailings Dump

The Ak-Tiuz tailings dump is located in the Chui valley and produced ore containing lead, zinc and rare-earth elements. Processed ore has radioactive elements from minerals that contain thorium (turnerite, thorite, zirconium and so on). All tailings dumps and disposal areas are a source of potential ecological pollution by radio nuclides (thorium) and heavy metals in basins of Kichi-Kemin and Chu rivers due to the susceptibility to surface water and wind erosion.

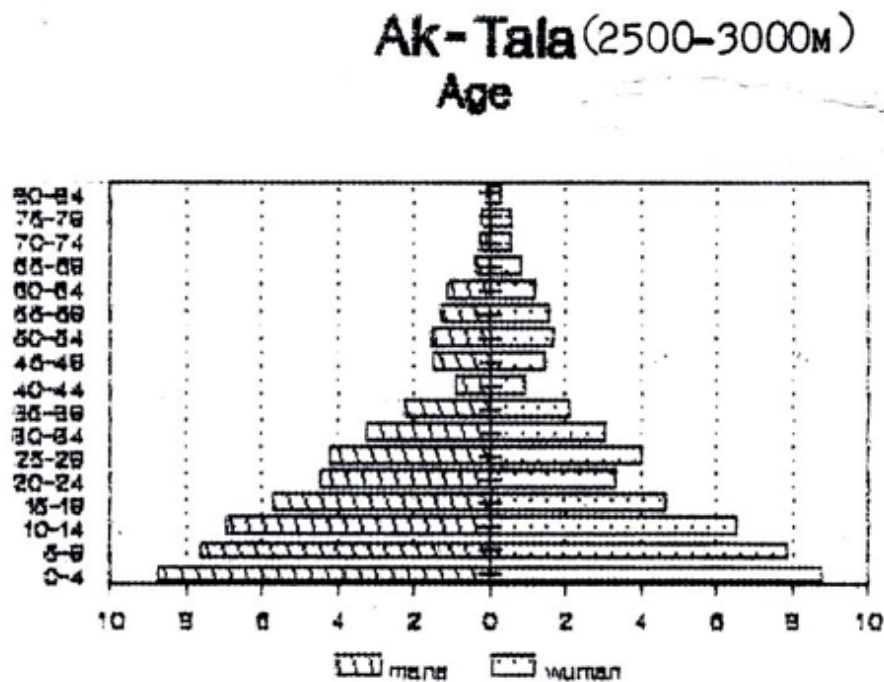
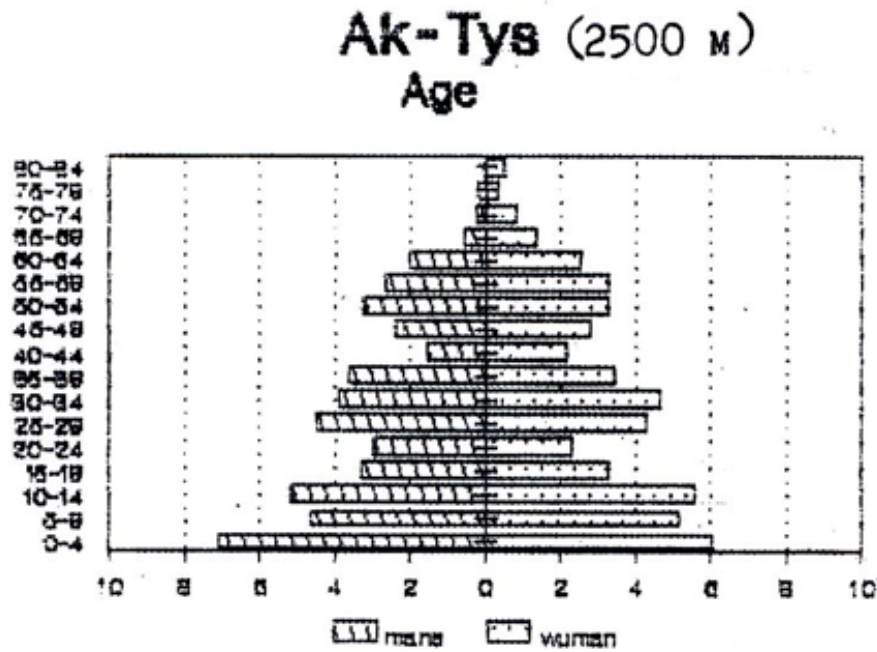
In December of 1964, a catastrophic earthquake destroyed tailings dump № 2 of the Ak-Tiuz mine. The earthquake caused the failure of an unstable hydraulic dam at the tailings dump, which then discharged 600,000 m³ of waste (or 60 percent of its total volume) into the Kichi-Kemin river. A radioactive flood distributed high concentrations of thorium and heavy metals in the river basin and Kichi-Kemin valley 40km downstream to the confluence with Chu river on the territory of Kazakhstan. The consequences of this transboundary catastrophe have faded in the intervening years, however, even at present time, this disaster continues its negative impact on the environment and human health living in the Kichi-Kemin valley.

I was able to conduct a demographic study of the Ak-Tiuz region, the location of the former Mining and Metallurgical Plant. According to the data provided by population census there were age and sex pyramids created of inhabitants living in different regions of Kyrgyzstan (see Figure 2).

Figure 2. Age Pyramids of the Population in At-Bashi, Jety-Oguz, Kemin Rayons.³



³ Kalia Moldogazieva, "Demograficheskie aspekty zdorov'ya naseleniya v ekologicheski neblagopriyatnykh regionakh Kyrgyzstana" [Demographic aspects of the population's health in ecologically unfavorable regions of Kyrgyzstan], in *Sem'ya i zhenshina v menyayushchemsya mire, Materialy Mezhdunarodnoy Konferentsi* [Family and woman in changing world, International conference proceedings] (Bishkek, 1994); Kalia Moldogazieva (co-authored with Max Spoor), *Human Ecology in Kyrgyzstan: the Soviet Legacy and the Dynamics of Transition*, Working Papers, Series # 239, Iss/The Hague, The Netherlands, 1997, p. 23; Kalia Moldogazieva, *Human Ecology with the Basics of Sustainable Development* (Bishkek, 2003), p. 328.



The Swedish demographer G. Syndberg categorized populations into 3 main types depending on the prevalence of different age groups:

1. Progressive: - characterized by a high proportion of children and a high birth rate;
2. Stationary: - characterized by an almost balanced share of young and old age groups, with a moderate birth rate;
3. Regressive: - characterized by a relatively high proportion of elderly in the population and a low birth rate.

In all created pyramids, there are so called “gaps” in the age from 40-44, which are observed in all regions of Kyrgyzstan. People of this age group were born during the Great Fatherland War. During these war years, the birth rate was low and the mortality rate high due to the decrease in the male population. This demographic “echo” of the war is typical for all participants - Germany and former USSR as a whole.

In order to reveal the impact of anthropogenic factors on the population, we compared settlements with and without developed industry. In Ak-tiuz and Orlovka - but not in Ak-Tala - there is a noticeable “gap” in the 15-19 and 20-24 year old age groups, which corresponds to people born in the period after the 1964 ecological catastrophe in Ak-Tiuz in which large quantities of radioactive waste was released into the Kichi-Kemin river. During that period of time, there was a dramatic increase in the mortality rate and the birth rate decreased in the region accordingly. Therefore, one can see an echo of the ecological catastrophe of 1964 on these demographic pyramids.

Possible Consequences of Transboundary Tailings Dumps on Regional Security

There is a real risk that tailings dumps in Kyrgyzstan could contaminate transboundary waters. Most of the tailings dumps are located near the Mailu-suu river basin which is a tributary of the Syr-Dariya river, which flows into Uzbekistan's Fergana valley, Tadjikistan and into Kazakhstan. Avalanches could lead to the discharge of waste from tailings dumps into the Mailu-Suu and pollute the Fergana Valley downstream. According to expert estimates, in case of catastrophic destruction of uranium tailing dumps № 3, 5, 7, 8, 10, 18 in Mailu-Suu, the total volumes of radioactive waste that could be discharged into Fergana valley could reach 1 mln m³. The total activity of radionuclide distributed by water flows in the valley (Kyrgyzstan) and in cone of Mailu-Suu river (Uzbekistan) will be 10 000 Curie units. This radioactive pollution could contaminate up to 300 km² of agricultural lands inhabited by 100,000-120,000 people in Kyrgyzstan and Uzbekistan.⁴

The direct and indirect consequences of contamination from tailing dumps in these regions could negatively impact peoples' lives in the densely-populated Fergana and Chui valleys. The consequences of potential radioactive pollution of transboundary waters could require decades and large amounts of money to address. At present time, Kyrgyzstan, Tadjikistan and Uzbekistan do not have the financial or technical capacity for the adequate maintenance, reconstruction of dumps

⁴ Isakbek Asangalievich Torgoev and Yurii Georgievich Alieshin, “Ecological transboundary impacts of mining industry in Central Asia,” in *Geomechanics and geotechnical reclamation of mountainous countries* (Bishkek: Ilim, 2001).

with RAW, and rehabilitation of polluted areas. Direct economical and ecological damage from contamination of transboundary waters from tailings dumps could lead to the migration of large numbers of people and potentially further destabilize the region. RAW tailings dumps could be targets of terrorist attacks because of their weak protective measures, thus causing unfavorable consequences for the population and the environment.

Review of Existing Programs and Projects in the Region on Mitigation of Tailings Dumps' Impacts to the Environment and Emergency Prevention

In recent years, a number of international projects have been working on the rehabilitation, assessment and monitoring of tailings dumps in Kyrgyzstan. These include:

- TACIS Project and other previously implemented projects. These projects created a good database. The TACIS project framework (2006) determined the following rehabilitation priorities:
- Temporary coast-protecting works near the TD № 2/13.
- Coast-protecting works near TD № 6.
- Transfer of the mountainous disposal area № 1 to the mountainous disposal area № 2 and implementation of coast-protecting works near the mountainous disposal area № 2.
- Simply security measures (fences, cover of local sites, drainage channels, information arrangements).
- Transfer of critical structures to the secure distance.
- Hydrosphere with high level of uranium, but without direct risk to human health.
- Power of local radiation dose, presence of radon in fact does not play any important role.

Presently, there is an ongoing World Bank "Prevention of emergency situations" project to improve the situation in region of Mailu-Suu.⁵ Works that include the transfer of tailing dumps № 3, 18 to a secure distance from the river is scheduled to be completed in 2010. Among these facilities, 12 of them do not require recultivation. 10 facilities are rated low priority. 14 facilities are rated high priority.

The UNDP country office in the Kyrgyz Republic is conducting the project: "Review of the Opportunities Assessment of Radioactive Wastes Management in the Kyrgyz Republic in a transboundary context". Within the framework of this project is a Regional Conference: "Uranium tailing dumps of Central Asia: local problems, regional

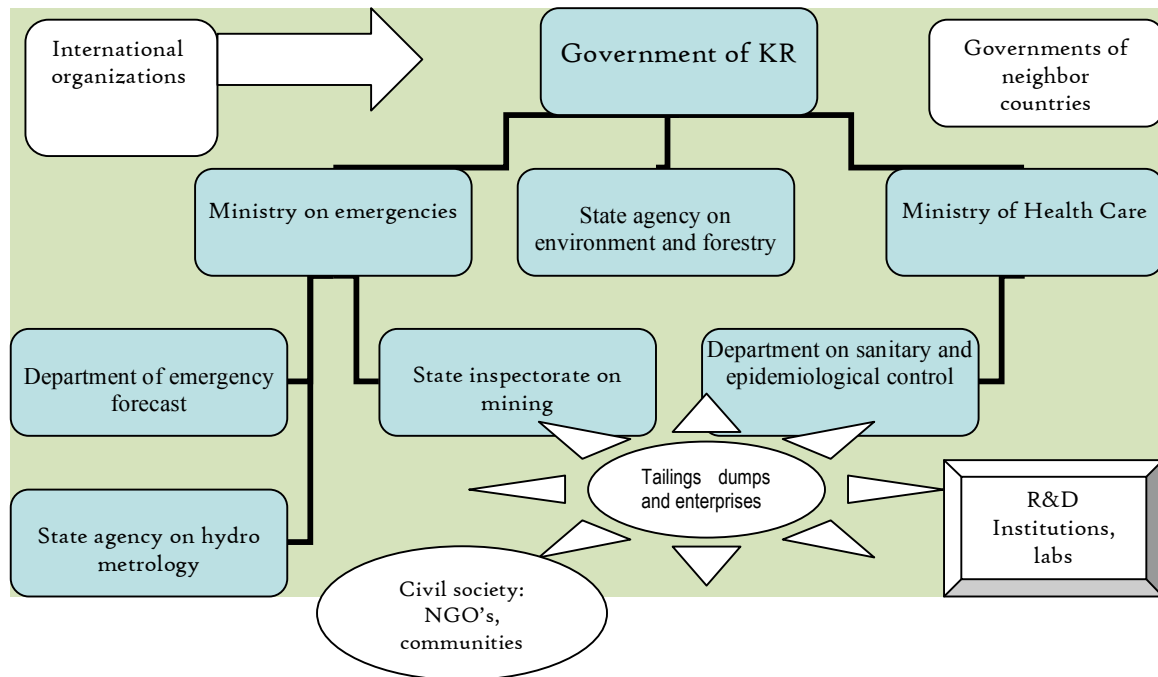
⁵ World Bank Project, "Prevention of Emergency Situations"; ADB Bank, "Support of Vulnerable People during Natural Disasters" (Materials of project implementation unit at the Ministry on Emergencies of Kyrgyzstan, Bishkek, 2005).

consequences, global solutions”.⁶ The conference launched online discussions were on the problems related to uranium tailing dumps. One outcome of this conference was the identification within Central Asia of RAW storage locations that could be called ecological “hot points” because of their negative impact to human health, and the environment and the high risk of catastrophic destruction of tailings dumps due to either natural and anthropogenic disasters. These “hot points” are found in Mailu-Suu, Min-Kush, Kadji-Sai in Kyrgyzstan, Charkesar in Uzbekistan, Taboshar and Degmai in Tadjikistan. An international donor forum related to problems of uranium tailing dumps in Central Asia was held in Geneva in 2009.

Below is a map of stakeholders who can influence on the decision making process and take measures to solve problems in the field of radiation security in the region.

⁶ Framework document on the basis of proposals made during the Bishkek Regional Conference held 21-24 April 2009: “Uranium Tailing Dumps of Central Asia: Local Problems? Regional Consequences, Global Solutions,” UNDP Project in the Kyrgyz Republic, 2009.

Figure 3. The Map of Stakeholders on the Matters of Radiation Security.



- The basic law of the Kyrgyz Republic, “On Radiation security and mountainous disposal areas” is the specific document and dealing with matters of tailing dumps management and mountainous disposal areas.
- Norms on radiation security NRB-99 as well as sanitary rules related to radioactive wastes management (SPORO-2002), were prepared previously for the Russian Federation, and were approved in the Kyrgyz Republic. There is an absence of special regulations for engineering arrangements and restoration processes regarding former uranium facilities during their recultivation and rehabilitation of polluted areas.

Analysis of existing institutions operations shows the following⁷:

- There is no clear distribution of duties in the sphere of radioactive waste management between existing governmental structures that have competence in the sphere of radioactive wastes management. The only governmental institution which has clear authority to solve problems related to tailings dumps is the Ministry on Emergencies, but they do not have sufficient financial and technical means or the staff to deal with dumps and rehabilitation of potentially dangerous facilities of RAW storage areas. No

⁷ *Ibid.*

governmental institution possesses a full picture on facilities for radioactive and toxic wastes storage. Information is spread between different agencies and institutions and very often becomes controversial in technical and ecological details.

- Holistic assessment of radiological and/or ecological risk is not conducted. None of the monitoring programs provide a holistic assessment of radiation, ecological, geotechnical security on non-operated tailing dumps. Consequently, monitoring does not facilitate managerial and engineering solutions to the problems.
- Despite the fact that in recent years, radiological labs equipped with modern equipment and devices for measurements and radiation control are operating in the region, there is no unified approach and there is also a lack of coordination in their activities. Chronically insufficient financial resources for the planning and implementation of measurements, analysis and radiation monitoring on tailings dumps in Kyrgyzstan undermine the quality of the work.
- Excluding cases of avalanches in the vicinity of tailings dumps and disposal areas of RAW in Mailu-Suu, there is no reliable data that could allow assessing “realistic” risks and possible ecological consequences for the population directly connected with legacy of former uranium production.

As a consequence of the Regional Conference on uranium tailing dumps, there is an ongoing discussion within the Government of the Kyrgyz Republic on the necessity of the specialized Agency creation that could deal with radiation security issues.

One of the possible solutions for uranium tailings dumps is the secondary processing of uranium wastes. In my opinion, this type of processing is justified along with the simultaneous rehabilitation of tailing dumps, observance of Environmental Impact Assessment (EIA) procedures and public consultations, as well as observance of international Conventions ESPOO and Strategic ecological assessment in case of transboundary impact. The study of international practices of attracting the private sector into the secondary processing of wastes in tailing dumps, including non-uranium tailing dumps is also proposed. Special interests could represent licensing issues, normative acts on export and import, guarantees and privileges provided by the Government. The creation of an international fund on rehabilitation of tailing dumps in Central Asia with participation of international donors, governments of CA countries and governments- buyers of uranium is also proposed. Barriers for intergovernmental cooperation on the matters related to radiation security result from the lack of: a unified regional system, systematic monitoring of transboundary pollution of the

environment, sharing of information in this sphere, and coordinating practical actions to solve the problems of the legacy of uranium production. Rarely do leaders of the states and provinces as well as civil society consider radioactive pollution as a serious problem and threat to ecological security. Although the legislative basis to regulate matters related to radioactive wastes is elaborated to some extent in all countries, at the same time, existing legislation is not harmonized with international norms and requirements.

Dangerous natural processes in the region, such as desertification and flooding in valleys threaten radiation security. Glacial degradation also adversely impact radiation security in the region. There are many obstacles that prevent countries in the region from making decisions to address these threats. These obstacles include: insufficient water resources in the region, due to climate change and melting of glaciers; the energy crises in Kyrgyzstan and Tajikistan; and complications arising from the different upstream and downstream position of countries.

In my opinion, existing tangles of regional problems could be solved in a complex manner as one package. The presence of uranium tailings dumps near the basins of transboundary rivers logically dictates a regional approach to solve the problems. Central Asian governments have to accept the fact that existing radioactive dumps that in the past were transferred to Kyrgyzstan makes it difficult for the latter to solve these problems independently. Intergovernmental programs will have to be supported by mutual financial, technical and intellectual resources. Logically and historically, it could be reasonable to involve those countries which in the past transferred their radioactive waste to the territory of Kyrgyzstan.

Uranium Production and Nuclear Energy in Central Asia: Assessment of Security Challenges and Risks

Togzhan Kassenova *

ABSTRACT

Central Asia might be joining the global nuclear “renaissance” both as a major producer and supplier of uranium and as a region that will use nuclear energy. Apart from some positive implications expanding uranium mining and introduction of nuclear energy to the region, there are also security challenges and risks associated with these developments. They include nuclear proliferation, nuclear terrorism, environmental and public health risks, mass anti-nuclear protests, potential weakening of control over nuclear facilities and radioactive materials in case of domestic political instability.

Keywords • Central Asia • Kazakhstan • Nuclear Energy • Uranium Mining • Nuclear Proliferation • Environmental Security • Public Health Risks • Political Instability

Introduction

Central Asia might be joining the global nuclear “renaissance” both as a major producer and supplier of uranium and as a region that will use nuclear energy.¹ Kazakhstan is already one of the world’s largest uranium

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¹ This paper does not focus on economic feasibility of developing nuclear energy in the region nor does it discuss benefits of expanding uranium production. The scope of this paper is narrowly focused on existing data on uranium reserves, plans for uranium production and nuclear energy development, and potential security risks.

producers. The country is expanding its nuclear fuel cycle capacity and the Kazakh government has made firm plans to proceed with building its first nuclear power plant. Other countries in the region have not made plans yet but might also, at some point, consider introducing nuclear energy into their domestic energy mix. All five states have plans to explore uranium reserves and expand uranium production.

Apart from some positive implications of expanding uranium mining and introduction of nuclear energy to the region, there are also security challenges and risks associated with these developments. They range from threats to public health and environment to challenges associated with nuclear safety and security, proliferation risks, and geopolitical complexities; for example, competition for Central Asian uranium resources among external powers, competition within the region for foreign investment in respective uranium mining sectors.

The first part of the paper presents an overview of the current situation, provides projections in terms of uranium production and nuclear energy development in the region, while the second part offers an assessment of associated security challenges and risks.

Uranium Resources and Facilities

Central Asia is a region blessed with natural resources, including uranium. Kazakhstan leads the region - it is estimated to possess the world's second largest uranium reserves. Uzbekistan holds the world's fifth largest reserves with its approximately 111,000 tonnes. Kyrgyzstan and Tajikistan were important uranium suppliers during the Soviet time and now both look to explore new reserves. Turkmenistan also just recently allowed foreign access to exploration of its provinces believed to be rich in resources. Out of all countries in the region, Kazakhstan has the strongest uranium production infrastructure. Its uranium industry was resurrected from bankruptcy starting from 1997. Its largest state-owned company Kazatomprom rates as the fourth largest uranium producing company in the world, according to the World Nuclear Association (after Cameco, Rio Tinto, and Areva).² Ulba Metallurgy Plant is the key facility for nuclear-fuel related services. Uzbekistan succeeded in keeping operational Navoi Mining and Metallurgy Plant, a company that was established during the Soviet times. Kyrgyzstan's Kara Balta Ore Mining Combine and Tajikistan's Vostokredmet also go back to the Soviet period, and now are the key enterprises behind push for uranium exploration.

² World Nuclear Association, "World Uranium Mining," <<http://www.world-nuclear.org/info/inf23.html>> (October 15, 2009).

Kazakhstan holds roughly 1.6 million tonnes of uranium, the world's second largest explored reserves.³ In 2007 Kazakhstan's state-run uranium company - Kazatomprom - produced 6,637 tonnes of uranium,⁴ in 2008 - 8,521 tonnes,⁵ and during the first half of 2009 - 6,000 tonnes.⁶ Kazatomprom announced that it plans to produce a total of 11,900 tonnes over 2009.⁷

Kazatomprom manages all uranium and nuclear-fuel related facilities in the country. Ulba Metallurgy Plant located at the Caspian Sea shore in Aktau is the country's key uranium facility. During the Soviet period it supplied low-enriched uranium for half of all Soviet designed reactors and also produced highly-enriched uranium (HEU) for the Soviet secret submarine program Alfa.⁸

Moving from exporting natural uranium and producing fuel pellets, Kazakhstan is making strides to produce and export a finished product - nuclear fuel. Exporting value-added nuclear fuel is considerably more economical and has an even more significant political and strategic value than exporting raw material. While a part of the Soviet Union, Kazakhstan had some components of the nuclear fuel cycle on its territory. Currently, mining and milling of uranium into yellowcake (partially refined uranium ore) are carried out in Kazakhstan; the yellowcake is then transported to Russia for conversion into uranium hexafluoride gas (UF₆) and uranium enrichment. The next stage of producing fuel pellets is also carried out in Kazakhstan while the final nuclear fuel product - fuel assemblies - is produced in Russia.

In what Kazatomprom's competitors refer to as "neat moves,"⁹ the company has been gradually finding international partners to establish almost all stages of the nuclear fuel cycle within the country. In 2007, Kazatomprom reached an agreement with Canada's Cameco to establish

³ "Uranium Deposits," Kazatomprom, <http://www.Kazatomprom.kz/en/pages/uranium_deposits> (October 15, 2009).

⁴ "Press Release: 2008 Uranium Production in Kazakhstan," Kazatomprom, January 15, 2009, <http://www.Kazatomprom.kz/en/news/2/Press_release:_2008_uranium_Production_in_kazakhstan> (October 15, 2009).

⁵ *Ibid.*

⁶ "Press Release on Kazatomprom's Activities During First Half of 2009," Kazatomprom, <http://www.Kazatomprom.kz/ru/news/2/informatsionnoe_soobschenie_po_itogam_deyatelnosti_ao_nak_Kazatomprom_za_6_mesyatsev_2009_g> (October 15, 2009).

⁷ "Press Release: 2008 Uranium Production in Kazakhstan," *op. cit.*

⁸ "Kazakhstan Nuclear Facilities: Ulba Metallurgy Plant," Country Profiles, Nuclear Threat Initiative (Produced by James Martin Center for Nonproliferation Studies), <http://www.nti.org/e_research/profiles/Kazakhstan/Nuclear/facilities_ulba.html> (October 15, 2009).

⁹ Elliot Blair Smith, "Kazakh Salesman Aims to Be Rockefeller of Uranium," April 22, 2008, *Bloomberg News*, <<http://www.bloomberg.com/apps/news?pid=20601072&refer=energy&sid=a4CHUvmGEUI4>> (October 15, 2009).

the JV Ulba Conversion LLP (Kazatomprom holds 51 percent of shares, Cameco - 49 percent). The new joint venture will build a conversion plant on the site of the Ulba Metallurgy Plant that will produce up to 12,000 tonnes of uranium hexafluoride (UF₆) per year, which is about seventeen percent of the world's conversion capacity.¹⁰ The feasibility study for the facility is expected to be completed in 2009.¹¹ The final stage of the nuclear fuel cycle - producing fuel assemblies - is planned to be carried out in Kazakhstan in the future. Kazatomprom reached initial agreement with Areva to build a fuel assembly plant at the Ulba Metallurgical plant.¹²

The only stage of the nuclear fuel cycle that will continue to be carried out abroad (in Russia) is uranium enrichment. To provide for its enrichment needs, Kazatomprom formed a joint venture with Russia's Tekhnobexport in 2006. The JV established on a parity basis will build a new enrichment facility in Angarsk, Russia. By 2013, the new plant will have a capacity of five million separative work units (SWU)¹³ annually or about 757,863 kilograms of LEU.¹⁴ Sensitive uranium enrichment technology will be unavailable to Kazakhstan (technological "black-box"). Kazakhstan already has fuel pellet production capabilities but currently produces fuel pellets for Soviet-design reactors. Kazatomprom has begun the process of getting certification for producing fuel pellets for the other types of reactors.

In October 2007 Kazatomprom acquired ten percent of Westinghouse Electric shares from Toshiba.¹⁵ By acquiring a share in one of the world's largest suppliers of nuclear power reactors, Kazakhstan gained direct access to the world's nuclear energy market.

There was a rapid expansion of foreign investment in the development of uranium mines. Kazatomprom reached agreements with companies from Russia, Canada, France, China, and Japan, among others. In 2008 Kazatomprom and Areva reached a deal that will result in the companies' JV KATCO doubling uranium output to 4,000 tonnes per

¹⁰ "Press release," Kazatomprom, June 10, 2008, <http://www.kazatomprom.kz/en/news/2/Press_Release_on_Conversion_Facility_Established_Jointly_with_Cameco_Corporation> (October 15, 2009).

¹¹ "Areva and Kazatomprom Sign a Strategic Agreement in the Front End of the Nuclear Cycle," Kazatomprom, June 11, 2008, <<http://www.Kazatomprom.kz/cgi-bin/index.cgi?p44&version=en>> (October 15, 2009).

¹² "Areva, Kazatomprom to Set Up Uranium, Fuel JVs," *Reuters*, June 11, 2008 (October 15, 2009).

¹³ SWU is a measure of work expended during an enrichment process.

¹⁴ Interview with Masha Katsva, Ux Consulting analyst, April 24, 2008.

¹⁵ Nariman Gizitdinov, "Toshiba, Seeking Uranium, Sells 10 percent of Westinghouse to Kazakhs," *Bloomberg News*, August 13, 2007.

year until 2039, to be sold by Areva.¹⁶ Areva holds 51 percent of KATCO's shares, while Kazatomprom owns 49 percent. Its major uranium mine, Moinkum, is situated in southern Kazakhstan.¹⁷ The Kazakh-Canadian JV Inkai (Cameco - 60 percent shares; Kazatomprom - 40 percent) is developing mine of the same name, also in Southern Kazakhstan. Having begun in 2008, commercial production of uranium from the Inkai mine is expected to reach a capacity of more than 2,000 tonnes of uranium by 2010.¹⁸ The trilateral JV Zarechnoe was set up by Kazatomprom (49.33 percent), Russia's Tekhsnabexport (49.33 percent) and Atomredmedzoloto (0.67 percent), and Kyrgyzstan's Kara-Balta Mining Combine (0.67 percent). The JV is developing an eponymous mine that has 30,700 tonnes of uranium reserves.¹⁹ It is projected that JV Zarechnoe will reach an annual production capacity of 1,000 tonnes of uranium by 2011. Another Kazakh-Russian JV, Akbastau, is expected to reach its capacity of 3,000 tonnes of uranium per year by 2018 (Akbastau will develop the Budyonnovskoe field, which has 280,000 tonnes of uranium).²⁰

Kyrgyzstan produced 10,000 tonnes of uranium between 1946 and 1967.²¹ There are no official total estimates on total uranium reserves. Kamushan deposit is estimated to hold roughly 1,133 tonnes of uranium.²² There is no sufficient information on other areas that are under exploration. It can be suggested based on the number of deposits under exploration licenses that, at a minimum, there are about 10,000 tonnes.

Kyrgyzstan's Kara Balta Ore Mining Combine (known as a combine of the Southern Polymetal Mining and Metallurgical Plant until 1993), leads the country's efforts to explore uranium. During the Soviet times, Kyrgyzstan's Kara Balta Ore Mining Combine processed uranium ore from Kyrgyzstan and Kazakhstan for use in Soviet nuclear power

¹⁶ "Areva and Kazatomprom Sign a Strategic Agreement in the Front End of the Nuclear Cycle," <<http://www.Kazatomprom.kz/cgibin/index.cgi?p44&version=en>> (October 15, 2009).

¹⁷ "JV KATCO," Kazatomprom, <<http://www.kazatomprom.kz/en/pages/katco>> (October 15, 2009).

¹⁸ "Cameco and Kazatomprom Progress Toward Conversion Plant," *Market News Publishing*, June 3, 2008.

¹⁹ "JV Zarechnoe," Kazatomprom, <<http://www.kazatomprom.kz/en/pages/zarechnoye>> (October 15, 2009).

²⁰ "Russian-Kazakh Uranium JV to Reach Projected Capacity in 2011," *Prime-Tass English-language Business Newswire*, September 18, 2008.

²¹ "Uranium in Central Asia," World Nuclear Association, August 2009, <http://www.world-nuclear.org/info/inf118_centralasiauranium.html> (October 15, 2009).

²² "Nimrodel Signs Heads of Agreement to Acquire Advanced Kamushan Uranium Project, Kyrgyzstan," Nimrodel Resources Limited, <<http://www.infomine.com/index/pr/Pa757891.PDF>> (October 15, 2009).

plants.²³ After the Soviet break-up, the facility went idle due to a lack of raw material and remained so until reaching an agreement with Kazakhstan in 1994 to process Kazakh uranium.²⁴

Kyrgyzstan is pursuing cooperation in uranium field with foreign countries. Several international companies acquired exploration rights for prospective uranium mining fields. On September 2, 2009, an Australian company - Namibian Copper NL - signed a memorandum of interest with Kyrgyzstan to develop uranium mines in the country. According to media reports, the company is interested in two mines: the Tuya-Muyun mine (55,000-77,000 tonnes) in [southern] Osh Region and the Jeti-Oguz mine (88,000-110,000 tonnes) in [northeastern] Issyk-Kul Region.²⁵

Australia's Monaro Mining Company holds licenses for eight mines: Aramsu, Utor, Naryn, Sumsar, Sogul, Djurasay, Hodjaajan, and Gavasai. The latter five deposits are also explored for base and precious materials, in addition to uranium.²⁶

Linia Prava Uranium (LPU) owned by Australia's Nimrodel Resource Limited holds a 90 percent interest in four exploration licenses for uranium and other metals in the Batken Oblast' of Kyrgyzstan. The territory in question covers more than 3,800 square kilometers of land in the South Western part of the country. The LPU's company profile notes that the licenses cover "a highly prospective area" similar to Kyrgyzstan's formerly largest uranium mine - Mailuu-Suu - which produced approximately 10,000 tonnes of uranium. The exploration is now well under way.²⁷ LPU also acquired a license to explore 48 square km are in the Mailuu-Suu district. The license includes 23 uranium tailings dams.²⁸

In May 2009, Nimrodel Resources signed a deal with the UK-based Pangaea Energy for the option of buying out Pangaea's 80 percent stake in Kamushanovskoe uranium mine. The option also included an acquisition of the exploration lease of the 720 km stretch at Jetym, in

²³ "Kyrgyzstan: Nuclear Facilities," Country Profiles, Nuclear Threat Initiative (Produced by James Martin Center for Nonproliferation Studies), <http://www.nti.org/e_research/profiles/Kyrgyzstan/Nuclear/4794.html> (October 15, 2009).

²⁴ "Kyrgyzstan: Nuclear Facilities," *op. cit.*

²⁵ Kyrgyz AKI Press News Agency, Bishkek [in Russian], *BBC Monitoring Central Asia Unit*, Supplied by BBC Worldwide Monitoring, September 3, 2009.

²⁶ "Kyrgyz Uranium and Gold Projects," Monaro Mining NL, <http://www.monaromining.com/exploration/exploration_kyrgyzstan.php> (October 15, 2009).

²⁷ "Corporate Summary," Nimrodel Resources Limited, <http://www.nimrodel.com.au/company_corp_summary.cfm> (October 15, 2009).

²⁸ *Ibid.*

Eastern Kyrgyzstan.²⁹ If deal goes through, Nimrodel expects to start production in 2010.³⁰

Tajikistan was a uranium producer during the Soviet period. One of its uranium mines, Sabirsay, was transferred to Uzbekistan in 1994.³¹ According to Tajik legislation, data on uranium reserves are considered “state secret.”³² In 2008 Tajikistan’s president Emomali Rakhmon announced that the country holds thirteen percent of the world’s uranium reserves. This would roughly equate to 710,000 tonnes of uranium. His statement, however, was not confirmed by the country’s Department of Geology³³ or any other evidence. It is believed that uranium reserves in the northern parts of Tajikistan were depleted back in 1950s, and any new uranium mining, if ever started, should take place in the south.³⁴ If Chinese and Indian companies proceed with exploring Tajik uranium reserves, more clear data on the amounts might surface in the future.

Until recently (2008) Tajikistan’s Law on Natural Resources prohibited foreign companies from implementing any projects related to uranium resources.³⁵ The Program on Developing Geological Industry covering the period of up to 2015 also did not include any plans for exploration and development of uranium mines.³⁶

Several developments in 2008 demonstrated a change of course in relation to potential uranium exploration in Tajikistan. In spring 2008 president Rakhmon used his annual address to encourage his government to design plans on exploration of uranium resources. He also urged lawmakers to adopt necessary changes to existing legislation and provide better access to relevant information on natural resources with an aim of attracting direct foreign investment. In 2008 the prohibition on foreign involvement in uranium industry was revoked.³⁷

²⁹ “Nimrodel in Deal to Acquire Stake in Kyrgyzstan Uranium Project,” *Mining Weekly*, <<http://www.miningweekly.com/article/nimrodel-in-deal-to-acquire-stake-in-kyrgyzstan-uranium-project-2009-05-20>> (October 15, 2009).

³⁰ *Ibid.*

³¹ “Uranium in Central Asia,” *op. cit.*

³² Law On State Secret Information, Article 21 [in Russian], <<http://www.medialaw.ru/exussrlaw/l/tg/secret.htm>> (October 15, 2009).

³³ “Tajikistan vozobnovlyayet pererabotku urana [Tajikistan resumes uranium production],” *Deutsche Welle*, June 9, 2009, <<http://www.dw-world.de/dw/article/0,,4313065,00.html>> (October 15, 2009).

³⁴ *Ibid.*

³⁵ “Kitaii nameren vzyat’ pod kontrol’ uranovye mestorozhdeniya Tajikistana [China plans to control uranium deposit in Tajikistan],” *CA-News*, October 24, 2008, <<http://www.tajinfo.ru/analys/1224805550/pindex.shtml>> (October 15, 2009).

³⁶ *Ibid.*

³⁷ Alexander Sodiqov, “India’s Intensified Interest in Tajikistan Driven By Pursuit of Uranium,” September 16, 2009, *Central Asia-Caucasus Institute Analyst*, <<http://www.cacianalyst.org/?q=node/5182>> (October 15, 2009).

In terms of facilities, Tajikistan's Vostokredmet Combine No. 6 (Vostochnyi Rare Metal Industrial Association, known as Leninabad Mining and Chemical Combine until 1992) was among the industry's key mining and processing facilities. Vostokredmet Combine No. 6 processed up to 1,000,000 tonnes of uranium ore annually (from mines in Tajikistan, Kyrgyzstan, and Uzbekistan) and supplied uranium for the Soviet first nuclear bomb.³⁸ In 1992, uranium mining in Tajikistan was stopped and the Combine also stopped receiving raw material in 1991 and had to cease uranium processing operations.³⁹

Currently Vostokredmet continues to process small amounts of uranium, though its main operations are the processing of gold, silver, manganese dioxide, titanium dioxide, and vanadium pentoxide.⁴⁰

Even before Tajikistan law-makers amended the national legislation to allow foreign companies work in the uranium sector, China's Guangdong Corporation expressed interest in developing uranium deposits in Tajikistan.⁴¹ India demonstrates keen interest in Tajikistan's uranium reserves. During his trip to Tajikistan in September 2009, India's president Pratibha Patil suggested India should be given access to exploration of Tajik uranium mines. Indian mass media reported Tajik government's agreement to allow Indian companies to its uranium industry as a "significant gain."⁴²

There is no sufficient data available on Turkmenistan's potential uranium reserves. Mining and Petroleum Projects Ltd. (MAPP), a British Virgin island registered company, was the first foreign company to obtain mineral exploration rights in Turkmenistan. MAPP has exclusive rights to explore prospective areas of Tuvergyr and Koytendag (21,650 sq. km). These two districts are considered to be under-explored; previously, they were the sites of mining operations for uranium, industrial minerals, and base metals. In February 2009, AXG Mining Limited announced that it entered a staged exploration and exploitation agreement with MAPP to acquire up to 100 percent interest in Tuvergyr and Koytendag.⁴³

³⁸ "Tajikistan: Nuclear Facilities," Country Profiles, Nuclear Threat Initiative (Produced by James Martin Center for Nonproliferation Studies), <http://www.nti.org/e_research/profiles/Tajikistan/Nuclear/facilities.html> (October 15, 2009).

³⁹ "Tajikistan budet razvivat' uranovuyu promyshlennost' [Tajikistan will develop uranium industry]," *Regnum*, April 25, 2008, <<http://www.regnum.ru/news/992356.html>> (October 15, 2009).

⁴⁰ "Tajikistan: Nuclear Facilities," *op. cit.*

⁴¹ "China Company Eyes Uranium Deposits in Tajikistan," *New Europe*, July 21, 2008, <<http://www.neweurope.eu/articles/89015.php>> (October 15, 2009).

⁴² Ramakrishna Upadhya, "India to Explore Uranium in Tajikistan," September 10, 2009, *Deccan Herald*, <<http://www.deccanherald.com/content/24350/india-explore-uranium-tajikistan.html>> (October 15, 2009).

⁴³ "AXG to Acquire Highly Prospective Exploration Projects in Turkmenistan," Press Release, AXG, February 18, 2009.

While there are discrepant data on the amount of uranium reserves in Uzbekistan, the best estimate would be between 111,000 and 115,000 tonnes. This projected number might increase with further sophistication of extraction technologies that would allow recover additional difficult-to-extract reserves. It can also be assumed that depending on market conditions, the Uzbek government will seek more investment into exploration of additional reserves.

According to *Uranium 2007: Resources, Production and Demand* ("Red Book"), Uzbekistan holds approximately 111,000 tonnes of uranium ("reasonably assured resources plus inferred resources").⁴⁴ According to Uzbekistan's State Committee for Geology and Mineral Resources, proven resources amount to 185,500 tonnes of uranium.⁴⁵ According to other sources, Uzbekistan has 55,000 tonnes of uranium.⁴⁶ IAEA ranks Uzbekistan as the world's 5th in uranium reserves (four percent of the world's total reserves) and 7th in uranium production.⁴⁷

In 2007 Uzbekistan produced 2,270 tons of uranium, a 0.5 percent increase from 2006.⁴⁸ Navoi Mining and Metallurgy Plant plans to produce up to 3,000 tonnes by 2010 compared to 2,300 tonnes it produced in 2005.⁴⁹ Uzbekistan produces approximately 5.5 percent of the world's total uranium.⁵⁰ There are 40 aggregate uranium deposits in Uzbekistan located mainly in Kyzylkum desert.⁵¹

In January 2009 the Navoi Mining and Metallurgy Plant announced its plan to put into operation seven new uranium deposits. In September this year, the head of the Uzbek State Committee on Geology and Mineral Resources - Nariman Mavlyanov - confirmed that the government will hold auction for development of seven uranium deposits and the bidding will be announced in March 2010. The tender will be open to any international company.⁵²

Uzbekistan exports all of its produced uranium. Until recently, the U.S. company Nukem had exclusive rights to market all Uzbek uranium

⁴⁴ Quoted in "Uranium in Central Asia," *op. cit.*

⁴⁵ Information of the Trade Representative Office of Russian Federation in Uzbekistan for November 14-19, 2007 period [in Russian], Ministry of Economic Development of Russian Federation.

⁴⁶ Mining World Uzbekistan, <http://www.miningworld-uzbekistan.com/pages/Industry_Profile.htm> (October 15, 2009).

⁴⁷ "Uranium Industry is More Active Amid the New Players," Flash Note, Ansher Capital, August 8, 2008.

⁴⁸ *Ibid.*

⁴⁹ "Zamanchivoe izluchenie uzbekskogo urana [Attractive Light of Uzbek Uranium]," *Expert*, November 9, 2006, <http://www.expert.ru/articles/2006/11/09/uzb_uran/> (October 15, 2009).

⁵⁰ "Uranium Industry is More Active Amid the New Players," *op. cit.*

⁵¹ *Ibid.*

⁵² "Uzbekistan Intends to Auction Seven Uranium Deposits," *Ferghana.ru*, September 11, 2009, <<http://enews.ferghana.ru/news.php?id=1358&mode=snews>> (October 15, 2009).

on the global market. Japan's Mitsui is expected to become Uzbekistan's primary partner in uranium export.⁵³

Uzbekistan's Navoi Mining and Metallurgy Plant is one of the country's largest companies that apart from uranium mining also carries out mining of other resources, including gold, and also produces heavy machinery and equipment.⁵⁴

In early 2006 Russia's Techsnabexport and Navoi Mining and Metallurgy Plant signed a protocol on a joint venture to carry out geological exploration and production of uranium.⁵⁵ As of 2009, no further agreements were signed.

Also in 2006, Uzbekistan and South Korea agreed that South Korean companies will develop Uzbek uranium fields.⁵⁶ In May 2008, two countries reached a contract for a sale of 2,600 tonnes of Uzbek uranium to South Korea between 2010 and 2016. The deal is worth US\$400 million.⁵⁷

Japan is actively engaged in Uzbekistan. In 2006 the Japan Bank of International Development (JBIC) pledged its support of Uzbekistan's uranium industry. A relevant agreement on financing was signed by JBIC and Uzbekistan's Ministry of Foreign Economic Relations, Investment and Trade.⁵⁸ In October 2006 Uzbekistan's major uranium company - Navoi Mining and Metallurgy Plant - signed an agreement to sell 300 tonnes of mixed oxide of uranium to Japan in 2007. The agreement's term is five years: annual sale amounts and prices were set to fluctuate every year with a possibility of increased exports (up to 400 tonnes) of uranium products.⁵⁹ In April 2007, Japan Oil, Gas & Metals Natural Corporation (JOGMEC) and Uzbekistan's State Committee on Geology and Mineral Resources (Goskomgeology) signed a Memorandum of Understanding on prospective joint exploration of

⁵³ "Uranium Industry is More Active Amid the New Players," *op. cit.*

⁵⁴ Navoi Mining and Metallurgy Plant, <<http://www.ngmk.uz/produce.htm>> (October 15, 2009).

⁵⁵ "Zamanchivoe izluchenie uzbekskogo urana [Attractive Light of Uzbek Uranium], *op. cit.*

⁵⁶ "South Korea and Uzbek Sign Accord on Oil Development," AFP, March 29, 2006, available at Embassy of Uzbekistan to Belgium, Mission to the European Union, <<http://www.uzbekistan.be/press-releases/74.html>> (October 15, 2009).

⁵⁷ "South Korea to purchase 2,600 tons of uranium from Uzbekistan," *People's Daily*, May 12, 2008, <<http://www.wise-uranium.org/upasi.html#UZ>> (October 15, 2009).

⁵⁸ "JBIC Signs MOU with the Ministry for Foreign Economic Relations, Investment and Trade of the Republic of Uzbekistan," August 30, 2006, <<http://www.jbic.go.jp/en/about/press/2006/o830-01/index.html>> (October 15, 2009).

⁵⁹ "Zamanchivoe izluchenie uzbekskogo urana [Attractive Light of Uzbek Uranium], *op. cit.*

uranium in Uzbekistan.⁶⁰ In October 2007, JOGMEC reached an agreement with Uzbekistan's Goskomgeology to expedite exploration of uranium and other metals in 11 prospective fields.⁶¹ In June 2009 the agreement was finalized.⁶² The exploration with a price tag of US\$500,000 will begin in September 2009 and the results of the geological survey are expected to be ready by March 2010.⁶³

In October 2007 Uzbek officials announced that an agreement was reached with Japan's 4th largest trading company - Itochu Corporation. The head of Goskomgeology, Nariman Mavlyanov, explained that the contract covers development of technology for exploration of Rudnoe deposit. He also noted a possibility that Itochu could explore three other uranium deposits in Uzbekistan.⁶⁴

In July 2008 Japan's second-largest trading company Mitsui & Co. signed a protocol of intent with Goskomgeology. The major focus of the protocol is creation of a joint venture to explore Uzbek black-shale uranium reserves. Mitsui received exclusive negotiating rights for 18 months with Goskomgeology for the development of the Zapadno-Kokpatasskaya mine, located 300 km northwest of Navoi.⁶⁵ In case of successful negotiations, a JV - formed by Mitsui and Goskomgeology - will carry out exploration work at Zapadno-Kokpatasskaya mine. It is expected that it will require approximately three years. Any discovered uranium resources will be sold predominantly to overseas power generation companies.⁶⁶

In October 2008 another Japanese company - Sojitz Corporation - and Uzbekistan agreed to start negotiations on establishing a joint venture for uranium exploration. Sojitz received exclusive negotiating rights for 18 months with Uzbekistan's Goskomgeology on the development of Chetbertoye mine, about 350 km west of Tashkent. If two parties reach an agreement, the new JV will explore uranium resources at the said mine and export produced uranium to overseas electric power companies.⁶⁷

In August 2009, Goskomgeology and China Guangdong Nuclear Uranium Corporation set up a joint venture UZ-China Uran on a parity

⁶⁰ "Uzbekistan, Japan Conclude Agreement on Joint Uranium Exploration," WISE Uranium Project, June 16, 2009, <<http://www.wise-uranium.org/upasi.html#UZ>> (October 15, 2009).

⁶¹ "Uranium Industry is More Active Amid the New Players," *op. cit.*

⁶² "Uzbekistan, Japan Conclude Agreement on Joint Uranium Exploration," *op. cit.*

⁶³ *Ibid.*

⁶⁴ "Uzbekistan Invites Japan to Develop Uranium Deposits," *Reuters*, October 19, 2007.

⁶⁵ "Joint Exploration of Uranium Resources in Uzbekistan," Press Release, Mitsui, July 17, 2008, <http://www.mitsui.co.jp/en/release/2008/1188664_2849.html> (October 15, 2009).

⁶⁶ *Ibid.*

⁶⁷ "Japanese Solitz Corp. Signs Accord to Explore for Uranium in Uzbekistan," *Reuters*, October 9, 2008.

basis. The new JV will receive a three-year license to explore black shale uranium deposits in Boztau area of the Navoi region.⁶⁸

Kazakhstan is the only country that made firm plans to develop nuclear energy. The construction of a nuclear power plant at Aktau will begin in 2012-2013 and it is planned the plant will become operational by 2015-2016.⁶⁹ Existing infrastructure associated with the BN-350 reactor explains the choice of the site. The country's only reactor, BN-350 (a fast breeder reactor), was built during the Soviet time and operated in Aktau from 1972 to 1999.

The new plant will have a capacity to generate 600 megawatts. It will host two, first-of-their-kind VBER-300 reactor units.⁷⁰ These medium-size reactors will be built by a joint Russian-Kazakh enterprise, Atomnye Stantscii (Nuclear Power Plants), using a design similar to Russian naval reactors. The feasibility study for the new plant is scheduled to be completed in 2009. After an initial announcement in February 2008 of the plans to build a nuclear power plant in Aktau, Kazakhstan's president Nazarbayev once again confirmed the government's intentions in September 2008. It appears that the nuclear power plant in Aktau might be one of the first of many plants. The country's National Nuclear Center, which conducts research on peaceful uses of nuclear energy, has proposed building 20 low-capacity nuclear plants (50 to 100 megawatts each) to provide energy to small Kazakh towns. These are only tentative proposals with no firm plans made.

Kazakh-Russian JV plans to build medium-size reactors for export after an initial project of building reactors for Kazakhstan is completed. The rationale behind this idea is a lack of small-/medium-size reactors on commercial markets that would better serve numerous developing countries that are not densely populated and have less-developed electricity networks that would be better served by small-size reactors.⁷¹ Kazakhstan believes that other Central Asian countries will be interested in buying such new reactor technologies.⁷² These are proposed ideas with no firm plans made. So far, no Central Asian country outside of Kazakhstan, expressed strong interest in nuclear energy.

⁶⁸ "Uranium in Central Asia," *op. cit.*

⁶⁹ "Rosatom to Build Nuke Plant in Kazakhstan in 2012-2016," *Prime-Tass English-Language Business Newswire*, July 22, 2008.

⁷⁰ World Nuclear News, "Nuclear Power Plants for Kazakhstan Firm Up," November 22, 2007, <<http://www.world-nuclear-news.org/newNuclear/Nuclear-power-plans-for-Kazakhstan-firm-up-221107.shtml>> (October 15, 2009).

⁷¹ Dmitrii Verhoturov and Tulkin Tashimov, "Vertikal' Kazatomproma [Kazatomprom's vertical]," *Expert-Kazakhstan*, No. 32, September 3-9, 2007.

⁷² Dmitrii Verhoturov, "Novaya AES na meste staroi [A new nuclear power plant at the site of the old one]," *Expert-Kazakhstan*, July 9-15, 2007.

Assessment of Security Challenges and Risks

As illustrated in the previous section, Central Asian countries have varying plans and capacities when it comes to uranium exploration, production, export and nuclear energy development. Kazakhstan, by far, has the most ambitious plans in uranium field (production and export), fuel cycle (introduction of indigenous additional stages of fuel cycle), development of nuclear energy, building a nuclear power plant, and cooperative projects in reactor building and export. Uzbekistan is second to Kazakhstan in the region in terms of existing uranium production and has plans to expand both its production and export capacity.

Kyrgyzstan is only starting its efforts to explore uranium reserves. Intensified cooperation with international partners on exploration suggests that Kyrgyz government plans to revive uranium production. Some experts suggest that Kyrgyzstan might have to consider introducing nuclear energy in the future, however, there have been no decisions made at the political level. Tajikistan government also demonstrates interest in exploring uranium potential of its territory. Turkmenistan is also opening up to foreign companies who will explore the country's uranium reserves.

Potential security risks associated with expanding uranium production, export and introduction of nuclear energy in the region (so far, only Kazakhstan has made a firm commitment on the latter) can be divided into several categories:

Proliferation, Terrorism, and Safety Risks

Uranium production and associated waste entail only a limited proliferation risk. Natural uranium or waste accumulated as a result of uranium mining cannot be used in a nuclear weapon. It is possible, though, to use both natural uranium and radioactive waste in an unsophisticated radiological dispersal device ("dirty" bomb). Since the material is only weakly radioactive, such a device would pose little or no harm to human health but there could be psychological reactions to its detonation. This leads to the conclusion that plans to increase uranium production or explore new uranium mines do not significantly increase associated proliferation threats; however, a limited potential threat exists that would-be terrorists or entrepreneurial elements in search of financial gain might be interested in both natural uranium and radioactive waste. In this respect, radioactive waste already abundant in Central Asia from the Soviet times, represents this specific risk in addition to serious health and environmental challenges (discussed later in the paper).

The process of nuclear energy development, which for the foreseeable future, is only planned in Kazakhstan, has its own set of potential proliferation risks. There are two stages of nuclear fuel cycle that are

considered to be sensitive from a proliferation point of view. These are: uranium enrichment and spent-fuel management (plutonium reprocessing). The gap between uranium enrichment technologies for peaceful nuclear energy development and enrichment to high levels (production of highly enriched uranium (HEU)) for military purposes is not wide. Therefore, if a country already mastered uranium enrichment for nuclear energy purposes, it will not face significant technological impediments to produce HEU.

Spent-fuel represents a proliferation risk because plutonium that might be recovered from it during reprocessing can be used in a nuclear weapon. U.S. non-proliferation specialist Charles Ferguson points out that as long as nuclear energy programs “remain peaceful, do not produce weapon-usable highly enriched uranium and do not separate or reprocess plutonium from spent-fuel, there is little cause for concern that these programs could provide nuclear-explosive material for terrorists.”⁷³

Kazakhstan is the only country in Central Asia that has a significant nuclear energy-related infrastructure. As noted earlier, Kazakhstan already carries out several stages of nuclear fuel production and laid the ground for introducing all stages except for the above mentioned two - uranium enrichment and spent-fuel reprocessing. At this point in time, there are no grounds at all to assume that Kazakhstan’s government would attempt to introduce enrichment capacity or to obtain plutonium for a state-run military program.

This should provide some assurance to the world community. A decision not to introduce enrichment technologies domestically clearly indicates that the Kazakh government is not considering any nuclear weapons-related program. It is safe to conclude that Kazakhstan’s nuclear energy and nuclear fuel production plans are clearly led by economic interests and energy supply calculations. This contrasts with, for example, Iran, a country whose peaceful energy plans are doubted by the international community due to the seemingly unpractical choice of pursuing enrichment at home when it is not economically viable. In this respect, particular risks associated with enrichment technology are minimized in Kazakhstan’s case because it outsources its enrichment needs, to other countries with well-developed nuclear infrastructures.

Spent-fuel challenge is trickier. Even though we can be confident that Kazakhstan will not attempt to use spent-fuel for any weapons-related needs due to Kazakhstan’s laudable non-proliferation record and voluntary denuclearization, there is a lack of clarity concerning what will happen with spent-fuel in the future. Currently there are no firm plans concerning spent-fuel that will be generated by domestic nuclear power

⁷³ Charles Ferguson, presentation at Carnegie International Nonproliferation Conference, June 27, 2007, Washington, D.C., USA.

plants. Kazakhstan already has approximately 300 tonnes of spent-fuel accumulated by the BN-350 fast breeder reactor at Aktau. After the reactor was decommissioned, its spent-fuel was put in special casks and placed in temporary storage at the reactor site. It is planned that by 2009-2011 it will be moved to Baikal-1 site, the former nuclear testing site at Semipalatinsk. There is already a storage facility for encapsulated radiation sources at the site, and plans call for the construction of a long-term storage facility for BN-350 fuel. Baikal-1 is under the auspices of the Kazakhstan's National Nuclear Center (NNC). NNC officials indicate that by the time spent-fuel from new nuclear reactors has accumulated, the problem of long-term storage of spent-fuel and radioactive materials will be solved. Whether the spent-fuel remains in Kazakhstan or is sent back to Russia will depend on the type of reactors to be constructed (i.e. whether they are of Russian or foreign design). Failure to solve a problem of safe disposal of spent-fuel has two potential challenges: of proliferation and environmental nature. In terms of proliferation risks, the main risk is associated with state program to reprocess spent-fuel and extract plutonium and is not applicable to Kazakhstan's case since no political decision is foreseeable to ever engage in this.

Nuclear facilities, the nuclear reactors, and related sites, pose a nuclear terrorism risk: an attack or sabotage of such a facility by a terrorist or militant group. Physical security of existing nuclear facilities (for example, sites of nuclear research reactors and fuel fabrication facilities in Kazakhstan) had undergone major improvements since the collapse of the Soviet Union, mostly due to external non-proliferation assistance. Nonetheless, already existing facilities and any new nuclear-related facilities that will come on-line in the future will always represent a potential vulnerability to terrorism and safety risks. The safety of nuclear power plants is a serious issue: there is a common concern that threat assessments about reactor safety might not always be adequately comprehensive. Another problem is that attempts to increase physical protection through redundancy, by introducing more guards, for example, can add to proliferation risks, as it means there are more "insiders" at such a site. It is harder to assess and monitor personnel reliability with more individuals involved.⁷⁴

Non-proliferation policies of Central Asian states and the extent of practical measures taken to minimize proliferation risks can prove useful when assessing an accumulative proliferation risk stemming from expansion of uranium production and export in Central Asia and plans on developing nuclear energy.

⁷⁴ Scott Sagan, "The Problem of Redundancy Problem: Why More Nuclear Security Forces Might Produce Less Nuclear Security," *Risk Analysis* 24, 4 (2004): 935-946.

Central Asia, in some respects, is a model region in terms of political commitment to non-proliferation. The region was once home to the world's fourth largest nuclear arsenal (Soviet nuclear weapons left on the territory of Kazakhstan) and key nuclear weapons facilities. The steps taken by the government of Kazakhstan to get rid off nuclear weapons (by dismantling them or moving to Russia) remain a cornerstone of the country's commitment to disarmament and non-proliferation. All five countries joined the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as non-nuclear states. They have also all signed the Comprehensive Nuclear-Test-Ban Treaty (CTBT). In addition, all five states have signed not only IAEA Safeguards Agreements but also Additional Protocols committing them to even more intrusive and comprehensive IAEA verification measures. Kazakhstan is also a signatory of the Nuclear Suppliers Group (NSG), a voluntary multilateral regime, participants of which take responsibilities on contributing to nonproliferation regime through the implementation of Guidelines for nuclear exports and nuclear related exports.⁷⁵

Central Asian countries demonstrated readiness to cooperate with foreign partners on improving nuclear safety and security of their facilities. The main source of external non-proliferation assistance is the United States, as the U.S. government has been concerned with potential WMD proliferation in the former Soviet Union since the early 1990s. U.S.-funded cooperative non-proliferation programs are financed by the U.S. Departments of Defense, State, Energy and Commerce. Other countries have also provided substantial assistance. Funds allocated under the Nunn-Lugar Cooperative Threat Reduction Program helped to dismantle/remove nuclear weapons from Kazakhstan's territory. The U.S. Department of Energy programs have provided assistance with improving material protection, control, and accounting activities, decommissioning and shutting down of BN-350 reactor and managing reactor spent-fuel, among them. The United States was also instrumental in removing excess nuclear material from Central Asian facilities. One of the most notable operations took place in 1994 when almost 600 kg of abandoned HEU fuel (this amount was reportedly enough to build 20-25 nuclear bombs) was discovered at Ulba Metallurgical Plant. The government of Kazakhstan approached the United States and two countries cooperated on a secret operation that resulted in successful removal of dangerous material to a safe location in the United States.⁷⁶ Other important aspects of cooperation between the Central Asian states and the foreign countries, specifically the United States, include projects

⁷⁵ "What Is NSG?" Nuclear Suppliers Group, <<http://www.nuclearsuppliersgroup.org/Leng/default.htm>> (October 15, 2009).

⁷⁶ "Kazakhstan Nuclear Facilities: Ulba Metallurgy Plant," *op. cit.*

on strengthening export controls, collaborative scientific projects designed to engage nuclear scientists.

The “crown jewel” of regional non-proliferation efforts was the establishment of the Central Asian Nuclear-Weapon-Free Zone (CANWFZ) in 2006. The CANWFZ Treaty formally went into force in March 2009. Several features make the Central Asian nuclear-weapon-free zone an important contributor to disarmament and international security. First, as mentioned earlier, Central Asia was home to numerous Soviet nuclear weapons, and to a different extent, each of the Central Asian republics had components of the Soviet nuclear complex within its territory. While they relinquished all aspects of those programs, the nuclear-weapon-free zone obligates them to additional disarmament responsibilities and obligations, including adherence to the International Atomic Energy Agency's Additional Protocol, the Comprehensive Test Ban Treaty, and the Convention for the Physical Protection of Nuclear Material.

The establishment of a nuclear-weapon-free zone in Central Asia is important because it creates a disarmament “pocket” in a region where nuclear ambitions are running high and proliferation dangers are significant. Central Asia borders two recognized nuclear powers (Russia and China) and is in close proximity to two other countries that possess nuclear weapons (India and Pakistan). Iran, whose nuclear program is of proliferation concern, is nearby as well. The establishment of a nuclear-weapon-free zone in Central Asia is also a significant practical step toward the nuclear weapon free world.⁷⁷

The successful establishment of the CANWFZ was also an important achievement of regional cooperation. When five countries started the negotiating process, they had disagreements on several key provisions of the treaty. The fact that they managed to overcome differences for the sake of a broader non-proliferation goal is a testament to their commitment to the cause.

All the above provides solid grounds to attest that Central Asian governments are committed to preventing nuclear proliferation. The potential challenge, however, lies at the implementation level and in risks of inadvertent proliferation. One of the key weaknesses of all Central Asian states, with a relative exception of Kazakhstan, is lack of resources. Ensuring comprehensive nuclear safety and security and minimizing all potential risks highlighted earlier require financial, institutional and human resources. As an example, comprehensive export control system is key to implementation of non-proliferation policies. As was determined earlier in this paper, natural uranium and radioactive waste

⁷⁷ Togzhan Kassenova, “The Struggle for a Nuclear-Weapon-Free Zone in Central Asia,” *The Bulletin of the Atomic Scientists*, December 22, 2008, <<http://www.thebulletin.org/web-edition/features/the-struggle-a-nuclear-weapon-free-zone-central-asia>> (October 15, 2009).

represent a moderate proliferation risk, not because they can be used in a nuclear weapon but because some types of radioactive material can be used in “dirty” bombs. Therefore, making sure none of this material leaves the country for unauthorized purposes, governments have to have strong controls on material flow. Currently, the level of export controls in Central Asia varies and they do not meet the highest international standard.

Environmental and Health Risks

Uranium production and nuclear energy-related operation bear environmental and public health risks. Major environmental risk associated with uranium production is generated waste. Central Asia already has a serious problem with significant amounts of uranium tailings and other radioactive waste. There are more than 800 million tonnes of waste from mining and processing of radioactive sources stored at tailings sites and at mining waste dumps in Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Approximately 54 percent of radioactive waste (440 million tonnes) are spread on the surface of tailings sites.⁷⁸ In Kazakhstan alone there is already 223 million tonnes of radioactive waste associated with Soviet-period uranium mining.⁷⁹ Expansion of uranium will further exasperate this problem.

In 2001 nuclear industry representatives in Kazakhstan proposed to import foreign radioactive waste in order to generate funding for disposal of Kazakhstan’s own radioactive waste. The proposal was dropped due to public opposition. By creating CANWFZ, all five states took an obligation to ban any import of foreign radioactive waste. This means that any schemes involving generating revenue to deal with their own waste by importing foreign waste will not be possible. A solution will have to be found in each country or at a regional level.

Spent-fuel from nuclear power plants also represents an environmental and public health risk. Once the uranium pellets in nuclear fuel assemblies are no longer efficient for producing electricity, they are removed from the reactor and have to be stored or disposed of. Spent-fuel contains highly radioactive elements with some elements remaining radioactive for years, and some for millions of years. Scientists agree that the best way to dispose of spent-fuel is to bury it underground. There is not a single underground depository for spent-fuel disposal in

⁷⁸ “The High-Level International Forum “Uranium Tailings: Local Problems, Regional Consequences, Global Solution,” Geneva, June 29, 2009, <<http://www.un.org.kg/en/news-center/news-releases/article/65-news-center/3556-the-high-level-international-forum-uranium-tailings-local-problems-regional-consequences-global-solution-took-place-in-geneva-on-29-june-2009>> (October 15, 2009).

⁷⁹ Mukhtar Dzhakishev, “Radiological Situation on the Territory of Kazakhstan,” Almaty, 2001, <<http://www.nti.org/images/Dzhakishev%20report.pdf>> (October 15, 2009).

the world. The above ground spent-fuel depositories are considered to be safe for temporary storage only but not suitable for the tens of thousands of years during which the waste is hazardous.⁸⁰ Kazakhstan, the only Central Asian country that had made firm plans to build a nuclear power plant, does not have permanent storage facilities for spent-fuel, even above the ground.

Introduction of nuclear energy-to-energy mix is usually promoted on the basis of it being “clean.” While it is correctly noted that nuclear energy is a significantly “cleaner” source of energy compared to traditional energy sources, the environmental impact of the nuclear power plant construction should be integrated into calculations of the overall environmental impact. Greenhouse gas emissions can be reduced if less fossil fuels are used in power generation. However, environmental groups argue that greater environmental benefit will result from investing in energy efficiency and renewable generation rather than the construction of nuclear reactors.⁸¹

Domestic Politics Risks

There are three potential types of risks of domestic nature that are worth considering in this context: domestic anti-nuclear protests, domestic instability, and re-distribution of resources.

Public opinion on anything nuclear has fluctuated over time. If we use the example of Kazakhstan, its population demonstrated strong aversion to nuclear energy during the first attempt to proceed with plans to build a nuclear power plant. The first push for nuclear energy came in a plan drafted in 1998 by nuclear industry representatives and announced in 2002.⁸² Plans to build a new nuclear power plant at Lake Balkhash were met with vehement opposition from the public, environmental, and anti-nuclear groups. The major reasons for public distaste with anything nuclear were the environmental and health consequences of the Soviet nuclear testing program at Semipalatinsk, where more than 450 nuclear tests were conducted, as well as memories of the disastrous Chernobyl tragedy (1986).

While public seems to be more accepting of nuclear energy plans now (in Kazakhstan, where such plans have been made), potential social protests against nuclear energy cannot be ruled out.

⁸⁰ “What Are Spent Nuclear Fuel and High-Level Radioactive Waste?” Office of Civilian Radioactive Waste Management, U.S. Department of Energy, <<http://www.ocrwm.doe.gov/factsheets/doeymp0338.shtml>> (October 15, 2009).

⁸¹ Mary Beth Dunham Nikitin, Jill Marie Parillo, Sharon Squassoni, Anthony Andrews, and Mark Holt, “Managing the Nuclear Fuel Cycle: Policy Implications of Expanding Access to Nuclear Power,” CRS Report to Congress, November 1, 2007, p. 6.

⁸² “Kazakhstan Rejects Plan to Build Balkhash Nuclear Power Plant,” *Interfax-Kazakhstan*, September 26, 2000; FBIS Document CEP20000926000321.

All five Central Asian states to varying extents are prone to domestic instability. For our specific matter of study, domestic instability in any of the countries involved would mean additional risks, such as potential disruption in physical protection and control of radioactive material, its diversion, disruption in control over nuclear facilities, failure in safeguards and export controls.

Another matter of concern related to uranium field is a potential inter-elite fight for access to strategic resources. Political and economic interest groups are not separate from each other in the Central Asian context. It is widely believed that many lucrative industries are controlled by elites with strong political and economic agendas. The inter-elite struggle for political and economic interests can result in redistribution of resources with potential disruption of industries and international deals.

Central Asian uranium-rich countries will by default compete among themselves for international markets. Right now, Kazakhstan is well ahead of its neighbors in terms of uranium production and export. Uzbekistan, second to Kazakhstan, produces considerably less uranium. Competition might develop between Kyrgyzstan, Tajikistan, and Turkmenistan once uranium exploration and production in these three countries enters a more advanced stage. At this stage, there might be some competition for foreign investment.

A recent episode publicized by mass media provides some anecdotal evidence to sensitivities surrounding uranium fields in the region. In July 2009, Tajik law enforcement forces detained the General Director of the country's key uranium enterprise *Vostokredmet*, Shavkat Bobodjonov, on the accusation of "spying for the benefit of Uzbekistan." Several employees of the same enterprise were detained on similar charges just a few months earlier.⁸³

In terms of nuclear fuel cycle Kazakhstan faces no competition in the foreseeable future due to the country's major advances in this field in the recent few years.

Uranium is becoming new "oil" and external countries have moved into the region with an aim to secure access to Central Asian uranium. Competition is already underway between several countries, most notably, Russia, China, Japan, Canada, and Australia. Noting geopolitical conditions, Central Asian states will be forced to maneuver between interests of several key external actors. Russia remains the key external actor and it will be reluctant to give away its previously exclusive position on Central Asian uranium playing field. Central Asian states, while still heavily involved with Russia, are moving towards diversifying

⁸³ "Tajikistan: Vostokredmet Director Detained for Spying for the Benefit of Uzbekistan [in Russian]," July 23, 2009, <<http://www.ferghana.ru/news.php?id=12503&print=1>> (October 15, 2009).

the pool of their foreign partners. It is especially noticeable in Kazakhstan's case. With demand for uranium growing, there will be more and more competition for access to strategic resources.

ENERGY, ENVIRONMENT AND THE FUTURE OF SECURITY IN CENTRAL ASIA

ROME, ITALY
15-16 OCTOBER 2009

Thursday, 15 October 2009

8:30 **Welcome**

- Vincenzo SCOTTI (Italy), Deputy Minister of Foreign Affairs and Secretary of State
- L. Sergio GERMANI (Italy), Academic Director, Department of Intelligence and Security Studies, Link Campus University
- Marco CARNELOS (Italy), Deputy Foreign Policy Advisor to the Prime Minister

8:45 **Overview**

- Carol DUMAINE (USA), Deputy Director for Energy and Environmental Security-IN, U.S. Department of Energy

9:00 ***“Thinking from the Outside In”: Central Asia in a global context***

Panel moderated by Joe PRESEL (USA), Former U.S. Ambassador to Uzbekistan

- *Central Asian Security: Rationality and /or Ambitions*
Rafik SAYFULIN (Uzbekistan), National security expert
- *“Misunderstanding”: A Road to Nowhere*
Faredun HODIZODA (Tajikistan), National Coordinator for the Project ‘Dialogue on Resource Management in Tajikistan’ run by International Alert

These presentations will address some of the key issues affecting Central Asia and begin considering how global and regional forces and developments interconnect.

9:45 ***Developments affecting Central Asia’s future security & stability***

Panel moderated by Irving MINTZER (USA), Principal, MEG LLC

- *Energy and Environmental Issues in Central Asia's Security Agenda*
Stephen BLANK (USA), Research Professor of National Security Affairs, US Army War College, Carlisle
- *Conventional Security Risks to Central Asia: A Summary Overview*
Paul QUINN-JUDGE (UK), Central Asia Project Director and Russia Adviser, International Crisis Group (based in Bishkek, Kyrgyzstan)
- *Traditional and Non-Traditional Security Threats in Central Asia: Connecting the Old and the New*
Niklas SWANSTRÖM (Sweden), Director of the Institute for Security and Development Policy, Stockholm

This panel will consider some of the broad strategic influences on Central Asia's future security and stability.

10:30 **Break**

10:45 ***Strategic implications***

Plenary discussion of the first five presentations moderated by Irving MINTZER

11:30 ***Central Asia in the next 10 years: New and emerging risks to security and stability***

Working Group Activity introduced by Carol DUMAINE and Irving MINTZER

This session will consider an array of strategic challenges, framed by the question: "What issues are analysts and decisionmakers not thinking about that may affect critical energy and environmental aspects of security in Central Asia as well overall security and stability in the region?"

12:25 ***Overview of the afternoon session***

L. Sergio GERMANI

12:30 **Lunch**

13:30 ***Key strategic issues***

Panels moderated by Jean-Louis TIERNAN (Canada),
Coordinator of Academic Outreach at the Canadian Security
Intelligence Service

These panels will provide a broad look at some key energy and environmental issues affecting the future of security and stability in the Central Asian region that have the potential to combine in unexpected ways.

Panel (A)

- *Environment and Security in the East Caspian Region*
Timur BERKELIEV (Turkmenistan), scholar and environmentalist
- *Energy-related Corruption and its Effects on Stability in Central Asia*
Gavin HAYMAN (UK), Campaigns Director, Global Witness, London
- *Uranium Production and Nuclear Energy in Central Asia: Assessment of Security Challenges and Risks*
Togzhan KASSENOVA (Kazakhstan), Senior Research Associate, Center for International Trade and Security, Washington, D.C., USA

Plenary Discussion

Panel (B)

- *Radioactive Tailings in Kyrgyzstan: Challenges and Solutions*
Kalia MOLDOGAZIEVA (Kyrgyzstan), Director of the Human Development Center, “Tree of Life”, Bishkek,
- *Climate Change and Water Security: Implications for Central Asia*
Renat PERELET (Russia), Institute for Systems Analysis, Russian Academy of Sciences, Moscow

Plenary Discussion

15:15 **Break**

15:30 ***Headlines from the future and critical uncertainties***
Working Group Activity followed by Plenary Reports, moderated by Irving MINTZER

What critical uncertainties and risks emerge in these old and new combinations of concerns that could pose significant security-related consequences affecting the region and beyond?

16:45 **Closing thoughts**

17:00 **Adjourn**

19:00 **No-host dinner**

Day 2: Friday, 16 October 2009

8:30 **Overnight reflections**

Plenary discussion moderated by Carol DUMAINE and Irving MINTZER

8:45 **Surprising interconnections**

A strategic conversation moderated by Jean-Louis TIERNAN

- *Impacts of Climate Change on Energy Infrastructure*
Cleo PASKAL (Canada), Associate Fellow, Energy, Environment and Development Program, Chatham House, London
- *The Central Asian Energy-Water-Food Nexus in the Context of Future Developments and Environmental Change*
Tobias SIEGFRIED (Switzerland), Associate Research Scientist at The Earth Institute and Adjunct Assistant Professor at the School of International and Public Affairs, Columbia University, New York
- *The Caspian Sea Region towards 2025: Ecosystems, Politics and Energy*
Indra OVERLAND (Norway), Head of Energy Program, Norwegian Institute of International Affairs, Oslo

9:45 ***Unknowns, uncertainties and potential interactions among them***

Working Group Activity introduced by Irving MINTZER

This session will focus on the dynamics among separate and distinct forces, including those acting globally that could interact within the region.

10:30 **Break**

11:00 ***Crafting short future histories***

Working Group Activity introduced by Irving MINTZER

In this session, the focus shifts to the strategic implications of interdependencies among the issues facing the region and the interconnectedness among the risks.

12:00 **Lunch**

During lunch, Takeshi YUASA (Japan), Senior Research Fellow, National Institute for Defence Studies (Tokyo) will speak on ***“Central Asia in the Context of Japanese-Russian Relations”***.

13:30 ***Presentations and discussions of short future histories***

Plenary discussion moderated by Joe PRESEL

One person from each table will have three to five minutes to present the short future history, using a transparency with a template that has been filled out by his or her working group.

14:30 ***Implications for strategic foresight and warning***

Plenary discussion moderated by Carol DUMAINE

In exploring the short future histories developed earlier today, are there identifiable tipping points or thresholds, which, if crossed, might trigger the imagined outcomes and should be explored more carefully?

15:45 **Break**

16:00 ***Next steps toward enhanced strategic foresight***

Plenary discussion moderated by Carol DUMAINE and Irving MINTZER

16:30 *Summary of key insights for decision makers*
Plenary discussion moderated by Irving MINTZER

16:50 *Closing remarks*
Sergio GERMANI, Carol DUMAINE, Vincenzo SCOTTI

Submission Guidelines and Process of Selection

Many of the articles are solicited, but authors are encouraged to send their work directly to the Editor who will suggest changes and determine the relevance of the articles for each issue. Articles can also be sent to any of our senior advisors, but the Editor has full responsibility on accepting or refusing individual articles. Shorter articles will be responded to within a week, whereas the response to longer analytical pieces could take up to three weeks. Some articles will be dealt with by the editors immediately; most articles are also read by outside referees. Copyright of articles remains with *Central Asia-Caucasus Institute and Silk Road Studies Program*, unless another agreement has been reached.

Manuscript. Each submitted article should be sent to the Editor by e-mail attaching the word document. All correspondence will be conducted through e-mail during the process. The Editor reserves the right to edit the article to conform to the editorial policy and specifications of the CEF Quarterly and to reject the article should it not be acceptable to our editorial committee for publication.

Regular Articles: Articles should be in-depth and offer a long-term analysis of the particular problem. References are preferred to support your evidence according to the Chicago system. The articles should aim at 7000 words. Each article should be summarized in an abstract of not more than 150 words and include keywords.

Commentaries: Commentaries require a three to four sentence introduction to the article based on a news hook. Rather than a general, overarching analysis, the article must offer considered and careful "judgment" on the issue supported with concrete examples. Recommended length is 2000 words.

References. All authors should adhere to the Chicago reference system in their articles. These should appear in the form of footnotes. References to books and articles should be contained in the notes and not in a separate reference list. Provide translations of non-English language titles.

Articles from Journals: Phil Williams, "Transnational Criminal Organizations and International Security," *Survival* 36, 1 (1994): 96.

Books: Patrick L. Clawson and Rensselaer W. Lee III, *The Andean Cocaine Industry* (New York: St. Martin's Press, 1998)

Newspapers, News-agencies & Magazines: Toby Harnden, "Drug Trade 'Reaches to Afghan Cabinet,'" *Daily Telegraph*, February 5 2006.

Electronic Sources: George Bush, "Principles of Ethical Conduct for Government Officers and Employees," Executive Order 12674, April 12 1989, pt. 1, <www.usoge.gov/exorders/eo12674.html> (October 30 1997).

Subsequent references: a reference to a single source in the previous note should be replaced by '*Ibid.*'; in later notes by author's surname, title and page number.

Style: American spelling throughout; percent rather than per cent or %; Capital letters for the East, West, North and South, when global; western, eastern, northern and southern; Dates: November 6 2005.

Figures & Tables. All figures and tables must be discussed or mentioned in the text and numbered in order of mention. Define all data in the column heads. Figures and tables should be of good quality, and contain full references to the original source.

Affiliation. On the title pages include full names of authors, academic and/or professional affiliations, and the complete address of the author to whom correspondence and hard-copies should be sent.

NOTE: Submissions which are likely to require undue editorial attention because of neglect of these directions or poor presentation or language will be returned.

The China and Eurasia Forum Quarterly (ISSN: 1653-4212) – formerly *CEF Quarterly* and *CEF Monthly*. Volume and issue numbers follow the sequence of *CEF Quarterly* and *CEF Monthly*. The first issue of *The China and Eurasia Forum Quarterly* was numbered Volume. 3, No. 3, November 2005.

THE CHINA AND EURASIA FORUM QUARTERLY

Volume 8, No. 2

Summer 2010

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