

# NBR

# ANALYSIS

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For further information about NBR, contact:

THE NATIONAL BUREAU OF ASIAN RESEARCH  
4518 UNIVERSITY WAY NE, SUITE 300  
SEATTLE, WASHINGTON 98105-4530  
206-632-7370 PHONE  
206-632-7487 FAX  
nbr@nbr.org EMAIL  
<http://www.nbr.org>

## Foreword

In the wake of the events of September 11 and the war against the Taliban regime in Afghanistan, U.S. interest in the Central Asian region has reached a historic high point. In a few years, a region that was once lumped together by policymakers and analysts alike under the rather derisive rubric of “the Stans”—that is, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan—has emerged as crucial to the future security of Eurasia. U.S. military bases in Kyrgyzstan, Tajikistan, and especially Uzbekistan have proven to be vital for military intervention in Afghanistan and ongoing efforts at post-war reconstruction. The increasing importance of the region’s oil and gas resources has generated new rivalries among the great powers surrounding Central Asia. At the same time, the increasing authoritarianism, endemic corruption, socioeconomic inequality, widespread trafficking of drugs, weapons, and people, and weak domestic legitimacy of the five new Central Asian states raise concerns about the potential for future unrest and political radicalism in the region—particularly if Central Asia’s radical Islamist movements are able to capitalize on growing social tensions.

Just how unstable are the newly independent Central Asian states? What are the prospects for cooperation among them on key issues of security and development? This issue of the *NBR Analysis* focuses on vital factors underlying state stability in the region that are often neglected by analysts: the troubling conditions of the region’s educational and physical infrastructures. More than a decade after the Soviet collapse, the existing infrastructure of the five countries of Central Asia is still largely that inherited from the Soviet Union. On the one hand, this gives them some advantages over many less developed states in Africa, the Middle East, and Asia where key indicators of modernization, such as urbanization, literacy, industrialization, and communications links, are far less advanced. On the other hand, the late Soviet educational system suffered from ideological rigidity and institutional corruption, and reforming it to attain international standards of educational excellence has been a daunting challenge. Meanwhile, the Soviet developmental model left behind systems of transportation, energy distribution, and water usage that were in most cases economically wasteful and inefficient; moreover, Soviet infrastructure was designed in the context of a unified state, and not surprisingly was poorly suited to cope with the breakup of the Central Asian region into several competing sovereign nations.

Mark Johnson's essay in this issue provides a timely overview of trends in the secular education system in the five Central Asian states plus Azerbaijan. The picture he paints is generally grim. Throughout the region, endemic corruption has penetrated nearly every aspect of the educational system, while funding problems have led to long wage delays for teachers, decaying and often unheated school buildings, and inadequate provision of textbooks. As a result, many ambitious and talented young Central Asians have fled to the West, while poorer, disenfranchised students have either dropped out of school altogether, or, in some cases, begun to rely on informal Islamic educational networks. Upon closer examination, however, the picture varies in different countries of Central Asia. While Azerbaijan and Kazakhstan have had enough revenue from energy exports and enough national will at least to initiate plans for systematic educational reform, schools in Uzbekistan and Turkmenistan have been subjected to rigid ideological curricula focused on legitimating dictatorial rule. Finally, Kyrgyzstan and Tajikistan, despite their earlier progress in democratization, suffer from problems of poverty so dire that the total collapse of these states' secular education systems is a distinct possibility. Mark Johnson concludes that there is an urgent need for increased, and better coordinated, international aid to support Central Asian education through increased international exchanges, the building of more effective teacher training and professional development for local teachers, efforts to encourage greater school attendance in poverty reduction programs, and revamped school curricula.

Erica Johnson and Justin Odum contribute an essay on the physical infrastructure of Central Asia that, while similarly sobering, also points to some recent successes in international efforts to address problems of decay in the region's transport, energy, water, and telecommunications systems. International financial institutions (IFIs) have provided loans and aid to support small-scale water projects as well as roads connecting previously isolated towns and villages that have had a significant positive impact on local populations. Foreign investment in new energy infrastructure, particularly in Kazakhstan, has increased dramatically in recent years. However, significant problems for regional cooperation remain. Uzbekistan, with its geopolitically central position in the region, has often been unwilling to pursue the kinds of cooperative regional initiatives preferred by IFIs. Turkmenistan continues to pursue grandiose and wasteful visions, such as the potentially disastrous Golden Century Lake project, that reflect the megalomania of its leader rather than any sensible development priorities. Ethnic tensions and local border disputes bedevil efforts at rational planning in Kyrgyzstan and Tajikistan. And throughout the region, a continuing reliance on the ecologically destructive cotton monoculture remains a huge obstacle to reform of Central Asia's often-tense disputes

over water. Nevertheless, Johnson and Odum argue that the outbreak of major regional conflict over issues of physical infrastructure per se is unlikely, unless such conflicts are motivated by a concern to defend symbols of national identity and sovereignty. Taking concerns for sovereignty seriously and helping each Central Asian country consolidate its national infrastructure, the authors conclude, may be a more viable strategy than attempting to resurrect the transnational infrastructure inherited from the USSR.

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Stephen E. Hanson  
Senior Advisor  
Eurasia Policy Program

Richard J. Ellings  
President  
The National Bureau of Asian Research



# **Trends in Secular Educational Development in Azerbaijan and Central Asia: Implications for Social Stability and Regional Security**

*Mark S. Johnson*

The public or secular educational systems in Azerbaijan and post-Soviet Central Asia (comprising Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan) are clearly failing, particularly in the poorest regions and for the most disadvantaged elements of the population. Problems plaguing the region include corruption, entrenched interests, administrative incapacity, widespread poverty, the flight of educated individuals not only out of the education sector but even out of the countries themselves, and a small but growing trend toward Islamic education. This article begins by tracing how some of the challenges faced by these countries—such as involuntary vocational tracking and political indoctrination—originated in the era of Soviet power. After providing a general overview of developments in the post-Soviet era, individual country studies are then presented and the effects of international assistance programs are examined. The study finds only cautious ground for optimism, identifying Azerbaijan and Kazakhstan as the countries with the greatest potential to overcome these problems, Uzbekistan and Turkmenistan with the weakest prospects, and Kyrgyzstan and Tajikistan falling somewhere in between. The author warns that these problems could result in both social instability and challenges to political legitimacy in these countries, and could even impact regional security. The essay closes by offering policy recommendations on how the international community can best work to mitigate these problems.

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Mark Johnson is associate professor of history at Colorado College. He received his Ph.D. from Columbia University. Dr. Johnson has published widely in the field of Soviet and post-Soviet education, including “Higher Educational Crises, the Politics of Terrorism and International Assistance Programs in Post-Soviet Central Asia,” in Wayne Nelles, ed., *Comparative Education, Terrorism and Human Security* (forthcoming); and “The Legacy of Russian and Soviet Education and the shaping of Ethnic, Religious, and National Identities in Central Asia,” in Stephen P. Heyneman and Alan J. De Young, eds., *The Challenge of Education in Central Asia*, 2004.

## Introduction\*

The public or secular educational systems in Azerbaijan and post-Soviet Central Asia are clearly failing, particularly in the poorest regions and for the most disadvantaged elements of the population. This study finds that the situation—while perhaps salvageable—is rapidly approaching the “tipping point” of systemic failure, especially in the poorest nations such as the Kyrgyz Republic (or Kyrgyzstan) and Tajikistan. As one indicator, there is an undeniable flight into elite private provision and study abroad, as well as a very real “brain drain” out of the educational sector and even out of the region. There is also a small but growing trend toward separatist Islamic education, especially in the “Islamic belt” of southern Kazakhstan, southern Kyrgyzstan, the Ferghana Valley, Tajikistan, and possibly rural Azerbaijan.<sup>1</sup> Thus, the important question that must be asked is—can anything be done to remedy the situation? This study finds that these negative trends can still be reversed if vigorous measures are taken to bolster the integrity, capacity, and quality of the secular educational systems.

The analyses of each country in the region that are contained in this report suggest a spectrum of national responses to these educational crises. The top tier—those nations with at least the potential to overcome these problems—includes Azerbaijan and Kazakhstan. A belated consensus seems to be emerging in these two countries. After a decade of inertia on the need for comprehensive reform, efforts would be funded at least in part by state oil profits. Serious questions remain, however, whether endemic corruption in the educational sector can be overcome and the domestic political will found to persevere against entrenched interests, including university rectors and school administrators.

In the middle tier, although tenuously so, stand Kyrgyzstan and Tajikistan, where the severity of the crisis has generated an official awareness of the need for both comprehensive reform and significant commitments of international assistance. However, administrative incapacity, widespread poverty, and corruption in both nations have hindered domestic reform programs and squandered at least some international assistance efforts.

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\* This paper draws upon several years of the author’s research on education policy in the former Soviet Union; participation in various evaluations and policy projects for U.S. government agencies as well as private foundations active in the educational sector in the region; field research and interviews conducted between April and May 2004 in Kazakhstan, Azerbaijan, and Kyrgyzstan; as well as participation in education-related conferences in the region. This paper has also been informed by the more quantitative, individual country reports prepared for NBR’s Central Asia Education Study 2003–2004. The author wishes to thank educators and others who shared their time and data for this report.

<sup>1</sup> Azizulla Gaziev, “Islamic Education in Southern Kazakhstan, Southern Kyrgyzstan, and Uzbekistan,” unpublished report prepared for The National Bureau of Asian Research, Seattle, Wash., 2004.



Finally, there is the bottom tier, which includes Uzbekistan and Turkmenistan. The authorities in these countries have either been wary of, or resistant to, educational reforms that threaten to compromise either their entrenched positions or their self-perceived ability to control the younger generation. While this approach has led these states to attempt to preserve such key elements of the Soviet educational system as involuntary vocational tracking and political indoctrination, such “solutions” seem increasingly brittle and unsustainable as the economic and political crises deepen.

Standing back to consider the region as a whole, only the most cautious grounds for optimism exist; trends in secular educational development clearly hold ominous implications for both social stability and political legitimacy. Note that other recent analyses have argued that the acute problems afflicting the region—such as endemic state crises, crime and narcotics trafficking, ethnic tensions, corruption, and competition over energy resources—are exacerbated (if not caused outright) by the failings of the regimes themselves, which are too often unable or unwilling to address the various fault lines of persistent or potential violent conflict.<sup>2</sup>

From a regional and international perspective, moreover, other studies have noted that systemic crises in the physical and social infrastructure of the post-Soviet states can have important security ramifications.<sup>3</sup> In addition, not only has there been expanded engagement by the United States in both the Caucasus and Central Asia after September 11, but U.S. policymakers, scholars, and media have expressed growing concern about how chronic neglect in key arenas of “human security”—such as education, public health, and environmental sustainability—can contribute directly to social crises, violent conflict, and terrorism, especially in weak or failing states.<sup>4</sup>

Thus, a main goal of this study is to investigate how the educational systems—both secular and religious, and as bolstered by international assistance programs—might contribute

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<sup>2</sup> Ahmed Rashid, *Jihad: The Rise of Militant Islam in Central Asia*, New Haven: Yale University Press, 2002; and O. Oliner and T. S. Szyana, *Faultlines of Conflict in the Caucasus and Central Asia: Implications for the U.S. Army*, Santa Monica, Calif.: RAND Arroyo Center, 2003.

<sup>3</sup> Mark Johnson and the Bureau of Intelligence and Research of the U.S. State Department, *Russia's Physical and Social Infrastructure: Implications for Future Development*, Washington D.C.: National Intelligence Council (NIC), 2000.

<sup>4</sup> M. R. Beissinger and C. Young, eds., *Beyond State Crisis: Postcolonial Africa and Post-Soviet Eurasia in Comparative Perspective*, Washington, D.C., and Baltimore: Woodrow Wilson Center Press and Johns Hopkins University Press, 2002; and Center for Global Development, *On the Brink: Weak States and U.S. National Security*, Washington, D.C.: CGD, 2004, <[www.cgdev.org](http://www.cgdev.org)>.

more constructively to both development and regional security, and thereby minimize extremism and terrorism.<sup>5</sup> In terms of policy recommendations, the international community should realize that a bolstering of state capacity to articulate and implement reform policies is a central prerequisite for sustainable and systemic educational reform. International assistance programs thus must actively help leverage, catalyze, and make more transparent the often quite

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*Many internal resources are currently being siphoned off by corruption, elite private provision, and study abroad.*

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substantial flow of domestic public and private funding into educational services; this step is especially crucial given that many of these internal resources are currently being siphoned off by corruption, elite private provision, and study abroad. International assistance to these areas should also

help build checks and balances into the educational systems in the form of autonomous labor and professional organizations that can help defend the pay, pensions, and academic freedom of educators. Moreover, an equally vital role can be played by autonomous non-governmental organizations (NGOs) and think tanks able to produce high quality policy analysis, solid statistical data, and objective evaluations of pilot projects and reform efforts. All the above efforts will require a significant increase in international investment in secular education in Azerbaijan and Central Asia, as well as a much greater effort to coordinate the wide array of bilateral and multilateral assistance programs.

The study is divided into six main parts. The first examines the legacies of Soviet power and Soviet education in these countries, which is then followed by an overview of the development of the educational crises in the post-Soviet era. A third section provides a country-by-country review of the educational systems in the region, which in turn is followed by a look at what the international community has been trying to do to ameliorate the education-related problems in the region. Fifth, a summary section speaks to the implications for stability and security of these general domestic and international efforts relating to educational trends. A final section closes by offering a set of policy recommendations for the international community to follow in order to help stabilize the educational system in the region and help avert sociopolitical instability in the region.

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<sup>5</sup> Such a relationship has been posited by others. See, for instance, K. Cragin and P. Chalk, *Terrorism and Development: Using Social and Economic Development to Inhibit a Resurgence of Terrorism*, Santa Monica, Calif.: RAND, 2003.

### The Legacies of Soviet Power and Soviet Education

Most Western analyses in the 1960s and 1970s echoed official Soviet accounts that modernization and industrialization were unfolding according to plan in the Soviet south.<sup>6</sup> Subsequent accounts began, however, to question these assumptions and started to depict the region, especially Soviet Central Asia, as failing due to exploitative economic development and ecological degradation.<sup>7</sup> Some have also argued that the institutions of Soviet power, especially the educational and health programs of the Soviet welfare state, barely penetrated these societies beyond the urban core.<sup>8</sup> In other words, the persistence of non-wage labor and strong traditional households allowed for both strong cultural resilience and “structural” backwardness. While the Soviet repression of religious and national elites in the Caucasus and Central Asia was certainly brutal, also clear is that the Soviet personnel (or *nomenklatura*) system both built upon and absorbed older patron-client networks, and thus reproduced distinctive regional and sub-regional power blocs and identities.<sup>9</sup> All of these facts are relevant to this study because of the powerful ways in which post-Soviet political and economic relations (including patterns of corruption and cronyism) emerged directly out of these late Soviet-era solidarity networks and power structures. Equally clear, however, (and more ominously so) is that the post-Soviet states inherited the acute legitimacy crisis of the late-Soviet system as well.

A broad consensus then emerged in the mid-1990s: first, that there were essentially three broad social identities in Muslim Eurasia, and second, that radical or fundamentalist Islam, especially as imported from beyond the region, remained marginal at best.<sup>10</sup> At the top are the thoroughly Sovietized indigenous elites, who were compelled after independence to grasp for new forms of legitimacy through ethnic nationalism, Western-financed resource extraction, pseudo-traditional state symbols and historical narratives, and/or statist Islam.

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<sup>6</sup> W. K. Medlin, W. M. Cave, and F. Carpenter, *Education and Development in Central Asia: A Case Study on Social Change in Uzbekistan*, Leiden: E. J. Brill, 1971.

<sup>7</sup> W. Fierman, ed., *Soviet Central Asia: The Failed Transformation*, Boulder: Westview Press, 1991.

<sup>8</sup> G. Derluigan, “Rouge et Noire: Contradictions of the Soviet Collapse,” in *Telos*, vol. 96 (1993), pp. 13–25.

<sup>9</sup> Olivier Roy, *The New Central Asia: The Creation of Nations*, New York: New York University Press, 2000.

<sup>10</sup> Yaacov Ro'i, *Muslim Eurasia: Conflicting Legacies*, London: Frank Cass, 1995; A.V. Malashenko, ed., *Islam v SNG*, Moscow: Institute of Eastern Studies of the Russian Academy of Sciences, 1998.

Next are the broad masses of the population, largely products of the Soviet educational system, who share a basically secular orientation, a Russified mass culture, and an essentially modern (if somewhat artificial or tenuous) sense of their own ethno-national identities.<sup>11</sup> A distinction must be made, however, between the more secular and multiethnic urban populations, and the rural and mountainous areas, which have tended to remain both more traditionally Islamic as well as more ethnically homogeneous.<sup>12</sup> Over the course of the 1990s, these multicultural “national” identities forged in the Soviet period seemed to erode due not only to the rise to dominance of the titular nationalities and the marginalization or emigration of the Slavic minorities, but also to the emergence of increasingly politicized regional identities.<sup>13</sup> This latter issue is directly related to the specific ways in which the Soviet system collapsed, including the tendency of the system to fragment in ways that empowered regional party-state elites: these individuals moved to seize control of the bureaucratic apparatus and then used this institutional power base to expropriate or “privatize” state property, including educational institutions. Others have also suggested that any acute threat that might appear in the region in the near future would likely be a result of these regional tensions within states erupting into violent competition over political succession and/or the control of economic and energy resources.

Finally, there are also various sectarian and other radical movements, both Islamic extremists and ethnic nationalists—although these groups have remained marginal, in large part because the shared legacy of Soviet education has persisted and the core public services of the newly independent states have endured. This is, of course, precisely the problem: this shared educational legacy is steadily disappearing, and both state capacity and social services—such as secular education and public health—continue to decline throughout the region.

All of this suggests that neither traditional Islam nor modern nationalism seem capable of ensuring social cohesion or political consensus in most, if not all, of the states of the region. This fact helps to explain the emergence of increasingly personalized dictatorships in the region, yet also highlights the dangers for succession and stability beyond the virtually inevitable failure of those efforts at enforced stasis and paternalistic control. More hopefully, researchers interested in the area should bear in mind that the region does share a deep history of cultural

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<sup>11</sup> R.G. Suny, “Provisional Stabilities: The Politics of Identities in Post-Soviet Eurasia,” in *International Security*, vol. 24, no. 3 (Winter 1999/2000), pp. 139–178.

<sup>12</sup> S. B. Poliakov, ed., *Everyday Islam: Religion and Tradition in Rural Central Asia*, Armonk, N.Y.: M. E. Sharpe, 1992.

<sup>13</sup> Pauline Jones-Luong, ed., *The Transformation of Central Asia: States and Societies from Soviet Rule to Independence*, Ithaca, N.Y.: Cornell University Press, 2004.

syncretism, religious pluralism, and ethnic coexistence—although all of these traditions are under strain due to economic crisis, endemic poverty, less-tolerant external influences, and the larger geo-strategic rivalries that are playing out across the region. Little of that history of tolerance and pluralism is reflected in the increasingly nationalistic and xenophobic curricula, and there are frequent complaints about educational access and equity heard among the Slavic populations of northern Kazakhstan and Kyrgyzstan, the Uzbek populations of southern Kyrgyzstan and Turkmenistan, and the Tajik population in Uzbekistan. These disputes help demonstrate just how much is at stake in the educational arena. The secular or public educational systems may thus be one of the few institutional structures that could either help to hold together—or contribute to the failure of—these struggling nation-states.

More specifically, in discussing the Soviet legacies in the sphere of education, we find both positive and negative impacts.<sup>14</sup> A solid infrastructure for educational provision and administration was indeed established, although development admittedly lagged not only in the rural and mountainous regions of the Soviet south, but also especially in tertiary education and advanced research. Given the post-World War II rise of indigenous elites into higher education (especially in the arts, humanities, and journalism), there was, in the late-Soviet republics, a widely shared sense that Soviet mass education was one of the real achievements of the regime.<sup>15</sup> Most importantly, nearly universal elementary education and literacy were established, although many of the institutional structures that fostered those achievements—including comprehensive systems for teacher education, in-service professional development, and heavily subsidized pedagogical publishing—have all degraded sharply since 1991. For all the concerns about quality and comprehensiveness, the mass provision of Soviet education undeniably helped to create a level of social cohesion,<sup>16</sup> as well as very real compensatory legitimacy for the regime. Soviet education also established a widely shared public expectation for the continued provision of secular and coeducational schooling at little or no cost and on a

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<sup>14</sup> For a broader discussion, see Mark S. Johnson, “The Legacy of Russian and Soviet Education and the Shaping of Ethnic, Religious and National Identities in Central Asia,” in Stephen P. Heyneman and Alan J. De Young, eds., *The Challenges of Education in Central Asia*, Greenwich, Conn.: Information Age Publishing, 2004, pp. 21–36.

<sup>15</sup> F. Sharipov, *Narodnoe obrazovanie v Uzbekistane*, Tashkent: Uzbekistan, 1977; K. D. Zhulamanov, *Vysshaia shkola respublik Srednei Azii i Kazakhstana, 1961–1975 gg.*, Alma-Ata: Izdatel'stvo “Nauka” Kazakhskoi SSR, 1981.

<sup>16</sup> S. P. Heyneman, “Education and Social Stability: An Essay,” in *Compare*, vol. 27, no. 1 (March 1997): pp. 5–18; and S. P. Heyneman, “From the Party/State to Multiethnic Democracy: Education and Social Cohesion in Europe and Central Asia,” in *Educational Evaluation and Policy Analysis*, vol. 22, no. 2 (Summer 2000): pp. 171–191.

fundamentally egalitarian basis. Needless to say, both of those principles have been profoundly degraded or simply repudiated since 1991, as will be detailed below.

For all of these achievements, the Soviet educational system was also rigidly bureaucratized, narrowly and involuntarily vocational, and institutionally fragmented, with different hierarchies of educational provision and training divided between different branch ministries, which resulted in gross inefficiencies and parallelism. Soviet education was also funded on a residual basis, only after more important industrial, military, and internal security budget needs were met; thus official statistics about investments in education, training, and infrastructure are not completely reliable. In fact, complaints about diverted educational funding, deteriorating infrastructure, and delayed and inadequate salaries have been chronic since the 1980s. The system was also characterized by uniform (if exceptionally rigid) conceptions of appropriate pedagogy and formal “didactics,” authoritarian teaching, content-heavy and centrally mandated curricula, and too little attention to the quality or nature of student learning. Furthermore, the educational system in the Soviet south, especially in Central Asia, was heavily dependent on federal subsidies and on centrally funded advanced training and research exchanges to Moscow, Leningrad (St. Petersburg), and other universities throughout the Eastern Bloc, opportunities that have disappeared since 1991. The system had several acute ideological and cultural weaknesses, which included the stultifying effect of Soviet political indoctrination, the suppression of popular Islam, and the artificiality of the state-controlled, “official” religious establishment.<sup>17</sup> Finally, another key failing of the Soviet educational system was the weak and disarticulated nature of professional networks and the inability of educators and teachers to self-organize, which has contributed to chronic difficulties since 1991 in the development of such areas as domestic policy capacity, publishing quality, educational research, and mechanisms for evaluation.

The issue of language instruction was also contentious throughout the Soviet period, with the central government increasingly using heavy-handed efforts to force or encourage Russian language instruction, with Russian at least being dominant in secondary and higher education.<sup>18</sup> Yet worthy of acknowledgement is that the Russian language did provide a *lingua franca* for educational development throughout the region.<sup>19</sup> While both necessary and inevitable, the

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<sup>17</sup> Y. Ro'i, *Islam in the Soviet Union: From the Second World War to Gorbachev*, New York: Columbia University Press, 2000.

<sup>18</sup> M. Kirkwood, *Language Planning in the Soviet Union*, New York: St. Martin's Press and the School of Slavonic and East European Studies, University of London, 1990.

<sup>19</sup> I. Kreindler, “Multilingualism in the Successor States of the Soviet Union,” in *Annual Review of Applied Linguistics*, vol. 17 (1997): pp. 91–112.

reassertion of national languages in education has also had such undeniable costs as cutting off the younger generation from much of the existing knowledge base and library resources, examples of which include high quality Soviet-era technical, medical, and pedagogical publications. Furthermore, the sometimes-chaotic efforts to reassert the primacy of the national languages in education have also resulted in severe strains within the educational systems in terms of the quality and availability of materials in the national languages. Another effect has been that the skills and morale of the existing teaching corps, who were trained largely in Russian in Soviet-era pedagogical institutions, have been compromised. More specifically, the “nativization” of elites in virtually all sectors—for our purposes most notably in educational administration, university management, and within the Ministries of Education—has led to undeniable tensions with the Russian and Ukrainian members of the intelligentsia who had previously played a prominent role as both university faculty and members of the teaching corps. Azerbaijan, Uzbekistan, and Turkmenistan have made the most dramatic progress in language reform, including the restoration of Latin scripts from the 1920s; Tajikistan’s efforts have been impeded by acute poverty; and Kazakhstan and Kyrgyzstan have struggled to sustain some form of bilingualism.<sup>20</sup>

### Post-Soviet Systemic Educational Crises

The crises facing the secular educational systems in Azerbaijan and Central Asia are quite severe, and may soon become irremediable. The problem is especially acute in the areas of early childhood education and development, which is degrading the readiness to learn of virtually an entire generation.<sup>21</sup> Equally severe crises afflict educational funding and management as the states have lurched towards decentralization, which has essentially meant dumping responsibility for educational funding and management down onto ineffective and often impoverished or corrupt regional and municipal authorities. Finally, there have been severe problems in vocational education and training (VET). This is because Soviet-era VET programs, designed as they were for a highly specialized and integrated planned economy, rapidly became obsolete and irrelevant in the chaotic “transition” economies and collapsing labor markets.<sup>22</sup> All of

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<sup>20</sup> J. Landau and B. Kellner-Heinkele, *Politics of Language in the Ex-Soviet Muslim States*, Ann Arbor: University of Michigan Press, 2001.

<sup>21</sup> K. Osipov and C. Etherington-Smith, *Early Childhood Development in the Central Asian Republics and Kazakhstan*, Almaty: UNICEF CARK, 2002.

<sup>22</sup> G. Howse, “VET Under Review: The Challenges of Central Asia,” in *European Journal of Education*, vol. 36, no. 1 (2001), pp. 35–43.

these problems were exacerbated by the tendency of industrial and agricultural enterprises, whether in the name of privatization or simply because of incipient bankruptcy, to slough off their obligations to fund educational services and training.

Thus, naive expectations clearly existed in the early 1990s that the excellence of Soviet education would not only help cushion the shocks of transition but also that market forces would somehow magically transform deeply embedded institutional structures and pedagogical practices. The educational systems as inherited from the Soviet period, however, aligned very badly with the services and skills required in market economies and open societies.<sup>23</sup> Finally, and as detailed throughout the country reports for this study, there has also been a sharp decline in not only social and gender equity within the educational systems, but also with academic quality.<sup>24</sup> These blows, moreover, have been coupled with a corresponding loss of public support for the taxation and finances needed to sustain existing services. Funds to foster systemic reform would be even further out of the question.

From a broader social perspective, other immediate threats to the educational systems include the catastrophic rise of narcotics trafficking (flowing largely out of a still unstable Af-

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*Official statistics show steady declines in nearly all categories of educational enrollment, especially in early childhood and secondary education, in rural and mountainous areas, and for the poorest children (especially females).*

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ghanistan) and substance abuse.<sup>25</sup> Substance abuse, together with the virtual collapse of state-funded public health services, is fueling the rapid spread of HIV/AIDS, sexually transmitted diseases, and hepatitis among the young. A recent authoritative study, based largely on World Bank household survey data, has detailed the disastrous long-term effects of chronic poverty in eroding and then ultimately destroying the most fundamental net-

works of family support and social solidarity.<sup>26</sup> Recent analyses by Save the Children UK (SCF UK) and other organizations have also noted a dramatic increase in school violence and bullying, no doubt exacerbated by all of these social and economic problems, but which in turn drives students out of school and degrades the learning environment for those who remain.

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<sup>23</sup> S. Berryman et al., *Hidden Challenges in Education Systems in Transition Economies*, Washington, D.C.: Europe and Central Asia Region, World Bank, 2000.

<sup>24</sup> Iveta Silova, et al., *The Right to Quality Education: Creating Child-Friendly Schools in Central Asia*, Almaty: UNICEF, 2002.

<sup>25</sup> N. Lubin, A. Kaits, and I. Barsegian, *Narcotics Interdiction in Afghanistan and Central Asia: Challenges for International Donors*, Washington, D.C.: Eurasianet/OSI, 2002.

<sup>26</sup> N. Dudwick, E. Gomart, A. Marc, with K. Kuehnast, *When Things Fall Apart: Qualitative Studies of Poverty in the Former Soviet Union*, Washington, D.C.: World Bank, 2003.



Finally, while official enrollment data is clearly suspect, as noted throughout the country reports for this study, even those official statistics show steady declines in nearly all categories of educational enrollment, especially in early childhood and secondary education, in rural and mountainous areas, and for the poorest children (especially females).

One must also bear in mind that this systemic educational crisis is unfolding amid a volatile demographic situation, with more than 60 percent of the approximately 58 million people of the region now under the age of 30.<sup>27</sup> While at least some small percentage of this younger generation is embracing liberal values and the new economic and political opportunities of the 1990s, the vast majority are experiencing unemployment, rapidly declining educational opportunity and quality, and thwarted economic and political aspirations.<sup>28</sup> While there are some new youth-oriented NGOs, state-funded sports and youth services have virtually collapsed, and those that remain are often dominated by older officials in self-serving or perfunctory ways. Some experts have even suggested that many young people feel frustrated by unsatisfying educational experiences, with increasing numbers dropping out, simply purchasing diplomas or degrees,<sup>29</sup> or working in fields utterly unrelated to their nominal training. Many face exploitative and abusive conditions in the unstable and often criminalized labor markets, others have migrated to Russia or Kazakhstan in search of work, and many others enter adulthood without the skills needed to be able to enter the rapidly changing workforce, except to take on the most menial jobs.<sup>30</sup> Finally, anecdotal accounts suggest that juvenile delinquency, gang membership, and criminal and sexual violence among young adults have been rising, a phenomenon fueled by the drug trade, inhalant and alcohol abuse, and a pervasive social and cultural anomie.

All of this suggests a volatile and unstable mix of acute cynicism toward the public sphere combined with a frustration of young people's own ambitions. This generational crisis is also unfolding amid a structural transformation of the public sphere; new media and novel, informal opportunities for socialization and identity formation are burgeoning across Central Eurasia and the Middle East,<sup>31</sup> although these latter developments too are constrained within stagnant

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<sup>27</sup> UNICEF, *Innocenti Social Monitor*, Florence: UNICEF Innocenti Research Centre, 2003, <[www.unicef-icdc.org](http://www.unicef-icdc.org)>.

<sup>28</sup> K. Roberts, S. C. Clark, C. Fagan, C. Tholen, with A. Adibekian, G. Nemiria, and L. Tarkhnishvili, *Surviving Post-Communism: Young People in the Former Soviet Union*, Cheltenham, UK: Edward Elgar, 2000.

<sup>29</sup> P. Temple and G. Petrov, "Corruption in Higher Education: Some Findings from the States of the Former Soviet Union," in *Higher Education Management and Policy* vol. 16, no. 1 (2004), pp. 83–99.

<sup>30</sup> International Crisis Group, "Youth In Central Asia: Losing the Next Generation," *Asia Report*, No. 66, Osh/Brussels: ICG, 2003, <[www.crisisweb.org](http://www.crisisweb.org)>.

<sup>31</sup> D. F. Eickelman and J. W. Anderson, *New Media in the Muslim World: The Emerging Public Sphere*, Bloomington: Indiana University Press, 2003.

political and economic orders in nearly all the states of the region. These processes remain acutely under-researched, however, and despite the real achievements of the small number of Central Asian specialists in the United States, we simply lack the linguistic talent and the sophisticated ethnographic and sociological capacity to understand these phenomena in any real depth.

In conclusion, there are several pressing questions that arise when attempting to judge overall trends in public and private educational development in the region. The most acute concern is whether the degradation of the secular or state educational systems is approaching, or has passed, the tipping point of systemic disintegration, i.e., the point at which state and professional capacity drain away so irretrievably that—other things being equal—the systems are no longer capable of regenerating themselves. Regeneration may come about, however, through dramatic change in the domestic economic and political situation and/or the application of significant external pressure and resources. Thus, the central issue shifts then to determining the prospects in each nation for significant economic stabilization and/or political liberalization. For those nations with energy or other economic resources, for instance, we should

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*If the secular or public educational systems continue to fail, will substantial numbers of young people simply emigrate en masse, spin down into substance abuse and alienation, or actively seek out alternatives in the form of ethnic nationalism, radical Islam, or other types of political extremism?*

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ask such questions as: Are any mechanisms in place to ensure that some significant portion of those profits will be dedicated to educational development? Are the domestic policy environments at least potentially supportive of comprehensive reform, and does the professional capacity exist to articulate and implement a coherent national education strategy? To the degree that private educational provision is emerging, does it represent a useful alternative or constructive catalyst for public sector reform, or does it simply represent an elite opt out or skimming of badly needed resources from the state

educational system? Furthermore, is the international community sufficiently aware of and engaged in these educational crises, and are external pressures or resources adequate to address these needs? Are the various donor activities well coordinated, integrated with domestic reform strategies, and appropriate and realistic in the real life conditions and professional capacities of each nation in the region? Finally, and perhaps most pertinently, if the secular or public educational systems continue to fail, will substantial numbers of young people simply emigrate en masse, spin down into substance abuse and alienation, or actively seek out alternatives in the form of ethnic nationalism, radical Islam, or other types of political extremism? These are the main question that have informed the country studies that follow.

## Country Studies

### *Azerbaijan*

Azerbaijan is unique, especially in comparison to the Central Asian states, in several ways. First, it experienced rapid economic development, industrialization, and the consequent emergence of a vigorous national movement much earlier, as a direct initial result of the oil boom of the 1890s. This created significant legacies in the development of a modern vernacular language based on a Latin script, and of a modernizing Islam, especially around the *Jadidist* or “new education” movement.<sup>32</sup> Azerbaijan is also in an advantageous position because of its significant energy resources, and thus has at least the potential to fund comprehensive educational reform, although there has seemingly been little official willingness to make or even to think through the hard choices required, at least until recently. By all accounts, corruption is also endemic in the system, and “wastage” or non-enrollment and non-attendance is much higher than official statistics show.<sup>33</sup> Finally, all social services remain severely strained not only by the approximately one million internally displaced persons (IDPs) from the conflict over Karabakh (or Qarabagh), but also by the largely unregulated mass migration that is taking place from the impoverished countryside to the cities, most notably to Baku. This has been accompanied by the permanent emigration or temporary labor migration of more than three million Azeris (especially educated young people and skilled workers) out of the country altogether, largely to Russia, Europe, and Turkey.<sup>34</sup>

Eric Lepisto paints a discouraging picture of more than a decade of neglect, deteriorating infrastructure, and acute lack of political will to address the myriad problems facing Azeri education.<sup>35</sup> Especially significant is the role played by local educational administrators and ministerial officials in sustaining the existing system; the inflated or even hollow enrollment statistics, for instance, helped guarantee the flow of the salaries and budget resources of these elites. Prodded by the World Bank, the government developed a new National Education Reform Program (NERP) in 1999 which eventually led to an \$18 million World Bank loan for

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<sup>32</sup> Adeb Khalid, *The Politics of Muslim Cultural Reform: Jadidism in Central Asia*, Berkeley: University of California Press, 1998.

<sup>33</sup> J. H. Williams, *Children, Almost Hidden: What We Know and Do Not Know About Wastage in Azerbaijan's Schools*, Baku: UNICEF and Ministry of Education, 2000.

<sup>34</sup> International Organization for Migration, *Away from Azerbaijan, Destination Europe: Study of Migration Motives, Routes and Methods*, Geneva: IOM, 2001.

<sup>35</sup> Eric J. Lepisto, “Educational Trends in Azerbaijan,” unpublished country study prepared for NBR Central Asia Education Study 2003–2004, Seattle, Wash.: The National Bureau of Asian Research, 2004.

an Education Sector Development Project for 2003–2008, now projected for 2004–2014.<sup>36</sup> The World Bank’s efforts have focused on improving the quality and relevance of general education through curricular reform for grades 1–11, the development of national standards, the production of new textbooks, support for teacher education, and new mechanisms for in-service professional development. Additional components seek to improve financial efficiency and transparency as well as personnel and policy capacity within the Azerbaijani Ministry of Education (MOE). However, serious questions remain regarding whether these goals are achievable, whether donors are willing or able to better coordinate their efforts, and whether the professional capacity or political will exists to implement and ultimately to upgrade the NERP. Critics of the World Bank’s efforts argue that funds often seem to go awry within the MOE, or that proposed projects remain too small, too fragmented, and too artificial to become truly effective.

Lepisto’s country report and other sources also highlight the acute shortages of new textbooks, especially in secondary schools; the burden of widespread “fees” for textbooks and other school functions; and the prevalence of both corruption and lax standards throughout the system. Many accounts note an unfortunate tendency for international assistance efforts to cluster into “pilot” schools, which then become isolated (and sometimes privatized) “islands of excellence” rather than catalysts for systemic reform. There is an official if seemingly uninspired structure for Islamic education and religious administration, but Lepisto was unable to determine the extent of unofficial, underground, or externally financed religious training. The MOE was long opposed to any form of religious instruction in state schools, and the MOE has recently and only reluctantly agreed to approve and produce a comparative religions course and textbook for secondary schools. Rather than allow private *madrassas* to form, the regime seems willing to allow only regional affiliates of the state-controlled Baku Islamic University.

Overall, enrollment trends in Azerbaijan are mixed and, as noted above, all such official statistics hide a significant amount of non- or under-attendance. For example, pre-primary enrollments (ages 3 to 6) declined from 21.6 percent in 1989 to 10 percent in 1999, and then rose to 18.1 percent in 2001. General educational enrollments have risen from 88.5 percent to 91.4 percent, although general secondary enrollments have declined over that same period from 34.0 percent to 22.5 percent and vocation-technical enrollments have also declined from

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<sup>36</sup> World Bank, *Azerbaijan Education Sector Development Project. Project Information Document*, Washington, D.C.: World Bank, Europe and Central Asia Region, 2003.

28.8 percent to 10.1 percent. In contrast, and driven largely by fee-paying students and commercial providers, higher educational enrollments have risen from 11.9 percent to 14.0 percent.<sup>37</sup>

Evidence from my own interviews and field research also suggests that there are severe problems in the core structures of the system, with all policy initiative—or the lack thereof—emanating only from the presidential apparatus, which effectively reduces the MOE to a passive and often corrupt “transmission belt” with little incentive or capacity to develop or embrace meaningful reform policies. As in all the states in the region, the MOE is also handicapped by its bureaucratic weakness vis-à-vis the powerful Ministry of Finance (MOF), an ironic reproduction of Soviet-era patterns of “residual” financing. Many educators and especially students complain of an acute mismatch between training opportunities, the content of the curriculum, and the dismal realities of the job market. This dissatisfaction suggests that there is a real urgency to rethink both secondary-level VET and semi-professional training. This issue is related to a widespread sense that the causes of declining social and gender equity and non-attendance are as much concerns regarding instructional quality and curricular relevance as they are about the burden of school fees and opportunity costs.<sup>38</sup> Some policymakers have also expressed concern that another structural weakness is the enfeebled role of NGOs, which because of either government repression or the inexperience of activists and educators, seem to play little role in fostering such advances as independent policy analysis, objective evaluation of existing programs, or sustainable innovation external to the state system.

Another significant and unresolved issue in the structure of the educational system in Azerbaijan is the role of the State Commission on Student Admissions.<sup>39</sup> This Commission was created during the time of the Popular Front government in the early 1990s, and was intended as a check upon the corruption and parochialism of oral-exam admissions procedures that allowed university administrators and instructors to accept bribes and engage in cronyism for admissions. The State Commission appears closely connected with the President’s Office, and has developed an antagonistic relationship with the inert MOE, in part because declining student performance on exams stands as a rebuke to the Ministry’s performance. On the one hand, this system of state school-leaving exams has provided a useful measure of

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<sup>37</sup> UNICEF, *Innocenti Social Monitor*, 2003. For additional data on enrollment and other trends see <[www.unicef-icdc.org](http://www.unicef-icdc.org)>.

<sup>38</sup> UNICEF, *Reaching the Last Few: Girls’ Education in Azerbaijan*, Baku: UNICEF and the Ministry of Education of the Republic of Azerbaijan, 2002.

<sup>39</sup> GKPS (*Gosudarstvennaia kommissiia po priemu studentov*), “Pravila priema v VUZ-y na 2004/2005 uchebnyi god,” in *Abiturient 1*, (2004), <[www.tqdk.gov.az](http://www.tqdk.gov.az)>.

accountability within the system, and has thus improved the quality of secondary school education. On the other hand, the State Commission has seemingly become a vast empire of its own, spinning off for-profit tutoring and exam preparation services—all while the pressure and importance of the exams seems to have contributed to the hollowing out of the secondary school curriculum and attendance. Finally, questions have been raised by various Western and Azeri educators about the quality of the exams themselves.

For all of these myriad problems, there are several innovative reform projects underway in Azerbaijan. Greater effort could certainly be made to publicize those innovations, better coordinate such efforts, and build upon their pilot programs. UNICEF has been working closely with the MOE since 1995, and is especially active in early childhood development and education.<sup>40</sup> Recognizing the financial impossibility of recreating Soviet-era preschool services, part of this program focuses on improving training for parenting skills and helping to form parent–teacher associations in an integrated effort to foster a more child-centered approach. UNICEF has also been active in primary education, where the focus has been on fostering “active learning” instruction and improving methods to monitor the quality of learning achievement.<sup>41</sup> Other UNICEF pilot programs focus on special needs education and children in foster or public care. All of these programs share a common recognition of the acute need to build administrative and professional capacity at all levels of the system as decentralization proceeds. Another focus for UN efforts includes the educational and social problems facing the IDP population, although some experts have felt that the government has continued to exploit the situation politically, allowing IDP students to remain un-integrated and under-served through corruption and indifference.

Other major international assistance efforts include the education programs of the Open Society Institute (OSI), at approximately \$1 million annually, which focus on teacher education, English-language instruction, and working with spin-off NGOs in OSI-signature programs such as Step-by-Step (which is concerned with early childhood education), Reading and Writing for Critical Thinking, and the Debate Program (which seeks to enrich teaching in civics and social studies). Other coordinated efforts include the creation of the Azerbaijan Research Educational Network Association (AzRENA), which is an effort to create a common electronic infrastructure for information technology and is sponsored by NATO, OSI, the

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<sup>40</sup> UNICEF, *Early Childhood Care and Development in Azerbaijan: Creating a Vision*, Baku: UNICEF and Ministry of Education of the Republic of Azerbaijan, 2002.

<sup>41</sup> UNICEF and UNESCO, *The Quality of Primary Education in Azerbaijan*, Baku: Authors and the Ministry of Education of the Republic of Azerbaijan, 2002.

United Nations Development Program (UNDP), and the Azeri National Academy of Sciences.<sup>42</sup> The British Council, together with OSI and the U.S. Department of State (DOS), have focused on teacher training and creating an autonomous professional association for English-language teachers, an initiative that could become a model for other in-service professional development networks. Other DOS programs include Freedom Support Act (FSA)-funded educational exchanges and university partnerships, as well as the popular and widely used Internet Access and Training Program (IATP) sites. USAID-funded education programs remain modest, although efforts have been made to coordinate closely with the Peace Corps and related democracy programs, and sophisticated assessments of local needs have already been conducted. Worthy of note is that international as well as Azeri educators and students both consider the various U.S. government-funded programs to be highly productive and widely appreciated, even as they remain modest and funding declines. An especially innovative step in Azerbaijan has been to bring many of these programs together into a permanent U.S.-Azerbaijan Education Center in central Baku. Major exchange programs have also been created by the Turkish government, and direct services have been provided by Turkish Islamic charities associated with the Fetullah Gulen movement.<sup>43</sup> This movement is, moreover, also funding a new suburban campus outside of Baku in Khirdalan for the Caucasus University, a move intended to draw in undergraduates from the entire region. These Turkish efforts are, however, very poorly coordinated with U.S., European, and multilateral efforts. In conclusion, while many of these small initiatives and assistance programs are promising, the overall international financial commitment to such programs remains modest, and donor coordination is still limited or poor. One respondent noted that approximately \$250 million is spent annually in the Azeri educational system either by the Ministry and local authorities or by parents in the form of school fees and university tuition; this figure obviously dwarfs the modest amount of international assistance. Thus one key to systemic reform is to coordinate external programs in a more effective manner in order to leverage, catalyze, and make transparent the flow of these internal resources.

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<sup>42</sup> Azerbaijan Research Educational Network Association, <[www.azrena.org](http://www.azrena.org)>.

<sup>43</sup> B. Balci, "Fetullah Gulen's Missionary Schools in Central Asia and their Role in the Spreading of Turkish and Islam," in *Religion, State and Society*, vol. 31, no.2 (2003), pp. 151–177. The Turkish Islamist movement of Fethullah Gulen is one of the most interesting examples of liberal Islamist thinking in the Middle East. Gulen and his followers have tried to produce a religious-political movement favoring modernism, Turkish nationalism, tolerance, and democracy without sacrificing religious precepts. The structure and philosophy of this movement and its leader have been manifested in many groups and educational institutions. Part of the Turkish secularist elite views Gulen as a progressive development, though others see him as a threat in moderate garb. *Middle East Review of International Affairs*, vol. 4, no. 4 (December 2000), <[www.biu.ac.il/SOC/besa/meria/journal/2000/issue4/jv4n4a4.html](http://www.biu.ac.il/SOC/besa/meria/journal/2000/issue4/jv4n4a4.html)>.

### ***Kazakhstan***

The situation in Kazakhstan over the past decade has been similar to that in Azerbaijan: the country has been plagued by neglect and inertia in educational policy, endemic corruption and declining instructional quality, and tensions over bilingual education and the use of Russian as a second (or first) language. While Kazakhstan should have solid economic prospects due to its vast energy resources, the country faces similar potential problems as Azerbaijan: unresolved political tensions surrounding a patently undemocratic dynastic succession, a weak and compromised parliament, levels of corruption and cronyism within the “privatized” economy which have left the system utterly dysfunctional, and an atrophied civil society and increasingly stifled independent media.<sup>44</sup> All of these problems are combined in Kazakhstan along with such other issues as a significant out-migration of both the Slavic population and the technical intelligentsia, a decrepit if still relatively functional industrial sector, and latent ethnic tensions, especially along the northern border with Russia.

As in Azerbaijan, there was also a drift toward privatization and fee-for-service provision in Kazakhstan, especially in higher education. This move was then arrested in 1999–2000 by government intervention, allegedly to shut down unscrupulous providers. This clampdown led to a new Law on Education in 1999, a new State Education Program, and a new university accreditation system in 2001.<sup>45</sup> This so-called reform effort also entailed sharply scaling back the number of students in higher education that are supported by state stipends (i.e., “budgetary” students), all in the name of efficiency and austerity, and thereby compelling a majority to pay or supplement their tuition on a contract basis. As in Azerbaijan, such problems eventually forced both the Ministry of Education and Science (MOES) and the presidential apparatus to admit to the urgent need for systemic reform, a recognition which has in turn led to a recent rise in international assistance. The Kazakh government has made at least a rhetorical commitment to tapping the national oil fund in order to finance such comprehensive reform. The Asian Development Bank (ADB) has recently estimated that these efforts will require a minimum of \$600 million in additional funding for 2005–2009.<sup>46</sup>

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<sup>44</sup> M. B. Olcott, *Kazakhstan: Unfulfilled Promise*, Washington, D.C.: Carnegie Endowment for International Peace, 2002.

<sup>45</sup> Ministry of Education and Science of the Republic of Kazakhstan (MOES), *Zakon “ob obrazovanii,” Respubliki Kazakhstan*, Astana: Dastan and MOES, 2000; and T. S. Sad’ykov, *Vysshaia shkola Kazakhstanana na puti reform*, Almaty: MOES, 2000. Worthy of note is that some accusations have been made that certain officials have sought to manipulate this process in order to elevate a handful of elite state universities at the expense of smaller private and less-distinguished public institutions.

<sup>46</sup> Asian Development Bank (ADB), *Education Sector Development Strategy: Synthesis Report (Draft)*, Astana: ADB, Republic of Kazakhstan Ministry of Education and Science, and British Council, 2004.



Work by Vladimir Briller has highlighted both the depth of the systemic problems and the acute need for new reform measures.<sup>47</sup> Briller notes the relative strength of private education in the country, which has come in the form of private secondary schools and Turkish lyceums (both state-sponsored and private Fetullah Gulen schools). Also key is the higher educational sector, although this seems to be largely an elite phenomenon that reflects the sharp social stratification that has occurred since independence. Briller also notes that the secular educational system has tended to ignore or marginalize religious instruction, which has presumably contributed to the growth of mosque-based and private Islamic education, especially in the south of the country. However, this growth in religious educations has been carefully monitored by the government, which reportedly shut down a Kuwaiti-funded university in Shymkent recently for alleged ties to extremist elements. Briller also notes that Kazakhstan is the only country in the region where Hizb-ut-Tahrir is not formally banned, although intense state pressure certainly exists on any such overt political activity, especially among university students.

Unfortunately, also prevalent are all the systemic problems found elsewhere in the region. These include declining social equity and instructional quality, corruption so severe that international accrediting agencies have recently refused to recognize the validity of Kazakh university degrees, poor articulation with labor markets, weak professional capacity for educational policy research and evaluation, and administrative incapacity at all levels. The Kazakh government became determined not to accept any more multilateral loans or assistance programs in the late 1990s, and in fact cancelled both a World Bank loan for public health reform and an ADB education loan in 2000–2001. However, after the occurrence of the shift in state policy described above, the MOES then received a \$600,000 grant from the ADB to develop a national education sector strategy in 2003—a project which also drew funding and technical support from the Soros Foundation Kazakhstan and the British Council to help develop the ambitious new reform concept.<sup>48</sup> In education, the World Bank in Kazakhstan is now focused on providing policy dialogue and knowledge transfer, and both the ADB and the World Bank are now discussing large potential packages of loans and grants in support of the new reform program. This new program is focused particularly on developing human capital and improving the alignment of the educational and technical training systems with the needs of the labor market.

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<sup>47</sup> V. Briller, “Secular and Religious Education Development Trends in Kazakhstan,” unpublished country study prepared for NBR Central Asia Education Study 2003–2004, Seattle, Wash.: The National Bureau of Asian Research, 2004.

<sup>48</sup> MOES, *Republic of Kazakhstan Education System Development Concept*, Astana: MOES, 2004.

The new government reform program seeks to consolidate twelve years of basic education, with the last two years segmented into either a preparatory track for university study or vocational-technical training. Efforts will be made to revitalize early childhood and general education, education for special needs, VET, teacher education, and in-service professional development. This reform process will require the elaboration of a comprehensive system of national exams and learning assessments by the Center for State Standards in Education and Testing and a new Center for Education Quality Assessment. The reform program also requires the articulation of new state content standards,<sup>49</sup> new “outcomes-based” curricula, and the creation of new textbooks and teaching guides—all of which will be coordinated by the Alt’ynsarin Kazakh Academy of Education in Almaty. These ambitious actions suggest a very sophisticated attempt to shift the system away from centrally dictated Soviet-style “inputs” and toward the cultivation of student skills and a focus on learning outcomes and student engagement.<sup>50</sup> There is also a stated commitment to participate in such international student assessments as the OECD’s Program for International Student Assessment (commonly known as PISA) in 2006, although there seems to be little realistic sense of how profound a transformation would be required on Kazakhstan’s part.

In the sphere of higher education, the new reform program seeks to consolidate redundant institutions, eliminate substandard private or foreign providers, and create an elite stratum of state institutions to lead policy development in the sector. This move will also entail the reform of these elite institutions through international partnerships and the development of new collaborative doctoral and research programs<sup>51</sup> and a shift to a four-year baccalaureate, a two-year master’s degree, and a four-year doctoral degree based on the western model. A decree was issued in 2003 to shift over by September 2004 to a credit hour system.<sup>52</sup> A major impetus of this move was to better prepare to enter both the Bologna Process of European higher educational integration and the European Credit Transfer System (ECTS). Yet again, few educators or administrators seem to fully understand the profound implications of such a shift for both teachers and students; though unrealistic, such aspirations can drive constructive pressure for educational policy reform. Financing has also shifted to a student voucher system

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<sup>49</sup> MOES, *Obrazovatel’nye standarty obshchego srednogo obrazovaniia Respubliki Kazakhstan: sostoianie, poisk i perspektivy*, Astana: MOES and Soros Foundation Kazakhstan, 2003.

<sup>50</sup> J. D. Willms, et al., *Student Engagement at School: A Sense of Belonging and Participation. Results from PISA 2000*, Paris: OECD, 2003.

<sup>51</sup> A. A. Nuramgambetov, *Obrazovatel’naiia politika Respubliki Kazakhstan v kontekste transformatsii sistemy vysshego obrazovaniia*, Almaty: Kazakh Al-Farabi National University, 2002.

<sup>52</sup> O. N. Kuznetsova, Zh. T. Kolbasarov, L. S. Timoshenko, and N. V. Muraviev, *Kreditnaia sistema obucheniia v vuze: Struktura, protsedury, I organizatsiia*, Almaty: International Academy of Business, USAID, EdNet, and Carana Corporation, 2004.

that funnels state funds directly to students rather than to institutions, in the hope of both limiting corruption in the admissions process and increasing transparency. Finally, a system of student loans for higher education has also been established.

Additional international assistance programs have come into being through the significant efforts of the Soros Foundation Kazakhstan, including spin-off NGOs for Step-by-Step, RWTC, and a new Education Development Center. Other efforts include DOS-supported educational exchanges and university partnerships, such as a highly successful English-Language Fellows (ELF) program that works in rural villages and a new Village Language Program that provides a visible alternative to Islamic missionary efforts. Other bilateral programs, especially from European donors, support university management reform and student exchanges. UNICEF, with expenditures of approximately \$1 million per year in Kazakhstan, has built highly successful programs in maternal and infant health and in early childhood care and education, and has undertaken coordinated efforts to involve students and parents in school councils and protect children and young adults at risk of abuse or delinquency.<sup>53</sup> The most prominent international collaborations in the higher educational sector are the Kazakhstan Institute of Management, Economics, and Strategic Research in Almaty; the Hoja Akhmed Yassawe Kazakh-Turkish University in Turkestan; the Turkish-funded Suleyman Demirel University in Almaty; the new Kazakh-British Technical University in Almaty, the latter funded by British Petroleum (BP) and an array of corporate sponsors; the Gumilev Kazakh-Russian Eurasian University in Astana; and a Saudi-funded Kazakh-Arabic University in Shymkent. Several respondents noted that U.S. government-funded educational exchanges and university partnerships, because of their short-term nature and limited funding, pale in comparison with such ambitious projects.

Despite all these ambitious reform plans and international partnerships, enrollment trends in Kazakhstan (as is the case throughout the region) are mixed, and even quite bleak in some areas. For example, pre-primary enrollments (ages 3-6) declined from 53.1 percent of the age cohort in 1989 to 13.9 percent in 2001; elementary enrollment, at least according to official statistics, actually increased from 95 percent to 100 percent in that same period; general secondary enrollments held steady from 32.5 percent in 1989 to 31 percent in 2001; vocational-technical secondary enrollments declined from 43.6 percent to 23.3 percent; and higher educational enrollments, again largely because of the surge in commercial providers, rose from 18.1 percent to 33.4 percent.<sup>54</sup>

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<sup>53</sup> UNICEF CARK, *Report, Second Central Asian Republics and Kazakhstan Education Forum*, Bishkek: UNICEF CARK, 2003.

<sup>54</sup> UNICEF, *Innocenti Social Monitor*.

Although such trends are not overwhelmingly negative or positive, there are two developments that have taken place in Kazakhstan over the recent year that are potentially encouraging. First, after a decade of drift and inertia rationalized by grand rhetoric about “market forces” and “spontaneous” decentralization, the Kazakh state finally seems to be reasserting both its policy authority over and financial responsibility for educational development. A second and even more significant development is that the MOES seems to be taking on its responsibilities in such a way that could result in the formation of true partnerships with leading Western and multilateral organizations. However, serious questions remain on such issues as whether the MOES can articulate a coherent reform strategy or develop the new institutional structures to foster and monitor high-quality innovation, and whether the president will follow through on his promise of significant financial support. While the stated goal of better satisfying the career aspirations of the nation’s youth is certainly laudable, one must ultimately ask whether the regime is sincere in its rhetorical commitment to student empowerment and democratic civic education, and to a strong role for the NGO sector in education. Finally, within the educational system, significant questions remain whether such entrenched interests as school directors and university rectors can either be neutralized or brought into the reform process, whether the professional capacity exists among the underpaid and overworked teachers to implement such ambitious reforms, and whether the more traditional teachers, parents, and communities will embrace these concepts. Despite these obstacles, the Kazakh educational reform program could, even if only partially successful, become a model for all of Central Asia, allowing Kazakhstan to move forward in its aspiration to regional leadership.

### *Kyrgyz Republic*

Trends in secular educational development in Kyrgyzstan present an extremely mixed picture. On the one hand, the most supportive domestic policy environment in the region has led to some dramatic educational innovations (especially between 2000 and 2002), a significant level of international assistance, and a relatively vital NGO sector. On the other hand, acute economic isolation and severe poverty, fractious and occasionally violent regional politics, and ministerial-level intrigues and incapacity threaten all of these accomplishments. Despite initial hopes for improvement, the educational policy and broader political scene is deteriorating. Hard questions thus must be asked whether further international assistance—

especially loans—will improve the situation in the educational sector, or merely deepen dependency and the crushing burden of external debt. A disproportionate amount of international assistance has allowed exclusive patron-client relations to develop in ways that inhibit cooperation across the sector, and has allowed the Kyrgyz government to avoid some of the hard choices that must be made.<sup>55</sup> As detailed below, there may well be a profound and irreconcilable tension between what is needed for systemic reform and the ability or willingness of a weak state to embrace those measures. While there clearly exists both official interest in reform and some real professional capacity in the sector, the steady loss of talent through brain drain and labor migration is working to erode this potential.

Work by Vladimir Briller paints a dismal picture of secular education in Kyrgyzstan, and notes that of approximately 2,050 schools, a mere 50 are fully functional and reasonably well-funded.<sup>56</sup> Official funding for education at all levels has plunged, and a shadow system of fee-charging or quasi-private services has emerged as an elite track within secular secondary schools and universities. These same 50 leading schools receive much of the international assistance and function as “pilot” or “experimental” sites. Teachers’ salaries are abysmally low, and the average age of the teaching corps is a staggering 56. With the exception of isolated international programs, there is no funding for in-service professional development. There is also an acute infrastructure crisis, an acute lack of standards for the hiring and conduct of school directors and educational administrators, and incoherence, incapacity, and corruption in school finance generally.<sup>57</sup>

Overall, the available data on enrollment trends in Kyrgyzstan are contradictory. For example, pre-primary enrollments have declined from 31.3 percent in 1989 to only 9.0 percent of the age cohort in 2001; general educational enrollment has seemingly risen slightly from 92.2 percent to 95.2 percent in that same period; while general secondary enrollment fell from 36.7 percent to 24.5 percent and vocational-technical enrollment plunged from 28.3 percent to 11.9 percent over those same twelve years, due in part to the fact the government only requires attendance through grade nine. In a pattern seen through much of the region (and again driven largely by the proliferation of providers and keen student interest) higher educational enrollments have risen from 13.2 percent to 37.4 percent, although serious questions

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<sup>55</sup> Richard A. Slaughter, “Poor Kyrgyzstan,” in *The National Interest* (Summer 2002): pp. 55–65.

<sup>56</sup> V. Briller, “Secular and Religious Education Development Trends in Kyrgyzstan,” unpublished country study prepared for NBR Central Asia Education Study 2003–2004, Seattle, Wash.: The National Bureau of Asian Research, 2004.

<sup>57</sup> S. D. Rysaliev, and G. A. Ibraeva, *Educational Financing and Budgeting in Kyrgyzstan*, Paris: UNESCO International Institute for Educational Planning, 1999.

remain about the quality of much of that instruction and its relevance to the labor market.<sup>58</sup> The situation is also deteriorating badly in terms of social and gender equity.

Predictably, this steady decline in the capacity and quality of the secular educational system is driving a move toward private Islamic and boarding schools, at least in the rural and southern regions, although this problem remains under-researched. The World Bank has noted that the high percentage of the population in rural schools, now reaching approximately 65 percent, poses special challenges given that such schools were weak to begin with, are quite expensive to maintain with small class sizes and widely scattered facilities, and depend upon exceptionally weak financial foundations in their poverty-stricken locales. While higher educational enrollments in Kyrgyzstan have risen, this trend has been driven in part by the patent inadequacy of secondary schooling and in part by the emergence of often-dubious “tertiary” providers and “contract” programs. As noted above, this looming crisis generated a significant investment of international resources in the late 1990s, although the results of those reform efforts offer cautionary lessons as well.

The picture that emerges of the struggle to enact a new comprehensive reform program in 2001–2002, led by then Minister of Education Camilla Sharshekeeva, is striking for its high drama, conflicting interests, often ill-informed donor advice, and institutional parochialism.<sup>59</sup> The fundamental principles of the new reform conception included efforts to modernize primary and secondary curricula, especially designs to enrich the teaching of Kyrgyz language and culture. Also key were corresponding efforts to improve teacher education, although seemingly with little input from the pedagogical higher educational institutions.<sup>60</sup> The plan also included efforts to make educational finance more rational and transparent, and to compel the re-training of school directors and educational administrators in an effort to limit cronyism and corruption. All these efforts were to be driven by fundamental reform within the Ministry of Education and Culture (MOEC) designed to improve such areas as ministerial capacity in policy planning, the generation and use of statistical information, and the ability to regulate an increasingly decentralized system. The proposed reforms in the higher educational sector were

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<sup>58</sup> UNICEF, *Innocenti Social Monitor*.

<sup>59</sup> A. De Young, “On the Demise of the “Action Plan” for Kyrgyz Education Reform,” in Heyneman and De Young, eds., *The Challenges of Education in Central Asia*, pp. 199–224.

<sup>60</sup> Ministry of Education and Culture of the Kyrgyz Republic (MOEC), *Kontsepsiia razvitiia obrazovaniia Kyrgyzskoi Respublike do 2010 goda*, Bishkek: MOEC, 2002; C. Sharshekeeva, *Kontsepsiia reformirovaniia obrazovaniia v Kyrgyzskoi Respublike*, Bishkek: Ministry of Education and Culture of the Kyrgyz Republic, 2002.

even more radical, and included efforts to create independent boards of trustees to oversee rectors, the creation of a new system of independent university entrance exams to limit corruption in the admissions process, independent audits to expose corruption in university management, sweeping curricular reform, and efforts to “rationalize” and consolidate redundant or ineffective institutions. Predictably, these radical measures met a storm of protest from such actors as entrenched rectors and faculties who felt acutely threatened by these proposed changes. Equally predictably, this resistance led to the firing of Sharshkeeva in May of 2002.

The subsequent course of reform has been erratic, although a few key elements of this reform agenda were successfully implemented. The most notable success was the creation of a new National Scholarship Test for university admissions, funded by USAID and implemented by the American Councils for International Education (ACIE or ACTR/ACCELS), together with the Educational Testing Service (ETS) and others.<sup>61</sup> This test was first administered to approximately 14,000 students in June 2002, expanded to include 52,500 students in May 2003, and has since established itself as both a legitimate measure of school effectiveness and a politically popular mechanism to regulate university admissions more effectively. One must also note, however, that state funding is so dismal that only a tiny percentage of the best students receive either full scholarships or other budgetary support; this conspicuous lack of support compels the majority of students back into the world of paid tuition and contract status.<sup>62</sup> Nonetheless, the National Scholarship Test is an important achievement, one that can be further bolstered if the other elements of a comprehensive reform process can be brought into being around it. One such element would be a parallel system of student assessments at earlier grade levels. Supporters of this program should perhaps also be wary of the cautionary tale of the State Commission for Students Admission in Azerbaijan, and the ways in which such an autonomous exam system can become a fiefdom of its own and work at cross-purposes with the struggling secondary school system.

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<sup>61</sup> T. Drummond and A. De Young, “Perspectives and Problems in Education Reform in Kyrgyzstan: The Case of National Scholarship Testing,” in Heyneman and De Young, eds., *The Challenges of Education in Central Asia*, pp. 225–242.

<sup>62</sup> As an income-generating activity, many educational institutions in Kyrgyzstan take on students who have otherwise failed to qualify for free or subsidized university seats, on a fee-paying “contract” basis. However, a significant drawback of this practice is that “instituting contract places in public universities blurs the distinction between public and private, and often provides an incentive for the best faculty to teach the least-qualified contract students because of the financial advantage it provides. See M. Mertaugh, “Education in Central Asia, with Particular Reference to Central Asia,” in Stephen P. Heyneman and Alan D. Young, eds., *The Challenge of Education in Central Asia*, Greenwich, Conn.: Information Age Publishing, 2004, pp.158–159.

Since 2002 the locus of reform in Kyrgyzstan seems to have shifted away from the MOEC and into the hands of various donors and external interests, players who continue to work to influence the Ministry and who exercise disproportionate influence given the poverty of the Kyrgyz state. In fact, Kyrgyz educators and policymakers often express their frustration that donors seem to fixate on their own pre-designed agendas, do not cooperate with one another very smoothly, and spend lavish sums on outside consultants who often have little sense of either local particularities or indigenous pedagogical traditions. More positively, the U.S. Embassy has funded efforts to foster academic honesty and create student honor councils, the International Foundation for Electoral Systems (IFES) and USAID have sponsored innovative efforts in civic education,<sup>63</sup> UNICEF has focused its programs on emergency poverty alleviation and early childhood care and education, and OSI (with funding for its own programs of approximately \$600,000 per year) has also become a major partner for the USAID-funded Participation, Education, and Knowledge Strengthening (PEAKS) project. As throughout the region, PEAKS has sought both to build on OSI and UNICEF programs and to forge better working relationships with the MOEC. The PEAKS program is a coordinated and systematic effort to support school renovation, foster site-based management in schools, improve teacher education and in-service professional development, promote curriculum reform, and encourage community participation. To date, the PEAKS project has attempted to focus all of these efforts through targeted professional development schools (PDS), which will then seek to activate clusters of surrounding schools.

The ADB has made several significant loans in Kyrgyzstan (most notably a loan of \$31.3 million for 2000 to 2005) for educational policy development, administrative reform, and especially for the reform of VET and the encouragement of entrepreneurship among young adults,<sup>64</sup> although this loan process was coordinated through the Ministry of Labor and Social Protection and not the MOEC. Other recent ADB efforts have focused on textbook publishing, creating a textbook rental scheme, and quality monitoring. One must note, however, that serious questions have been raised about the quality of these texts and tests—predictably enough, given not only the chronic weakness of the Kyrgyz Institute of Education (KIE) but also the problems in educational policy research, publishing, and curriculum development. Other critics have suggested that the textbook rental scheme went badly awry, and only exac-

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<sup>63</sup> A. Alishева, *Grazhdanskoe obrazovanie v Kyrgyzstane: problemy i perspektivy. Materialy konferentsii 14-15 ianvariia 2002 goda*, Bishkek: Institute for Regional Studies, 2002.

<sup>64</sup> Asian Development Bank (ADB), *Kyrgyz Republic Country Strategy and Program 2004–2006*, Bishkek: ADB, 2003.



erbated inequality in the sector, and that other ADB programs have been hampered by corruption in procurement and implementation.

The World Bank is now preparing a significant new grant in support of systemic reform in Kyrgyz education,<sup>65</sup> which will combine direct grants for education with related loans in support of structural adjustment. The locus of this effort, the Rural Education Project (\$15 million proposed for 2005–2009), is focused on creating performance-based teaching incentives and salary supplements for rural teachers, improving school management and efficiency, offering direct grants to schools to enrich teaching and learning through the purchase of equipment and professional development, and direct grants for the purchase of textbooks and teaching materials. Additionally, the World Bank will sponsor new initiatives in monitoring and assessment, to allow for full participation in the 2006 PISA, to provide continued support for the National Scholarship Test after the end of USAID funding in 2005, and to support the creation of a comprehensive new Education Management Information System (EMIS) program and greater policy and evaluation capacity within the MOEC. While the project has been exceptionally well designed, the same political issues arise as in earlier reform programs. On the one hand, there is an inexorable need for greater efficiency in the system, which can only be achieved by reducing the number of staff, increasing class sizes, raising teaching norms, and consolidating institutions—then rewarding the remaining faculty and staff with higher salaries. On the other hand, such proposals generate fierce resistance from administrators and teachers, and the complexity of implementation may well be beyond the capacity of the already dysfunctional educational system.

Finally, while from one perspective Kyrgyzstan has profited from a dynamic higher educational sector with the number of students and institutions growing, this has also arguably led to overcapacity, often-dysfunctional rivalries, and uneven standards. For example, even as the Kyrgyz State National University struggles to reform, it is hard pressed to compete with the truly excellent and well-funded Kyrgyz-Russian Slavonic University, which is subsidized by Russia; the innovative American University of Central Asia, which seems to have overcome a recent bitter internal political struggle; and the rising Kyrgyz-Manas Turkish University, which is building a new \$140 million campus. Bishkek is also crowded with numerous state and private Kyrgyz “universities” such as the International University of Kyrgyzstan, the Ala-Too Kyrgyz-Turkish University (Fetullah Gulen), a new Kuwaiti-funded university, and a proposed

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<sup>65</sup> World Bank, *Kyrgyz Republic Public Expenditure Review. Fiscal Policies for Growth and Poverty Reduction*, 2 vols. Washington, D.C.: World Bank, 2004.

new Chinese university. This profusion of providers could create constructive competitive pressures and opportunities for useful interaction, although it seems to be leading in practice to ethnic fragmentation and often-cutthroat competition for students and tuition revenue. While the MOEC is attempting to implement the shift to a credit hour system and other measures intended to promote integration into the Bologna Process, the World Bank and others have argued that the sector is badly in need of “triage,” an effort to reduce both inflated admissions and the number of institutions before any meaningful gains in quality can be achieved.

All in all, trends in secular educational development in the Kyrgyz Republic are extremely mixed. On the one hand, there is an extraordinary profusion of new institutions, innovative pilot projects such as PEAKS, and a significant international commitment, although it remains to be seen whether all of this will cohere into a comprehensive and sustainable reform process. Most important, it is unclear whether the MOEC will be able to generate the capacity to articulate and implement systemic reform, and whether the state can muster the political will and financial resources to either overcome or co-opt entrenched interests throughout the system. Finally, as in Tajikistan, all of this represents a real race against time, as the continued degradation of the secular educational system is clearly also fueling flight out of the system, for elites into study abroad and private institutions, and for the mass of the population into non-attendance, labor migration, and, at least in some regions, into Islamic institutions.

It should be noted that the following three sections are necessarily brief and more general in their analysis, and rely more directly on the country reports prepared for this study, in contrast to the three previous sections which were supplemented by the author’s own field research and interviews.

### *Tajikistan*

The situation in Tajikistan is by far the most severe in the region as regards the depth of mass poverty, the weakness of the state and ministerial authority, and regional fragmentation. Tajikistan was the poorest republic even in the Soviet era and was massively dependent on federal subsidies, and ranked in the bottom tier down with Moldova in educational development, especially in secondary enrollments and tertiary education and research. Much of this already fragile capacity was then shattered during the civil war of 1992–1997, and the situation has remained unstable in part because of the ongoing violence and the massive drug trade flowing out of Afghanistan. Both domestic and international attention on the depths of this

systemic crisis seemed to be focused by the preparation for the UN's Education for All (EFA) process in 1999,<sup>66</sup> and by a belated recognition of the importance of trying to sustain the tenuous national reconciliation and reconstruction processes begun after 1997.

As detailed in the country report for this study by Iveta Silova,<sup>67</sup> all of the same problems prevail in Tajikistan as throughout the region, only more severely so, such as deteriorating infrastructure, dismal teacher salaries and frequent arrears, rampant corruption, frequent absences and non-attendance (especially for girls), and chronically inadequate and disorganized financing.<sup>68</sup> More specifically, pre-primary enrollment rates have declined from 16.0 percent in 1989 to 5.9 percent in 2001; and from 94.1 percent to 91.1 percent in general educational enrollment, which has arguably been sustained largely by infusions of international assistance. However, general secondary enrollments declined from 40.4 percent to 21.1 percent; and vocational-technical enrollments similarly fell from 19.7 percent to 8.0 percent over that same period.<sup>69</sup> There has also been a massive out-migration of young people and skilled professionals, and the system has had great difficulty in hiring or retaining young teachers with sufficient qualifications. As in Kyrgyzstan, while there has been a nominal rise in higher educational enrollments, from 11.5 percent in 1989 to 11.9 percent in 2001, this also reflects the weakness and irrelevance of secondary training, and the lack of adequate regulatory mechanisms to screen unqualified providers.

In response to this crisis, there has been a significant level of international support, including the usual programs from UNICEF, OSI, and USAID, the latter especially through the PEAKS program. The ADB has committed a loan (\$7.5 million for 2003–2008) and a related grant (\$2 million for 2004–2008, funded by Japan) for its Education Sector Reform Project

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<sup>66</sup> Ministry of Education of the Republic of Tajikistan, *The EFA 2000 Assessment: Country Report for Tajikistan*, Dushanbe: MOE, 2000, <[www2.unesco.org/wef/countryreports/tajikistan](http://www2.unesco.org/wef/countryreports/tajikistan)>.

<sup>67</sup> Iveta Silova was part of the NBR Central Asia Education Study 2003–2004 research team, responsible for the Tajikistan education country study. She received her Ph.D. in Comparative Education and History/Political Science from Columbia University, and has extensive experience in international education development. She has served as a consultant on education in Central Asia and the former Soviet republics for a number of international organizations, including OSI/Soros Foundation and UNICEF.

<sup>68</sup> Iveta Silova, "Youth, Education, and Religion in Tajikistan: Secular and Religious Education Development Trends since 1991," unpublished country study prepared for NBR Central Asia Education Study 2003–2004, Seattle, Wash.: The National Bureau of Asian Research, 2004; see also I.D. Davlatov and S. M. Mulloev, *Educational Financing and Budgeting in Tajikistan*, Paris: International Institute for Educational Planning/UNESCO, 2000; State Committee on Statistics of the Republic of Tajikistan (SCSRT), *Obrazovanie I nauka: Statisticheskii sbornik*, Dushanbe: SCSRT, 2001.

<sup>69</sup> UNICEF, *Innocenti Social Monitor*.

focused on helping the Tajikistani Ministry of Education (MOE) to develop a national reform strategy, improve donor coordination, and support schools in five pilot rural districts.<sup>70</sup> Additional elements of the ADB support scheme focus on the development of a new EMIS, the creation of new tools for assessment and monitoring, and an open competition for school improvement grants. The World Bank has also sought to exert the dominant leadership role in Tajikistan through the provision of a grant (\$7 million) and a combined loan (\$13 million for 2003–2008) in support of its own Education Modernization Project. This project offers grants to local administrations and schools to bolster attendance and rehabilitate infrastructure, the purchase of school equipment and educational materials, and capacity building within the MOE.

For all of these many problems, significant contributions have also been made to educational development in Tajikistan by the Aga Khan Development Network (AKDN) and the related Aga Khan Education Services (AKES), which have trained university faculty in economics and English, founded model schools in Khorog (as well as in Osh in Kyrgyzstan), and supported the exceptionally innovative Aga Khan Humanities Program. The Aga Khan Humanities Program created teaching guides and classroom materials that sought to bridge Western and Islamic cultures in the arts and humanities, and to foster cross-cultural dialogue.<sup>71</sup> Even more significantly, the AKDN has sponsored the creation of an entirely new network of institutions, the University of Central Asia (UCA, with an initial endowment of \$15 million), with a main campus in Khorog, Tajikistan, and branch campuses in Naryn in eastern Kyrgyzstan, and in Tekeli in southeast Kazakhstan.<sup>72</sup> UCA is focused specifically on the problems and poverty of the mountainous regions of the three nations, will be secular and co-educational, and will house an undergraduate liberal arts college, a master's degree in mountain development, and an extensive program in adult and continuing education. This is an extraordinarily important and innovative effort, essentially an attempt to drive social and economic development in the most underdeveloped regions of these struggling states through innovative, world-class higher education, research, and training. Uniquely, while drawing on international expertise, the university is being built through the training and recruitment of young faculty from the region, rather than relying on expatriate instructors.

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<sup>70</sup> Asian Development Bank (ADB), *Tajikistan Country Strategy and Program 2004-2008*, Dushanbe: ADB, 2003.

<sup>71</sup> R. Keshavjee, "Trials in the Humanities," in Heyneman and De Young, eds., *The Challenges of Education in Central Asia*, pp. 327–356.

<sup>72</sup> For more information see <[www.ucentralasia.org](http://www.ucentralasia.org)>.

Yet again, as in Kyrgyzstan, several nagging questions persist. As vitally important and necessary as all of these international efforts are, will these weak states be able to politically survive the hard choices required, especially in the ADB and World Bank programs, such as the reductions of staff and the consolidation of institutions? Furthermore, will the gains in educational efficiency and quality, necessarily slow and incremental, offset the crushing burden and economic distortions of yet more external debt? In other words, does the new National Education Concept (NEC) of 2002 as developed by the MOE represent a true movement for comprehensive reform from within the Tajik state and society, or is it essentially an artificial process driven by the disproportionate influence of major donors relative to the poverty and incapacity of the Tajik authorities? If the latter is true, then its prospects for enduring success are minimal, and the systemic failure of education in Tajikistan becomes increasingly likely.

### *Uzbekistan*

Uzbekistan represents a very anomalous, and, in ways, tragic picture. As the largest and most powerful nation in the region, Uzbekistan inherited a rich legacy from the Soviet period, especially in higher education, industrial training, and advanced research. Of course, it also inherited catastrophic environmental problems, tangled borders and ethnic relations, and an entrenched political elite who attempted to preserve as much as possible of the command-administrative system well into the 1990s. This fitful and inadequate commitment to political and economic liberalization has led to a slow but inexorable economic decline. The heavy-handed repression of any manifestation of political opposition or religious dissidence has served only to isolate the regime and drive its opponents to emigration, withdrawal from public life, or increasingly desperate acts of terrorism.<sup>73</sup> While embarking on an aggressive program to nationalize curricular content and language policy, in other ways the regime of Islam Karimov essentially attempted to preserve key elements of the Soviet system, especially involuntary vocational tracking and political indoctrination.<sup>74</sup> Yet this effort at enforced stasis will only make systemic reform that much more difficult by continuing to degrade the educational system's professional and intellectual capacity.

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<sup>73</sup> Human Rights Watch (HRW), *Creating Enemies of the State: Religious Persecution in Uzbekistan*. New York: HRW, 2004, <[www.hrw.org](http://www.hrw.org)>.

<sup>74</sup> Ministry of Higher and Specialized Secondary Education of the Republic of Uzbekistan (MOHSSE), *Education for All: Final Report*, Dushanbe, MOHSSE, 2000, <[www.unesco.org/wef/countryreports/uzbekistan](http://www.unesco.org/wef/countryreports/uzbekistan)>.

Kathleen Collins<sup>75</sup> country report for this study details the all-too-routine catalog of educational crises, such as declining quality and social equity, rising tuition and other “informal” payments and endemic corruption, the steady out-migration of the Slavic minority and other members of the technical and educational intelligentsia, and flux in enrollments.<sup>76</sup> More specifically, pre-primary enrollments have declined from 36.8 percent in 1989 to 19.4 percent in 2001; while primary enrollments have, at least according to official statistics, increased from 92.0 percent to 97.8 percent during that time; general secondary enrollments have declined from 36.3 percent to 21.2 percent; and vocational-technical secondary enrollments have similarly dropped from 31.3 percent in 1989 to 19.1 percent in 1999, with no statistics reported for 2000–2001. Higher educational enrollments have also declined from 15.0 percent in 1989 to 7.3 percent in 2001.<sup>77</sup> Despite the infusion of massive ADB loans, as detailed below, capacity remains weak in both the Ministry of Public Education (MOPE) and the Ministry of Higher and Specialized Secondary Education (MOHSSE), and the politics of education and the policy process are almost entirely opaque, with little or no role for NGOs or public opinion.

A decisive attempt at reform came in 1997 with the imposition of the National Program on Personnel Training, an attempt to shift to a nine-year educational system, followed by two or three years of vocational-technical training and/or production work; or by a three-year university preparation track and entry into higher education. However, it seems that much official attention, and multilateral loans, have been lavished on the roughly one percent of students who will enter those elite academic “lyceums,” which is perhaps not surprising in light of the elites’ interest in reproducing their social position. Yet a massive, loan-funded and allegedly corruption-prone construction program for the vocational-technical “professional colleges” has by some accounts been less successful.<sup>78</sup> The National Program on Personnel Training has also been accused of attempting to force narrow and involuntary technical and

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<sup>75</sup> Dr. Kathleen Collins was part of the NBR Central Asia Education Study 2003–2004 research team, responsible for the Uzbekistan education country study. She is assistant professor of political science at the University of Notre Dame, specializing in the politics of the former Soviet Union, especially Central Asia and the Caucasus. She has extensive research experience in the region, and has also served as consultant for USAID, the UN, and ICG.

<sup>76</sup> Kathleen Collins, “Secular and Religious Education Trends in Uzbekistan,” unpublished country study prepared for NBR Central Asia Education Study 2003–2004, Seattle, Wash.: The National Bureau of Asian Research, 2004.

<sup>77</sup> UNICEF, *Innocenti Social Monitor*; see also E. Islamov, “Uzbekistan’s Corruption-Ridden Educational System Seen as a Source of Frustration,” in *Eurasia Insight*, April 29, 2004, <[www.eurasianet.org](http://www.eurasianet.org)>.

<sup>78</sup> Alima Nurlanbekova, “Uzbekistan’s Educational Reform Stalls on Corruption, Inefficiency,” in *Eurasia Insight*, January 19, 2003, <[www.eurasianet.org](http://www.eurasianet.org)>.

semi-professional training, inherited from the Soviet era, onto a fluid and deteriorating labor market, with little apparent success.

The Uzbek government has been wary of international assistance programs, moved to shut down all Turkish-funded schools and higher education scholarships, and has been, predictably enough, extremely hostile to any Saudi or Kuwaiti-sponsored efforts. While DOS-funded exchanges and USAID funded programs like PEAKS are active in Uzbekistan, their local participants face occasional harassment and the possibility of official retribution. In response to the popularity of internationally funded scholarship programs, the state created its own “Umid” program for study abroad,<sup>79</sup> although this was later ended in favor of a semi-private elite institution in Tashkent, the British-supported Westminster International University.<sup>80</sup> The regime recently launched a crackdown and “re-registration” process for all NGOs, and most significantly, rejected the application of the local branch of OSI (which had been supporting educational expenditures of approximately \$1 million per year) and its spin-off NGO which supported the Step-by-Step program in early childhood education. Somewhat inexplicably, the regime did re-register the OSI spin-off NGOs for the Reading and Writing for Critical Thinking programs and the School Improvement programs. Overall, the picture is of a regime nearly consumed by xenophobia and wary of international assistance programs, unless they are offered strictly on its own terms.

Clearly, the preferred international partner for the Uzbek regime is the ADB, which has made a significant loan for its Education Sector Development Program (\$108.5 million for 2003–2007). This has been coordinated with a significant program (\$52 million) from Japan in support of VET and secondary education. The ADB project builds upon its regional expertise, and is focused on implementation of the National Program on Personnel Training, curricular reform, the improvement of teacher education and in-service professional development, the rehabilitation of infrastructure, and improving efficiency and capacity in the sector. This will be achieved through retraining and “redeploying” faculty and staff, reforming the governance of education through the encouragement of community participation and a role for NGOs, and providing special assistance to poor regions and disadvantaged populations.<sup>81</sup> While all of these goals are laudable, several educators in the region have speculated that the Uzbek re-

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<sup>79</sup> D. Mikosz, “Academic Exchange Programs in Central Asia: The First Eight Years,” in Heyneman and De Young, eds., *The Challenges of Education in Central Asia*, pp. 113–128.

<sup>80</sup> For more information, see <[www.wiut.uz](http://www.wiut.uz)>.

<sup>81</sup> Asian Development Bank (ADB), *Uzbekistan Country Strategy and Program Update 2004-2006*, Tashkent: ADB, 2003.

gime might value this partnership because the ADB is more willing to work with the government, and perhaps a bit less inclined than some other international donors like the World Bank and OSI to press on issues of transparency and public participation. It must also be noted that there is a clear pattern of Uzbekistan tilting toward Russia in its foreign relations, and that the U.S. government recently moved in July 2004 to suspend its assistance programs because of concern over the Karimov regime's dismal human rights record.

Overall, for all of these internal problems, the educational sector in Uzbekistan has several real strengths and several acute weaknesses. Strengths include an enduring state commitment to its own understanding of reform, with the highest per capita GDP spending on education in the region (approximately 8.5 percent), the most advanced scientific and technical capacity in the region, and the most developed tertiary educational sector. Weaknesses include the strict limits on private education and autonomous NGOs; acutely weak professional networks and associations; the debilitating effects of state repression among young people, intellectuals, and religious leaders; and deepening poverty and social inequality. As in Turkmenistan, the Uzbek authorities have essentially attempted to preserve much of the Soviet educational legacy and system, yet it is an open question how much longer such a policy of enforced stasis and rigidity can endure.

### *Turkmenistan*

Turkmenistan represents an extraordinarily unique case of a regime that has not only attempted to retain certain elements of the Soviet educational system, but that has arguably gone ever further back to Stalinist policies, complete with lurid xenophobia, frequent purges, and a stultifying cult of personality. This is especially tragic given that Turkmenistan's energy resources could have fueled significant economic and educational reform, and the ways in which its obsessive isolationism has prevented it from playing the constructive regional role that it might have, whether toward Iran, Afghanistan, or its neighbors in Central Asia. In fact, the regional pattern of systemic crisis prevails, but with little or no sense of a way out in the Turkmen case. Academic quality seems to be declining steadily throughout the educational system, there are allegations of endemic corruption, seemingly gross inefficiency in finance and educational administration, steadily declining enrollments and rising non-attendance, and sharp declines in social and gender equity. More specifically, pre-primary enrollments have declined from 33.5 percent in 1989 to 21.4 percent in 2001; general educational enrollments have



declined from 91.2 percent to 79.9 percent; general secondary enrollments from 41.7 percent to 24.9 percent, and vocational-technical secondary enrollments have plunged from 25.1 percent to 5.4 percent.<sup>82</sup> Most strikingly, higher educational enrollments declined from 10.2 percent of the age cohort in 1989 to 2.7 percent in 2001. The regime moved to limit the educational system to nine years, followed by vocational-technical training or two years of “productive labor” and an elite academic track only for the very select few, allows no tertiary education beyond undergraduate study, and essentially shut down the national Academy of Sciences and most of its research institutes. This suggests a deliberate attempt to force down educational expectations and achievement, combined with severe and systematic repression against any manifestation of political or religious dissidence.<sup>83</sup>

As described in Victoria Clement’s<sup>84</sup> country report that was prepared for this study, this all presents a stunning picture of a regime deliberately rejecting international standards, systematically marginalizing its minority populations through the rejection of “foreign” diplomas and Russian-language education, and the relentless imposition of state ideology across the curriculum.<sup>85</sup> While admittedly the process of “Turkmenification” has generated some real support for the regime among the titular nationality and some limited opportunities for upward mobility, the larger picture of economic stagnation and political isolation must ultimately prove unsustainable. While the U.S. government maintains a minimal presence of DOS-funded educational exchanges, and a small program through the USAID-funded PEAKS, neither the ADB nor the World Bank has a presence in Turkmenistan and bilateral assistance for education remains negligible. There are, occasionally, tiny glimmers of hope, although these seem to testify more to the capriciousness of the regime than to any real interest in reform. For example, the government recently approved the opening of a new National Business Academy, affiliated with the USAID-funded EdNet, and supported by the Union of Entrepreneurs in Ashkhabad. This Academy will support faculty development, curricular reform, and instructional support in business and economics. Overall, however, the trends are exceedingly grim.

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<sup>82</sup> UNICEF, *Innocenti Social Monitor*.

<sup>83</sup> Commission on Security and Cooperation in Europe (CSCE), *The State of Democratization and Human Rights in Turkmenistan*, Washington, D.C.: CSCE, 2001.

<sup>84</sup> Victoria Clement was part of the NBR Central Asia Education Study 2003–2004 research team, responsible for the Turkmenistan education country study. She is a doctoral candidate in Ohio State University’s Russian and East European History program, and has conducted extensive research in Turkmenistan and Russia. Her dissertation examines the role of the classroom as a site for transmission of culture, and the role of culture in defining society in Turkmenistan.

<sup>85</sup> Victoria Clement, “Trends in Secular and Religious Education in Turkmenistan,” unpublished country study prepared for NBR Central Asia Education Study 2003–2004, Seattle, Wash.: The National Bureau of Asian Research, 2004.

There is no private educational provision allowed, there is no viable NGO sector, there is little or no international assistance or leverage in the policy process, and the secular educational system in Turkmenistan seems to be on an inexorable downward trajectory with no alternative in sight.

### **The Effects and Potential Role of International Assistance Programs**

In light of the negative trends in secular educational development across the Caucasus and Central Asia, and the steady decline in domestic educational funding, international assistance programs play a disproportionately important role in the region. Overall, there is striking evidence of some very real successes in bilateral and multilateral assistance programs. However, assistance programs are also too often poorly coordinated, inadequately funded, sometimes entangled in ministerial intrigues and corruption, or work at cross-purposes because of geo-strategic rivalries.<sup>86</sup> Common problems seem to be the creation of “virtuous circles,” where donors, recipients, and evaluators all essentially support a given program, rely only on internal or anecdotal evidence in evaluating successes and failures, and thus perhaps fail to understand a given aid program in its larger political and cultural context. Furthermore, while international educational exchanges remain vital, without adequate alumni and other follow-up support upon participants’ return, they may inadvertently contribute to a “brain drain” out of the public sector, out of the profession, or out of the region. This also highlights the vital importance of providing adequate support for programs in country that complement international exchanges, as well as for exchanges within the region, as, for example, USAID is already doing for students to study economics at Kazakhstan Institute of Management, Economics, and Strategic Research, and OSI is doing for undergraduates from around Central Asia to study at the American University of Central Asia (AUCA).

More specifically, World Bank and ADB programs tend to focus on state and ministerial capacity in the educational sector, and try to do so in ways that are linked to larger structural reforms in the public sector in an effort to improve budget management, transparency, and effective decentralization.<sup>87</sup> World Bank and ADB programs also support efforts to develop

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<sup>86</sup> M. S. Johnson, “Systemic Higher Educational Crises, International Assistance Programs, and the Politics of Terrorism in Post-Soviet Central Asia,” in W. Nelles, ed., *Comparative Education, Terrorism and Human Security*, New York: Palgrave Macmillan, 2004, pp. 215–233.

<sup>87</sup> Asian Development Bank (ADB), *Technical Assistance Performance Audit Report on Selected Technical Assistance in the Education Sector in Three Central Asian Republics*, Astana: ADB, 2002, <[www.adb.org](http://www.adb.org)>.

adequate statistical and other information systems for policymaking and effective administration, especially through the creation of integrated Education Management Information Systems (EMIS). World Bank programs have also sought to develop indigenous or national textbook publishing capacity, and new approaches to VET and labor market planning. Overall, some critics have argued that the World Bank now seems to be making more successful efforts to focus on governance, in the name of increasing public participation and transparency in state policymaking; and on empowerment, in the name of giving voice to the poor, ethnic minorities, and other disadvantaged populations. Other critics argue that the ADB, in contrast, too often seems content to collaborate with state and ministerial structures in more traditional ways, with all the predictable accusations of inadvertent corruption, ineffectiveness, and a tendency for programs to be “captured” by parochial or particular interests. That being said, a particularly promising new initiative is the ADB-OSI Central Asia Education Cooperation Network (funded by a \$600,000 grant for 2003–2004) that seeks to build a new electronic database and network to improve donor coordination, policy innovation, and professional development across the region.<sup>88</sup>

Overall, it must also be said that many in the region seem to regret the ways in which United Nations programs, while well-intentioned, too often seem hampered by cronyism and incapacity within the ministerial structures upon which they must necessarily depend. Nonetheless, UNICEF especially has clearly generated a significant presence and real expertise on the ground in the most disadvantaged regions, and has created a coherent reform program focused on early childhood education, creating child-friendly primary schools to sustain and boost enrollments, and monitoring learning achievement as a tool to improve teaching. Other successful UNICEF programs promote participatory school management, gender-sensitive curricula and instructional methods, and community and parental involvement. Yet it must also be said that UNICEF programs are chronically under-funded, and sometimes seem so generic or “universal” in their principles as to feel a bit disconnected or abstract in the context of particular national cultures and their often distinctive pedagogical traditions. Some educators in the region express a similar critique of core OSI programs, many of which essentially spin off from certain “pre-fabricated” templates such as Step-by-Step (early childhood education), Reading and Writing for Critical Thinking (critical thinking), School Improvement (improving school management), and the Debate Program (secondary civics and social studies). There is a widely shared sense that OSI, however well intentioned, often pursues its own “progressive” agenda regardless of the interests of local educators and teachers.

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<sup>88</sup> Asian Development Bank (ADB), *Technical Assistance for The ADB-OSI Central Asia Education Cooperation Network*, Astana: ADB, 2003.

In fact, a similar critique could be made of almost all Western-funded educational programs from UNICEF, USAID, OSI and others that focus on child-centered learning, progressive pedagogical principles, and critical thinking. While all of these practices are vitally necessary to engage children and young people actively in their learning, many local educators argue that these do not correspond well to inherited conceptions of appropriate pedagogy in the region, or to educators' and parents' understandings of appropriate classroom style, the role of the teacher, and classroom discipline. Rather than simply insisting that contemporary progressive methods represent the be-all and end-all of modern pedagogy, and rejecting more traditional or essentialist methods out of hand, perhaps donors and trainers could think more in terms of a mutually respectful dialogue between Soviet-style pedagogy, which had very real strengths, and such new approaches. It has also been pointed out how intensely demoralizing, and often patronizing, it can be to have young Western or Western-trained instructors appear, many of whom have never or only briefly taught in actual classrooms, and present such child-centered programs to older teachers in the Caucasus and Central Asia, as if their own pedagogical training and years of professional experience were utterly meaningless.<sup>89</sup> This observation in fact brings us back to where this report began, to questions of identity formation. National and professional identities are not formed in the abstract, according to some universal values or template, but in very specific, local, and culturally distinctive ways, and they must necessarily be built upon the foundations of indigenous values and local pedagogical traditions. Nonetheless, for all of these concerns about the "fit" of international assistance programs, there is also a widespread sense in the region that UNICEF remains much more effective than UNESCO, which only reinforces the systemic weakness in tertiary education. For example, an effort has been made to create a new UNESCO-sponsored Central Asian Association of Universities (CAAU), but it remains to be seen if this will ever become more than a bureaucratic formality.

Finally, as noted above, there are numerous U.S. government-funded educational programs in the region, many of which have established excellent reputations for their academic integrity and the transparency of their selection processes. These include DOS-funded educational exchanges and university partnerships, as well as direct support for AUCA in Bishkek (which in turn led to a \$10 million endowment for AUCA from USAID to be combined with \$5 million from OSI). Especially innovative and successful efforts include funding for public access Internet sites through the Internet Access and Training Program (IATP); new efforts to

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<sup>89</sup> S. Niyozov, "The Effects of the Collapse of the USSR on Teachers' Lives and Work in Tajikistan," in Heyneman and De Young, eds., *The Challenges of Education in Central Asia*, pp. 37–64.

foster student honor councils and a movement for “academic honesty” to expose corruption, cheating, and plagiarism in secondary and higher education; and assistance to rural and disadvantaged communities through the placement of Peace Corps volunteers and English Language Fellows. USAID is also supporting programs in civic education (\$4 million for 2000–2003 through IFES), and in youth sports and health education (\$2.3 million for 2002–2005). Support is also provided for primary school renovation and equipment through the Community Action Investment Program (CAIP), which is focused directly on conflict mitigation.

The single most significant USAID program is PEAKS (\$12.5 million for 2003–2005), in Kyrgyzstan, Uzbekistan, and Tajikistan, and to a lesser extent in Turkmenistan. PEAKS is being implemented by a consortium including the Academy for Educational Development (AED), Abt Associates, OSI, and SCF US and SCF UK. PEAKS focuses on teacher education and in-service professional development in support of child-centered teaching methods and active learning, innovative curricula and support for textbook publishing, community and parental involvement in educational development, infrastructure improvements, and training for school administrators. PEAKS is also attempting to coordinate its efforts with parallel work by the World Bank, ADB, and UNICEF, and has demonstrated some extraordinary early successes in building partnerships and drawing talented young teachers and students into its efforts, especially in light of the relatively modest funding available and the depth of the problems the program seeks to address.

Other significant USAID-funded programs include the Education Network (EdNet) project in Central Asia (\$8.6 million for 2002–2004), which began with efforts to foster improvements in business and economics education, and has now expanded into broader efforts to improve higher education through implementation of new credit hour systems, training in business ethics,<sup>90</sup> and the provision of fee-for-service courses and certificates in English as a second language, information technology, and business development. EdNet is now seeking to become self-sustaining, and has built a successful network of dues-paying institutional and individual members. As in Azerbaijan, there is also a collaborative effort with NATO, OSI, and UNDP to build a common electronic infrastructure in the region, (for example, in Kazakhstan, as the Regional Education Network Association or KazRENA), all as part of NATO’s “Virtual Silk Road” project. While this is not a complete listing of U.S. government programs in education, the larger point remains that compared to other major donors, and

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<sup>90</sup> B. M. Suzhikova and A. K. Raissova, *Sbornik program obuchenia po prepodavaniiu etiki v vuzakh*, Almaty: EdNet, 2004, <[www.ednetca.org](http://www.ednetca.org)>.

compared to the depth of the problems, U.S. engagement remains modest. Furthermore, recently proposed budget cuts to the Bureau of Educational and Cultural Affairs (ECA) at the Department of State suggest the possibility that only the secondary school exchange (FLEX or the Future Leaders Exchange Program) will survive into 2005.

It should also be noted that there are numerous other bilateral assistance programs in education, especially from European donors, as are detailed regularly by the OECD Creditor Reporting System.<sup>91</sup> Finally, the Organization for Security and Cooperation in Europe (OSCE) has also recently become engaged in educational issues in Central Asia, out of a recognition that educational failure can directly contribute to ethnic and regional conflict, as well as a realization that some of the regimes in the region are exploiting counter-terrorism efforts to increase domestic repression.<sup>92</sup> This initiative has also included the creation of a new OSCE Academy in Bishkek that will support policy-relevant research, professional training, and post-graduate education in negotiation skills, conflict management, and regional security issues.

All in all, it is clear that such international assistance programs, for all of their limitations, have played a vital role in preventing the crises in the secular educational systems from becoming irremediable, have arguably helped to stave off systemic collapse in Kyrgyzstan and Tajikistan, and have contributed in important ways to the process of articulating comprehensive new reform strategies in Azerbaijan and Kazakhstan. These programs have also helped to generate new professional capacity in the region for policy analysis, evaluation, and curricular and instructional innovation. However, it is also clear that much of this aid will continue to be wasted unless and until the governments in the region recognize the urgency of systemic reform, and the political leadership fully engages in mobilizing domestic constituencies and resources behind a reform agenda. Acute questions persist over the adequacy of international resources, the appropriateness of proposed solutions, the ability of states to bear the burden of external debt required for multilateral loans, and the ability and willingness of donors to coordinate their efforts. Recognizing the clear implications of the systemic educational crises for social stability and regional security, much more could be done, and done much better, to support the reforms that have, finally, begun within the region. Finally, more could also be done to prepare for the inevitable transitions and, as it were, to plan ahead now about how best to help repair the damage that is still being done in Uzbekistan and Turkmenistan.

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<sup>91</sup> Organization for Economic Co-operation and Development (OECD), *Creditor Reporting System on Aid Activities*, Paris: OECD, 2004, <[www.oecd.org](http://www.oecd.org)>.

<sup>92</sup> Commission on Security and Cooperation in Europe (CSCE), *Escalating Violence and Rights Violations in Central Asia*, Washington, D.C.: CSCE, 2002.

## **Conclusions: Implications of Educational Trends for Stability and Security**

Summing up the findings of this report and reviewing the individual country reports, one can ask several key questions and pose at least preliminary answers. First, are the secular educational systems in Azerbaijan and Central Asia failing? Yes, clearly so, especially in the poorest regions and for the most disadvantaged elements of the population. Second, are these educational crises irremediable? No, not yet, but they are rapidly approaching the “tipping point” of systemic failure, especially in Kyrgyzstan and Tajikistan, at which point one could talk meaningfully about the ways in which education contributed to state failure. Third, are parents and young people actively seeking out alternatives to public or secular education, whether in the form of a flight into private schools, study abroad or migration, opposition politics, or radical Islam? Yes, although this is the hardest question to answer definitively. There is an undeniable flight of the elites into private provision and study abroad, as well as a very real “brain drain” out of the educational sector and out of the region. There is also a small but growing trend toward separatist Islam, especially in the “Islamic belt” of southern Kazakhstan, southern Kyrgyzstan, the Ferghana Valley,<sup>93</sup> Tajikistan, and possibly in rural Azerbaijan. Fourth, can anything be done? Yes, these negative trends could still be reversed if vigorous measures are taken immediately to bolster the integrity, capacity and quality of the secular educational systems. Finally, is further unregulated and “market driven” decentralization and privatization, as suggested by prevailing international reform models in the 1990s, the best solutions for these systemic crises? In the author’s opinion, the answer is emphatically no, as such policies have gone badly awry in the context of weak states, weak regulatory capacity, endemic corruption, and weak professional networks. All of these mechanisms are needed to implement such reforms and sustain coherence and integrity within the national educational systems.

Broadly speaking, educational enrollment is declining across the region. In pre-primary education, enrollments have dropped to as low as 10 to 15 percent; in general education enrollment rates hover between 80 and 90 percent across the region, although secondary enrollment rates fall off sharply, especially in Kyrgyzstan and Tajikistan. Especially acute crises have emerged in vocational-technical education, alignment with labor markets, and adult education. There are also acute crises in teacher education and in-service professional development, with the profession becoming older and increasingly feminized, teachers being

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<sup>93</sup> A. Tabyshalieva, *The Challenge of Regional Cooperation in Central Asia: Preventing Ethnic Conflict in the Ferghana Valley*, Washington, D.C.: United States Institute of Peace, 1999.

pulled back out of retirement, and the teaching corps failing to renew itself. In fact, by all accounts, the pedagogical higher educational institutions remain the weakest and most isolated from international programs, and seemingly place or retain very few of their graduates in the profession.

More positively, it is clear that, at least in the leading states in the region, competitive “internal” and “external” markets are emerging in the educational sector,<sup>94</sup> and that these forces are helping to drive innovation and to shape the new reform programs. Internal markets function within institutions, provided that students have some choice between different courses and degree programs, and encourage constructive competition between different departments or majors. External markets function between institutions and nations, and similarly encourage useful competitive pressures between public, semi-public, and private institutions. However, throughout the region, such emerging markets are distorted by corruption, by an acute lack of transparency about funding, and by a lack of easily comparable data on the content, quality, and efficacy of the various educational providers.

It is also clear that there are both valuable competitive incentives and yet also severe distortions that result from the larger geo-strategic rivalries that are playing out within the region. As the United States, Europe, Russia, Turkey, Iran, and now China all jockey for influence, this can generate increased investment in educational development and other assistance programs. However, such rivalries can also result in parallelism, ethnic fragmentation, and cross-cultural miscommunication. For example, while initially useful, one must ask whether the small nation of Kyrgyzstan will ultimately be served by having rival American, Turkish, Russian, Kuwaiti, and Chinese-sponsored universities in its capital city of Bishkek. Furthermore, it is hard to come to any definitive conclusions about these issues because we simply lack adequate data on the evolving mix of official and private educational assistance and charitable contributions from Turkey,<sup>95</sup> Saudi Arabia, Iran, Pakistan, and the Uzbek and other diasporas in the Gulf States and Europe.<sup>96</sup> There is an increasingly urgent need to improve collaboration and to build new scholarly relationships and cooperative programs, at least with

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<sup>94</sup> Sheila Slaughter and Larry L. Leslie, *Academic Capitalism: Politics, Policies, and the Entrepreneurial University*, Baltimore: Johns Hopkins University Press, 1997.

<sup>95</sup> C. E. Demir, A. Balci, and F. Akkok, “The Role of Turkish Schools in the Educational System and Social Transformation of Central Asian Countries: The Case of Turkmenistan and Kyrgyzstan,” in *Central Asian Survey* vol. 19, no.1 (2000), pp. 141–156.

<sup>96</sup> M. King and N. J. Melvin, “Diaspora Politics: Ethnic Linkages, Foreign Policy and Security in Eurasia,” in *International Security*, vol. 24, no. 3 (Winter 1999/2000), pp. 108–138.



reformist and liberal elements, among all the nations that are active in the region, as has also been suggested by several prominent analysts.<sup>97</sup>

As one considers the complex interaction of domestic policy trends and the effects of international assistance, it must also be asked whether international and especially U.S. efforts to influence educational reform suffer from a certain “policy dissonance” and what might be perceived as mixed messages. For example, how might regimes in the region react if, despite poor records in human rights, democratization, and economic liberalization, they continue to receive financial and other support through programs such as the Department of State’s International Military Education and Training Program (DOS IMET), or the Department of Defense’s Foreign Military Financing (DOD FMF), Joint Combined Exchange Training (JCET), and other such programs?<sup>98</sup> While the goals of counter-terrorism and maintaining regional security remain vital, one must ultimately ask if those tasks will also prove impossible should the regimes continue to resist efforts at democratization and liberalization.<sup>99</sup> In fact, anecdotal evidence and the field research conducted for this study suggests that anti-American attitudes in the region, at least among the educated elite and university students, arise in part from the disparity between promised assistance and the limitations of actual funding; as well as from perceived contradictions between U.S. economic programs (seen as favoring foreign producers and limiting export opportunities), security assistance (seen as strengthening corrupt and repressive regimes), and the much more limited efforts in education, human rights, youth programs, and democracy assistance.

Finally, as has been noted by many analysts, it is also becoming increasingly clear that the regimes’ attempts to control or marginalize the emergence of post-Soviet Islamic identities must be rethought. In Uzbekistan and Turkmenistan this has entailed an increasingly divisive level of repression against any unauthorized religious expression. All the other states in the region have practiced a sort of malign neglect, and have worked to keep religion marginal in school curricula and university life. In fact, some have noted that current textbooks and courses on “comparative religions” are often merely reworked versions of old Soviet-era “scientific atheism” courses. Until more honest and balanced attempts are made to accept a legitimate

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<sup>97</sup> C. W. Maynes, “America Discovers Central Asia,” in *Foreign Affairs* vol. 82, no. 2 (March/April 2003), pp. 120–133.

<sup>98</sup> L. Lumpe, “U. S. Foreign Military Training: Global Reach, Global Power, and Oversight Issues,” in *Foreign Policy in Focus* (May 2002), Special Report.

<sup>99</sup> T. Carothers, “Promoting Democracy and Fighting Terror,” in *Foreign Affairs*, vol. 82, no. 1 (January/February 2003), pp. 84–98.

role for moderate Islam in public life, all of the regimes in the region risk radicalizing their opposition, especially among educated young people and students, and further undermining their legitimacy. As noted above, an extraordinarily innovative effort in this regard is the Aga Khan Humanities Program, which seeks to build cross-cultural curricula and teaching materials that will bridge Western and Islamic perspectives.

Finally, in order to better highlight what is at stake in the educational sector, one can engage in scenario planning should the systemic crises in secular education continue to worsen. Trends that are already under way include a flight of the national elites into study abroad and private schools and universities, with all the predictable consequences for social cohesion and elite legitimacy. There is also some evidence, at least in the poorest regions, of a growing flight into Islamic and new Christian and Evangelical religious schools, which will also only further undermine the integrity and financial capacity of the secular educational systems. Efforts to exclude or marginalize ethnic minorities, or at the very least the inability of the states to afford expensive parallel minority schools and bilingual programs as in the Soviet period, threaten to further alienate those minorities and potentially undermine the dominance of the titular nationalities. The chronic weakness of the secular educational systems, especially their poor alignment with the labor markets, threatens to undermine or block economic reform. The failure to honestly address issues of gender roles, HIV/AIDS, and sex education also threatens to exacerbate increasingly catastrophic public health crises throughout the region. Finally, the lack of a meaningful voice or role for young people, within their educational institutions as in their societies as whole, threatens to undermine what is left of systemic educational capacity, civic identity, and national legitimacy.

### **Policy Recommendations**

Overall, it is clear that the key to sustainable and truly systemic educational reform in Azerbaijan and Central Asia is to first help bolster the states' capacity to articulate and implement reform policies, which is the focus especially of World Bank and ADB efforts. Equally important is then working to ensure that international assistance programs help leverage, catalyze, and make more transparent the often-substantial flow of domestic public and private funding, as many of these internal resources are flowing into corruption, elite private schools, and study abroad. Such measures should also be combined with efforts to help build checks, balances, and accountability into the system in the form of autonomous labor and professional

organizations that can better defend educators' and teachers' pay, pensions, and academic freedom.<sup>100</sup> Especially debilitating in this regard is the political passivity and corruption that seems to pervade the teachers' unions throughout the region, when such networks are one of the few mechanisms available to publicize and popularize innovative reform practices. Additional checks and balances could be exercised by semi-independent and independent NGOs and think tanks able to produce educational policy analysis, objective evaluation, and quality monitoring. Such structures are indispensable to balance and help to expose parochial state interests, ministerial intrigues and corruption, and exclusive donor-client relationships. It goes without saying that all of this will require a significant increase in international financial commitments, and a much greater level of coordination and cooperation among all international and multilateral donors. Furthermore, it will also require the United States, multilateral institutions, and other donors to increase their research capacity, to be better able to guide, monitor, and inform such efforts. A series of admittedly ambitious policy recommendations follow, numbered for ease of discussion.

#### *The Effects and Potential of Existing U.S. Government Programs*

First, given the extensive experience and good reputation of U.S. government educational programs in the region to date, it is vitally important to sustain and even expand DOS and USAID programs that have proven to be successful—such as a full array of educational exchanges, university partnerships, and PEAKS—provided that those can be focused more directly on the tasks outlined above and not just on providing episodic or scattered individual career opportunities. There is also an acute need to continue to develop new tools for assessment and evaluation, as well as independent national testing systems, as has been pioneered with U.S. leadership and USAID funding in Kyrgyzstan. The United States could also play a more aggressive role in leading efforts to better coordinate all donor activities, but would, of course, have to make significant financial commitments to the sector commensurate with such aspirations to leadership.

#### *The Politics of Gender and Conditionality in Educational Development*

Second, following the lead of the World Bank, UNICEF, and other agencies such as the Aga Khan Development Network, more of an effort could be made to increase gender sensitivity in assistance programs.<sup>101</sup> This is especially vital in light of the overwhelming role that

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<sup>100</sup> B. S. Cooper, "An International Perspective on Teachers Unions," in Tom Loveless, ed., *Conflicting Missions? Teachers Unions and Educational Reform*, Washington, D.C.: Brookings Institution, 2000, pp. 240–280.

<sup>101</sup> B. Cooper and I. Traugott, "Women's Rights and Security in Central Asia," in *World Policy Journal*, vol. 20 (2003), pp. 59–67.

women play in the teaching profession, even as they continue to play a central role in local and family economies. Such a focus is also critical in light of the role that women of all generations play, especially in rural and mountain communities, in sustaining Islamic values and ritual practices. This could also tie directly into an emerging and innovative practice to connect poverty reduction efforts directly to educational development in “conditioned transfer to education” (CTE) programs. CTE conditions the provision of food and cash supplements for poverty alleviation upon families keeping their children in school.<sup>102</sup> However, such incentives will only work if the secular schools are good enough to make such attendance meaningful and valuable for parents as well as their children.

#### *The Role of Teachers’ Labor Organizations and Professional Capacity*

Third, another critical structural problem remains the acute weakness of labor organizations for teachers and of professional networks and disciplinary associations for educators, university faculty, and policymakers. Such organizations are needed to help defend the pay, pensions, and academic freedom of teachers and university faculty, all of which provide incentives to enter the profession and remain active beyond the necessarily limited monetary rewards of a career in education. Furthermore, such mechanisms are needed as a balance between ministerial authority at the top and the power of local and regional authorities and educational administrators at the bottom. Such networks are also vitally necessary to help implement, publicize, and spread successful innovations beyond pilot programs. In other words, this could entail a new focus on the “middle ground” of professional networks as has been successfully pioneered by the Carnegie Corporation of New York and the MacArthur Foundation in their CASE (Centers for Advanced Study and Education) Program in Russia and Belarus.<sup>103</sup>

#### *The Potential of Alternative Government Service*

Fourth, as has been pioneered with some success in Russia and the Baltic states, greater efforts could be made to develop programs for alternative government service.<sup>104</sup> In other words, rather than the existing system where many young men endure obligatory military service, and the elites often simply opt out through corruption and educational deferments, alternate government service programs could help foster the shift to a more professional military as

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<sup>102</sup> S. Morley and D. Coady, *From Social Assistance to Social Development: Targeted Education Subsidies in Developing Countries*, Washington, D.C.: Center for Global Development, 2003.

<sup>103</sup> B. Ruble, N. Popson, and S. Bronson, *The Humanities and Social Sciences in the Former Soviet Union: An Assessment of Need*, Washington, D.C.: Kennan Institute, 1999.

<sup>104</sup> P. V. Maranov, *Al'ternativnaia sluzhba v stranakh SNG I Baltii*, Perm: COLPI, 2000.

well as help to socialize young people through a common experience in national service. Such programs can also help to overcome weaknesses in local social services; can help to foster young people's engagement in service professions such as teaching, social work, social pedagogy (social work for children), public health, psychiatric counseling, and nursing; and thereby also help to revitalize training programs in those fields through internships and job placements. Given the overwhelming focus of international assistance in the 1990s on programs in economics, business, law, and management, such an effort could also help to invigorate potential new programs in the long-neglected service professions, all of which are vital for social stability, conflict resolution, and post-conflict reconstruction.

#### *The Critical Role of Independent Policy Research and Evaluation*

Fifth, another key structural weakness—perhaps the fatal weakness—is the acute lack of independent policy research and objective evaluation within the new national educational systems, which is an acute problem throughout the entire region. This derives in part from Soviet legacies, and the dominant role of the Academy of Pedagogical Sciences (APN USSR) in Moscow, and of the monopolies formerly exercised by central publishing houses such as *Nauka*, *Pedagogika*, and *Prosveshchenie* in academic and textbook publishing. This is also related to a structural issue in the Soviet system, which tended to separate university teaching from research, with little attention to the former and an overemphasis in the latter on industrial, technical, and military research. Such independent policy research is vitally important to act as a check upon state interests, to expose and help prevent inappropriate collusion between donors and clients, and to provide objective and, if necessary, critical evaluation of assistance policies and reform programs.

#### *The Centrality of Teacher Education and In-Service Professional Development*

Sixth, the weakness of educational policy research is directly related to the enduring structural isolation and intellectual debility of the pedagogical higher educational institutions and in-service professional development institutes. These structures have remained acutely under-funded since the 1980s, and have generally been badly neglected by both indigenous elites and international assistance programs that tend to engage with the more prestigious state universities or new private institutions such as Khazar University and Western University in Baku, the Kazakhstan Institute of Management, Economics, and Strategic Research in Almaty, AUCA in Bishkek, and Westminster International University in Tashkent. Historically, these pedagogical institutions tended to be among the weakest in the sector, and yet also played an important role, in the Soviet period as now, as an entrée to semi-professional careers and upward mobility for women, rural- and working-class young people. For all of their problems,

they still play a central role in teacher education and re-education, even as they place or retain fewer and fewer of their graduates in teaching careers. There is an acute need for a comprehensive needs assessment and analysis of these institutions, and greater efforts to open them up and reform them from within administratively and intellectually. As noted above, one approach to this might be to focus less exclusively on child-centered or progressive pedagogy, and to add in more of a focus on teacher-centered or standards-based teacher education methods.<sup>105</sup>

#### *Education as a Forum for Regional Cooperation*

Seventh, a reinvigorated international commitment to educational development in the region could also be leveraged to foster regional cooperation in other sectors, both in the Southern Caucasus and in Central Asia.<sup>106</sup> New efforts could be made to encourage exchanges of policymakers, researchers, university faculty, teachers, and students within the two regions, to foster conflict resolution and to help build professional capacity. Successful examples of such programs include the Carnegie Corporation-funded Social Science Resource Centers (SSRC) in Azerbaijan, Georgia, and Armenia, administered by the Eurasia Foundation; and the Carnegie-funded Humanities Fellowship Program in Belarus, Russia, and Ukraine, administered by the American Council of Learned Societies (ACLS). In the Caucasus and Central Asia, such educational programs could be leveraged to encourage greater regional cooperation in trade, economic development, water, energy policy, and collective security.

#### *Liberalization and the Reconciliation of Islam and Modernity*

Eighth, greater efforts could also be made to foster more moderate Islamic currents in the region, and such efforts could be connected to the new Middle East Partnership Initiative (MEPI) and USAID-funded efforts to improve secular education in Pakistan and elsewhere in Central Eurasia. This could all be part of a broader effort to help promote *ijtihad* (creative interpretation and adaptation) as opposed to narrow and militant conceptions of *jihad*,<sup>107</sup> and could also entail efforts to recognize and promote democratic currents and alternative models

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<sup>105</sup> Standards-Based Teacher Education Project (STEP), “Developing Knowledgeable Teachers: A Framework for Standards-Based Teacher Education Supported by Institutional Collaboration,” *STEP Reports*, vol. 1, no. 2., Washington, D.C.: Council for Basic Education and the American Association of Colleges for Teacher Education, 2003.

<sup>106</sup> United Nations Development Program (UNDP), *Central Asia 2010: Prospects for Human Development*, New York: UNDP, 1999; Martin C. Spechler, “Regional Cooperation in Central Asia,” in *Problems of Post-Communism*, vol. 49, no. 6 (November/December 2002), pp. 42–47.

<sup>107</sup> J. L. Esposito and J. Voll, *Makers of Contemporary Islam*, New York: Oxford University Press, 2001.

of civil society that have emerged within contemporary Islamic thought.<sup>108</sup> As noted, such efforts could build directly upon indigenous traditions of Islamic reform, especially that of the *Jadidists* of the early twentieth century, and their efforts to reconcile Islam with modernity, democracy, and nationalism. *Jadidism* was first co-opted and then destroyed by the Soviet regime, and attempts to revive the movement in the late 1980s and early 1990s, especially in Uzbekistan, held enormous promise until they were repressed by government fiat.<sup>109</sup>

*The Revitalization of Tertiary Education as the Engine of Systemic Reform*

Ninth, greater efforts could be made to focus more systematically on reform in the higher educational sector, beyond the often-limited and short-term assistance provided to individual students and faculty members, or to select departments and private institutions. Such efforts could attempt to build upon directly relevant new movements in U.S. higher education, such as service or community-based learning and community-based research; and new movements to revitalize the civic mission of higher educational institutions and to foster civic engagement among students.<sup>110</sup> Such programs could work to offset a clear propensity toward elitism and an often-narrow careerism among the better-off young people in the region, as well as offset the propensity toward cynicism and disengagement among the vast majority of young people. There is a broader trend in international development to recognize the centrality of “knowledge-based” aid policies, and the vital role of tertiary education in improving overall systemic quality in education, in fostering social capital and cohesion, and in helping to drive broader processes of economic liberalization and political democratization.<sup>111</sup>

*A New Regional Mission for the American University of Central Asia?*

Finally, one approach that could potentially bring many of these issues together, and help to lead a drive to build policy and professional capacity throughout the region, would be to significantly expand the resources and regional mission of the American University of Central Asia in Bishkek. This initiative could build upon efforts to create a new regional or international

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<sup>108</sup> H. Hanafi, “Alternative Conceptions of Civil Society: A Reflective Islamic Approach,” in S. Chambers and W. Kymlicka, eds., *Alternative Conceptions of Civil Society*, Princeton: Princeton University Press, 2002, pp. 171–189.

<sup>109</sup> M. Shorish, “Back to Jadidism: Turkistani Education After the Fall of the USSR,” in *Islamic Studies*, vol. 34 (Summer-Autumn 1994), pp. 161–182.

<sup>110</sup> A. Colby, T. Ehrlich, E. Beaumont, and J. Stephens, *Educating Citizens: Preparing America’s Undergraduates for Lives of Moral and Civic Responsibility*, San Francisco: Jossey-Bass, 2003.

<sup>111</sup> Task Force on Higher Education and Society, *Higher Education in Developing Countries: Peril and Promise*, Washington, D.C.: TFHES and the World Bank, 2000; World Bank, *Constructing Knowledge Societies: New Challenges for Tertiary Education*, Washington, D.C.: World Bank, 2002; J.B.G. Tilak, “Knowledge Society, Education and Aid,” in *Compare* 32, no.3 (2002), pp. 297–310.

consortium of secular public and private universities focused on long-term educational development, rather than the often short-term partnership programs that tend not to result in enduring and sustainable changes. New AUCA-sponsored efforts could include regional fellowship programs, branch campuses, and certificate programs in English language teaching, faculty development, publishing, information technology, and adult education. If invested with adequate resources, and built upon mutually beneficial professional partnerships around the region, such programs could potentially serve to better illuminate and guide international assistance programs in the educational sector, and thereby help to transform and revitalize secular education around the region. Such a leadership role would allow the United States to maximize its “soft power”<sup>112</sup> to better promote social stability, economic development, and regional security throughout the Caucasus and Central Asia.

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<sup>112</sup> J. S. Nye, *Soft Power: The Means to Success in World Politics*, New York: Public Affairs, 2004.







# **The State of Physical Infrastructure in Central Asia: Developments in Transport, Water, Energy, and Telecommunications**

*Justin Odum and Erica Johnson*

Despite almost fifteen years of independence, the infrastructural capacities of the Central Asian states continue to be challenged by the Soviet legacy of poor planning and administration. The continuing physical decay of much of the region's road network, the dependence of regional elites on revenues from environmentally destructive cotton production, and new border conflicts that separate entire local communities from their kin and natural trading partners are all serious problems hampering efforts at regional cooperation on infrastructure issues. This article provides an overview of the state of physical infrastructure in Uzbekistan, Tajikistan, Turkmenistan, the Kyrgyz Republic, and Kazakhstan. Beginning with an introduction to some of the post-Soviet developmental challenges faced by the region, the article then provides country studies highlighting recent infrastructure development projects in the key sectors of water, transport, energy, and telecommunications in each of the five post-Soviet states. The article concludes with an assessment of lessons and future trends in Central Asian infrastructure. Although the authors consider it unlikely that disputes over water, transport, energy, or telecommunications per se could escalate into larger conflicts on a national or regional level, they emphasize that the desire of the post-Soviet states in the region to promote their sovereignty at the expense of greater regional integration through infrastructure development should not be dismissed out of hand.

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This paper is the result of research conducted by the authors for NBR's Central Asia Infrastructure Study 2003–2004, as part of NBR's Central Asia in the Twenty-first Century Initiative. Justin Odum was principal researcher for the Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan components of the study, conducting extensive field research in the region. He holds an M.A. in Russian, East European, and Central Asian Studies from the Jackson School of International Studies at the University of Washington, and was a research associate with NBR's Eurasia Policy Studies program from 2003 to 2004. He is currently based in Penjikent, Tajikistan, as project manager for Mercy Corps' Peaceful Communities Initiative. Erica Johnson was principal researcher for the Uzbekistan component this study. She is a Ph.D. candidate in political science at the University of Washington. Prior to returning to her studies, she served for five years as co-director of NBR's Eurasia Policy Studies program.

## Introduction

Well over a decade since the collapse of the USSR, the challenges of coping with the legacy of Soviet planning continue to bedevil efforts to modernize the water, transport, energy, and telecommunications infrastructure of the five Central Asian states. The continuing physical decay of much of the region's road network, the dependence of regional elites on revenues from environmentally destructive cotton production, and new border conflicts that separate entire local communities from their kin and natural trading partners are all serious problems hampering efforts at regional cooperation on infrastructure issues.

Efforts by foreign governments and international financial institutions (IFIs) to provide loans and aid to support Central Asian infrastructure development—despite the often-uncooperative policies of the Uzbek leadership—have borne some fruit over the past decade. Small-scale water projects as well as the construction of new roads and the rehabilitation of existing roads through remote regions have had a concrete, positive impact on local populations. Future transport, energy, and communications links with China may play an especially significant role in the revitalization of the Central Asian economic zone. Finally, renewed economic growth, particularly in energy-rich Kazakhstan, has led to significant infrastructure upgrades in recent years.

Infrastructure disputes per se are unlikely to be the cause of major regional conflicts in the coming decade, unless these disputes become intertwined with religious, ethnic, or nationalist political ideologies. However, the emphasis of most IFIs and foreign governments on inter-regional cooperation on Central Asian infrastructure development is still often perceived as interfering with the recently gained sovereignty of the newly independent states of the region. Indeed, at times this emphasis may be counterproductive, since infrastructure development within each country is an important part of consolidating these new states' independence, and efforts to build links among peoples within a given state may in some cases make more sense than trying to rebuild inherited Soviet infrastructure.

## Overview of Regional Infrastructure

Provision of physical infrastructure is one of the crucial ways that states establish the boundaries of their sovereign borders, project authority throughout their territories, and contribute to growth and development through the provision of public goods, such as roads and

railways, water and power supplies, and telecommunications.<sup>1</sup> Since independence in 1991, demonstration of these infrastructural components of state capacity has been an important means for the transitioning Soviet successor states in Central Asia to assert their independence from Russia and from each other.<sup>2</sup>

Because the Soviet-era infrastructural systems radiated from the center to the satellite republics, the independent Central Asian states inherited interconnected infrastructure systems that irrationally cross new borders, to the frustration of the local leadership. Moreover, many of the Soviet-era infrastructure projects were badly planned and had already created catastrophic conditions in places like the Aral Sea basin long before 1991. The legacies of Soviet planning also contributed to irrational transport and energy distribution scenarios at independence. Despite deficiencies and inefficiencies of Soviet-era infrastructure, some plans for projects that were created during the Soviet era continue to be bantered about as possible future projects.

The collapse of the Soviet system severed many of the Soviet republics' connections with each other and with Moscow—the previous provider of collective goods, including economic, political, and infrastructural support. As a result, all five Central Asian states are responding to severe developmental challenges: consolidation of political power (most commonly under authoritarian or borderline authoritarian leadership), post-Soviet economic crisis, rapid population growth coupled with high unemployment, environmental degradation, and potentially radical religious movements. Moreover, much of the regional water, energy, transport, and communications infrastructure is deteriorating and/or underdeveloped, and poor infrastructure remains among the major obstacles to acquiring full independence from Russia

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<sup>1</sup> Two important indicators of state capacity are infrastructural power and despotic, or coercive, power (Michael Mann, *The Sources of Social Power*, New York: Cambridge University Press, 1986; Joel S. Migdal, *Strong Societies and Weak States: State-Society Relations and State Capabilities in the Third World*, Princeton: Princeton University Press, 1988). Indeed, these two components were critical to Vladimir Lenin's first expositions on what communism would accomplish, as evidence in the equation: Communism equals soviet power plus electrification of the whole country. Jeffrey Herbst (2001) explores the relationship between infrastructure development and state strength in sub-Saharan Africa. Peter Evans discusses the Brazilian state's move from traditional infrastructural provision to dependent development. See Peter Evans, *Dependent Development: The Alliance of Multinational, State, and Local Capital in Brazil*, Princeton, N.J.: Princeton University Press, 1979 and Jeffrey Herbst, *States and Power in Africa: Comparative Lessons in Authority and Control*, Princeton, N.J.: Princeton University Press, 2000.

<sup>2</sup> The importance of this goal varies along a spectrum ranging from extremely important to Uzbekistan to less urgent for Kazakhstan, which shares a border with Russia and has maintained good political and trade ties with its northern neighbor.

and establishing new ties within the region and with Europe, Asia, and the Middle East. In addition, because of geographic constraints (all five Central Asian countries are landlocked and one, Uzbekistan, is double landlocked—surrounded by countries that are themselves land-

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*Establishing infrastructural indicators of sovereignty requires significant investment.*

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locked) and the location of natural resources, each regional country's infrastructural systems, especially transportation, water, and energy, are closely tied to those of its neighbors. Given these Soviet legacies, establishing infrastructural indicators of sovereignty requires significant investment, but the

transitioning states of Central Asia often must rely on foreign financing to fund large and expensive infrastructure projects. However, the goals of the foreign funders are often greatly at variance from the desire for self-sufficiency that the Central Asian leaders assert.<sup>3</sup>

In the past two to three years, many scholars and practitioners have begun to assert that investment in infrastructure projects leads to greater regional cooperation among developing countries. As a result, infrastructure projects are now considered among the most significant investment opportunities in transitioning and developing countries.<sup>4</sup> Indeed, several IFIs have expressly stated that an approach centered on joint action in energy, water, and regional transport infrastructure holds significant benefits for cooperation and stability in all the countries of Central Asia.<sup>5</sup> These institutions have identified infrastructure projects as investment priorities in the region, and the resulting funding arrangements usually carry terms that require the Central Asian states to enter into cooperative agreements with each other, which these states feel sacrifices the very sovereignty they are trying to establish. Many of the infrastructure investment agreements also contain additional conditions of economic and political reform.

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<sup>3</sup> While bilateral assistance is often preferred by the Central Asian governments because it is less cumbersome and contracts are perceived to be less vigorously enforced, the scale and expense of infrastructure projects usually require the support of multilateral development banks (MDBs), even though such support also usually carries policy conditions that the Central Asian leaders perceive to be unattractive.

<sup>4</sup> Approximately 50 years ago, MDBs and other foreign funding sources identified infrastructure projects as critical development tools. Twenty years later, the focus was shifted to domestic institution building. In recent years, the trend is moving back toward infrastructure investment. Because of the shifting funding priorities of international donors, this project also offers interesting possibilities for comparisons across cases from a variety of historical settings, regions, and sectors.

<sup>5</sup> Asian Development Bank, "Central Asian Regional Economic Cooperation—CAREC," December 19, 2003, <[www.adb.org/CAREC/default.asp](http://www.adb.org/CAREC/default.asp)>; European Bank for Reconstruction and Development (EBRD), "Uzbekistan Strategy Overview," 2004, <[www.ebrd.com/country/country/uzbe/index.htm](http://www.ebrd.com/country/country/uzbe/index.htm)>; World Bank, "About the CIS-7 Initiative," <<http://lnweb18.worldbank.org/ECA/CIS7.nsf/ECADocByUnid/85256C370063EBBE85256C140050E7AC?OpenDocument>>.

Indeed, while small-scale and pilot projects outnumber the large-scale projects aimed at rehabilitation of old infrastructure, few international financial organizations have identified the goal of using these projects to solidify the new borders of the regional states. To the extent that the focus on cooperation in large-scale refurbishment or new infrastructure development makes each regional country more conscious of its legal sovereignty, however, the larger projects aimed at promoting cooperation may ironically also work to reinforce the post-independence borders. Furthermore, while multilateral development banks (MDBs) continue to support national projects, the primary emphasis is more strongly placed on “induced cooperation” in large-scale projects. By contrast, bilateral aid (especially from Japan) often only supports country-specific projects. Because bilateral aid does not require cooperation among the regional states, there is a concern among MDBs and other multilateral donors that this type of aid is feeding the growth of nationalism or hyper self-sufficiency in the regional states.

Based on a series of ongoing ministerial meetings involving MDBs, nongovernmental organizations (NGOs), and the leaders of the regional states, MDBs have identified three priority areas for collaboration and the promotion of cooperation in Central Asia: trade, energy, and transport.<sup>6</sup> While it is difficult to assess the extent to which the efforts of the various MDBs are coordinated, such coordination might play a critical role in streamlining funding, making larger projects possible, and avoiding duplication. For example, working together to expand the region’s transport infrastructure will increase trade flows and improve economic opportunities; coordination of energy production and distribution will reduce prices and increase availability, which are especially important for more remote rural areas. Water is also a priority area for these multilateral groups, but issues surrounding water use and ecological concerns are perceived as the trickiest sector for promoting regional cooperation because none of the regional countries wants to change its current usage patterns. Indeed, dependence of these regimes on cotton exports makes change politically difficult.

Despite the perception that it infringes on state sovereignty, there are emerging signs that the Central Asian states see the value of cooperation on infrastructure for the benefits of economic development and as a way to overcome regional inequalities in resource distribution, political instability, and security concerns.<sup>7</sup> There is some recent evidence that the re-

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<sup>6</sup> Eight countries are involved in those meetings (the five states of Central Asia, China, Azerbaijan, and Mongolia), but Turkmenistan does not always participate. In 2003 the ministerial meeting also involved the United Nations, the EBRD, the World Bank, and other development partners.

<sup>7</sup> James P. Dorian, Utkur Tojiev Abbasovich, Mikhail S. Tonkopy, Obozov Alaipek Jumabekovich, and Qiu Daxiong, “Energy in Central Asia and Northwest China: Major Trends and Opportunities for Regional Cooperation,” *Energy Policy*, vol. 27, no. 5 (May 1999), pp. 281–297.

gional states share the MDBs' focus on regional cooperation through sectoral development of infrastructure. For example, in statements during an October 2003 symposium on regional cooperation on the resuscitation of the Silk Road, representatives of Uzbekistan, Kyrgyzstan, and Tajikistan stated that issue-by-issue cooperation is the only way to work at the present time. These officials stated that cooperation is closely linked to political development in each country and that they can work together if they are developing common infrastructure in specific sectors such as energy, transport, and the environment.<sup>8</sup> In addition, while the development of the telecommunications infrastructure appears to be based much more on national projects financed by private companies, there could be scope for regional cooperation on jointly launching satellites, which might increase availability and reduce the costs of mobile phone and Internet use. Yet to date, such cooperation has occurred only in fits and starts as the regional states have followed fractious development policies aimed primarily at asserting their individual sovereignty.<sup>9</sup>

Because of these fractious tendencies, many observers expressed early fears of the Balkanization of the Central Asian region, or even within individual countries of the region. Nevertheless, there seems to be little cause for concern about the outbreak of major interstate conflict. Indeed, several representatives of IFIs have suggested that the regional countries will find peaceful negotiations to resolve any problems that do arise. Even those organizations that focus on conflict prevention in the South Caucasus do not focus on Central Asia, citing the successful resolution of the civil war in Tajikistan as proof of the region's ability to settle disputes on its own. Although military conflict among the states is not likely in the short- or medium-term, conflict between regional states will continue to arise on border issues and

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<sup>8</sup> See for example N.E. Najimov, First Deputy Chairman of the Agency on External Economic Relations, Republic of Uzbekistan, "Rebuilding the Great Silk Road—Idea or Response: View from the Region: Uzbekistan," presented at the International Workshop on German-Japanese Cooperation with and in Central Asia and Afghanistan, Konrad Adenauer Foundation, the National Institute for Research Advancement, and the Japanese-German Center Berlin, Tashkent, October 4–5, 2003; and V.I. Norov, First Deputy Minister for Foreign Affairs, Republic of Uzbekistan, Opening Address at the International Workshop on German-Japanese Cooperation with and in Central Asia and Afghanistan, Konrad Adenauer Foundation, the National Institute for Research Advancement, and the Japanese-German Center Berlin, Tashkent, October 4–5, 2003.

<sup>9</sup> Of the regional countries, Turkmenistan has been the most isolationist and resistant to participation in regional cooperative arrangements. Uzbekistan, Central Asia's largest country, asserts the role of the regional hegemon and wields great influence in the region. Kyrgyzstan, Kazakhstan, and Tajikistan have been somewhat more amenable to regional cooperation on a variety of issues, although some observers contend that, because of its good relations with Russia and sizeable income from oil exports, Kazakhstan will be the future regional hegemon.



among ethnic minorities within each state, especially as economic development in the Central Asian region varies widely. The existence of nationalistic sentiments and prejudices among the regional peoples might exacerbate these potential sources of tension.

Although aging and inadequate, Central Asia's infrastructure is still considered to be reasonably advanced compared with developing countries in other regions of the world. There are, nevertheless, many challenges to updating the country's transport, water, energy, and telecommunications infrastructure and to encouraging cooperation on these projects among the states of Central Asia. To the extent that cooperation on infrastructural issues among these states can be developed, greater stability and prosperity of the region may indeed be achieved.

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*Although aging and inadequate, Central Asia's infrastructure is still considered to be reasonably advanced compared with developing countries in other regions of the world.*

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This report provides an overview of the state of infrastructure in the transport, water, energy, and telecommunications sectors in Central Asia. The paper is divided into six main parts. In order to assess the current state of the region's physical infrastructure and to address the extent to which these regional states are working independently or cooperatively to manage their infrastructure challenges, the first five sections highlight recent development projects in each sector in the five Central Asian republics of Uzbekistan, Tajikistan, Turkmenistan, Kyrgyzstan, and Kazakhstan, respectively. The final section concludes with an assessment of lessons and future trends in Central Asian infrastructure development.

## **Uzbekistan**

Uzbekistan's location in the center of Central Asia makes it pivotal to most projects or potential projects carried out on a regional level. All the countries of Central Asia, plus Afghanistan, share a border with Uzbekistan, making the difficulties of dealing with the isolationist and often confrontational policies of President Islam Karimov a region-wide problem. Internally, Uzbekistan suffers from an infrastructure that continues to decay due to its lack of maintenance since independence, and in some cases since well before the collapse of the Soviet Union. Moreover, much of the Soviet era infrastructure Uzbekistan inherited was poorly designed at the outset, most notably the water infrastructure, which led to the desiccation of the Aral Sea and the resulting crisis in public health.

### *Transport*

In Uzbekistan, transport projects are critical and seemingly the least controversial of the infrastructure sectors explored in this project. Roads and railways are seen to activate trade and economic links and establish a climate of trust among the Central Asian states and surrounding regions, which are considered necessary for sustained and secure development. Air transport within the country and within the region is also seen as critical, but has received less attention than roads and rail.

Uzbekistan could be an important transit center in Central Asia, but there has been very little real investment from the government and the country is losing a lot due to introversion and isolation. On a positive note, since independence, Uzbekistan has focused on development of new, more economically effective transport corridors, and these efforts have reduced the average distance of transport corridors from 5,200 km to 3,700 km.<sup>10</sup> The government has undertaken a few efforts to expand roads using internal financing, most notably the new highway connecting Tashkent and the Ferghana Valley, which allows for the bypassing of Tajikistan. Most of Uzbekistan's major cities are easily accessible by well-paved roads that allow for reasonably high-speed travel. Roads in more remote, rural areas are fewer and are often poorly maintained. The government also undertook a project to build bridges at the Afghanistan border (see below), but that effort was largely intended to bypass Turkmenistan and contributes to isolation within the region. Moreover, the country's border and tariff policies dramatically increase the prices of many consumer goods within the country and make the other regional states reluctant to trade with Uzbekistan, which they see as acting as the regional bully.

In terms of the experience MDBs have had working on transportation projects with the Uzbek government, there was only one story of an agreement gone awry. In a railway project with the Asian Development Bank (ADB), Uzbekistan took equipment intended for one project and used it for another railroad project that the Uzbek government identified as higher priority. ADB then sanctioned the government, made it replace the equipment for the project for which it was originally intended, and that project was also completed. While this process was not what ADB had planned, in the end the government followed the rules and the completion of two projects is seen to have provided greater economic benefit than the one alone.

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<sup>10</sup> N.E. Najimov.

Although views of its prospects are mixed, many see the European Union's Transport Corridor Europe Caucasus Asia (TRACECA) program as especially significant for transport development in Uzbekistan and throughout Central Asia.<sup>11</sup> Most specifically, the portion of the project that involves rehabilitation of roads between Uzbekistan and Afghanistan is seen as important. While the project is huge and construction might be an economic boon, several observers commented that the main beneficiaries of the TRACECA project are the Uzbek national TRACECA committee, the state railway and airway companies, and other state-owned companies. Likewise, in the railroad project connecting to Afghanistan, European companies provide equipment and Uzbek Railways implements the construction. Construction of a railway from China (Kashgar) to Kyrgyzstan (Jalal-Abad, Torugart) to Uzbekistan (Andijan) is due to start in early 2005, and this project is seen to be more concrete than TRACECA. The Japanese Bank for International Development (JBID) is also providing loans for railways in southern Uzbekistan. Moreover, Uzbekistan's first deputy minister for foreign affairs has also mentioned that the creation of a transport corridor from Central Asia to the Persian Gulf is a critically important future goal.<sup>12</sup>

Observers believe that Uzbekistan's officials see integration of Afghanistan into Central Asia, particularly in major transport and communications projects, as a key to strengthening stability and security in the country and the region as a whole. During the reconstruction of Afghanistan the volume of goods traveling through Uzbekistan from Europe, Russia, and other countries has dramatically increased, and the economic impact on Uzbekistan from improving this route is seen as great. Uzbekistan is actively involved in infrastructure development in Afghanistan, particularly bridge-building projects in the Uzbek-Afghan border area. Uzbek workers have built eight bridges with capacity of 100 tons each in Afghanistan, and two more are expected to be completed soon. Road and rail projects with Afghanistan are also seen as very promising because they provide the opportunity to avoid Turkmenistan and will be shorter routes with lower tariffs than those charged by Turkmenistan. Although Uzbekistan sees the roads to Afghanistan as a way to further isolate Turkmenistan, in the long term, they might cause more opening and competition with Turkmenistan. The transport connections with Afghanistan are expected to be complete in about five years. Iran is also very interested in developing transportation and other reconstruction projects in Afghanistan and has started closer cooperation with Uzbekistan because of possible partnership in Afghanistan. One po-

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<sup>11</sup> Uzbekistan serves as the current chair of TRACECA and is very open to possibility of Iran's membership in the project.

<sup>12</sup> V.I. Norov and author's interviews, Tashkent.

tential, and important, downside is the possibility that these new transportation routes to Afghanistan might provide another corridor for the drug trade or transit of other illicit materials—potentially making Uzbekistan less, rather than more, stable.

Despite this focus on improving transport links with Afghanistan, the government of Uzbekistan currently places little emphasis on efforts to rebuild infrastructure links to Tajikistan and Kyrgyzstan. Indeed, Uzbekistan's current history of mining its borders with these neighbors viscerally indicates a lack of interest in cooperation with them.<sup>13</sup>

In addition to land transport, Uzbekistan could be a regional air hub, but the Uzbek government is seen to be neglecting this potential. The Tashkent airport was significantly upgraded for the European Bank for Reconstruction and Development (EBRD) meeting in May 2003. Further development of a cargo terminal is being planned with partial assistance from the German KfV Bank. In addition, JBID is now studying airport improvement projects in Samarkand, Bukhara, and Urgench.

### *Water*

Uzbekistan's water infrastructure is seen to be mostly obsolete, and many regional reservoirs have reached their life spans. Minimum investment is required to maintain the existing infrastructure in some regions, but, in other areas, there is no safe drinking water or supporting infrastructure. There are ethnic and regional differences in terms of poverty, availability of water, and infrastructure. The lower Amu Darya Delta and Khorazm in Karakalpakstan suffer from especially severe water problems, and even major cities periodically suffer water outages lasting from a few hours to several days. Abuse of water at the private and national level continues to lead to salinization of the soil, mismanagement of resources, and waste. Because of the refusal to value water, there are, subsequently, no revenues for reinvestment in water infrastructure. There is little political will to start valuing water and pricing the ecological costs,

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<sup>13</sup> In August of 2004 the Uzbekistani government announced it would begin de-mining its border regions. It claims to have begun the process around the enclaves of Sokh and Shahimardan, though some sources dispute that claim. See Bruce Pannier, "Uzbekistan: Government Announces Effort to Clear Borders of Land Mines," *RFE/RL*, August 19, 2004, <[www.rferl.org/featuresarticle/2004/8/C1AEA32E-58E4-46E6-956E-8914562F48EF.html](http://www.rferl.org/featuresarticle/2004/8/C1AEA32E-58E4-46E6-956E-8914562F48EF.html)>, and UN Office for the Coordination of Humanitarian Affairs, "Uzbekistan: De-mining in Border Areas Underway, Military Officials Say," *IRINnews*, August 17, 2004, <[www.irinnews.org/report.asp?ReportID=42705&SelectRegion=Central\\_Asia&SelectCountry=UZBEKISTAN](http://www.irinnews.org/report.asp?ReportID=42705&SelectRegion=Central_Asia&SelectCountry=UZBEKISTAN)>.

however, because to do so would destroy industries, such as cotton production, that are operating at below world prices. For now, revenues from cotton production are enough to support the autocratic regime.<sup>14</sup>

Uzbekistan is seen by foreign organizations to be the most difficult of the Central Asian states to deal with on water issues. While several organizations initially tried to work with all the Central Asian governments on water issues, they later began to identify construction projects based on national needs, especially in Uzbekistan and Turkmenistan at the expense of regional cooperation. In the early years of independence, Uzbekistan was more willing to accept money for water management or infrastructure projects, but now the Uzbekistani government is more resistant to the terms that MDB donors include in those agreements. In addition, Uzbekistan is not complying with “Integrated Water Resource Management Project” agreements that coordinate water management in the Ferghana Valley. Moreover, because Uzbekistan’s agricultural market is not free, neither are its water associations, which are viewed as one of the major opportunities for resolving cross-border water disputes and improving water management in the country.

In order to assert its independence from foreign financing and the other regional states, the Uzbekistani government has moved forward on water projects with its own funds when those projects are seen as urgent. Uzbekistani officials see the need for national infrastructure because of the uncertainty over how cooperation will work under circumstances of succession in the neighboring countries. For instance, Uzbekistan is working on its own to prevent further winter flooding and the mixing of fresh and drainage water by creating dams in the Chardarya region. Uzbekistan also has plans to build new downstream reservoirs to catch winter releases in order to eliminate the need to ever request water from another country, except in the driest years. Some of these project ideas are carryovers from Soviet planning, and none is a full solution. Moreover, these plans are also inefficient and short-term solutions. When these huge projects are undertaken at the expense of the Uzbek government, they employ inexpensive materials (such as sand) to build structures that will not be durable even in the short- to medium-term.

On the other hand, the USAID/Natural Resource Management Project and efforts by the European Union and World Bank have had a large role in helping Uzbekistan, and other Central Asian countries, since early independence. For example, the USAID/NRMP Paxtabad

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<sup>14</sup> Erika Weinthal, *State Making and Environmental Cooperation*, Cambridge, Mass.: MIT Press, 2002.

Canal (120 km) in south Ferghana Valley has been identified as a promising project and is likely to serve as a model for the rest of Uzbekistan. The Uzbek government is expected to largely (not completely) replicate the project in other areas, and other donors might help support these efforts. The administration of the pilot project will mostly be based in district or *viloyat* management, but the Swiss Agency for Development and Cooperation, one of the most active bilateral donor organizations in the water sector, suggests that it will take at least two years for a social mobilization team to develop the capacity to manage the project effectively.

In Uzbekistan, water is the one area where there seems to be the most regional and local level government activity. In Ferghana and other border areas, for example, the regional and district *hakims* renegotiate quotas if downstream shortages develop or look like they might develop. These leaders, however, are usually appointed by the president to appease his own clan or other elite groups. The extent of the decentralization to the district or regional level depends on the size of the question and whether the local leaders need to go to the national level. Anything involving border demarcation must involve the national level officials.

Although, in theory, the Uzbek officials seem to understand the importance of working with the neighboring states on water issues, they lack confidence in the leadership in the other countries and the future. The biggest lesson from the water sector experience in Central Asia is the need to demonstrate the mutually beneficial nature of all projects and compensate states

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*The biggest lesson from the water sector experience in Central Asia is the need to demonstrate the mutually beneficial nature of all projects and compensate states for any perceived losses.*

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for any perceived losses. In addition, foreign actors have found that it is critical to develop any projects in close consultation with the national governments instead of presenting projects as a *fait accompli*. This strategy clearly defines who are the beneficiaries, funders, and implementers of every stage and what roles each group will play in consultation with the national government. In one Syr Darya project, the Uzbek government pulled

out at the third stage because the project was approved and tendered without the involvement of the Uzbek government. In addition, because water sector development is a vast and difficult issue, components of water are now combined within the water-energy nexus. Nevertheless, valuation of water and energy exchanges as outlined in the 1998 Framework Agreement, which was rolled over for five more years in March 2003, still pose a number of challenges. Because 2003 was a wet year, for example, Uzbekistan did not need to request additional water during the growing season and so did not owe electricity to Kyrgyzstan in exchange for water usage.

## *Energy*

The differences among the Central Asian countries are the most obvious in energy endowments. The centralized Soviet system that connected the Central Asian states has largely broken down, but some real opportunities for cooperation in energy remain if existing infrastructure can be exploited toward those ends.

Uzbekistan's energy resources, especially natural gas, were not really developed until independence. Energy self-sufficiency is the goal of President Karimov, and he has mobilized investment toward this goal. Mostly this investment has gone to maintain existing Soviet infrastructure, but some new infrastructure has also been built from scratch. The sector is heavily subsidized, and, in addition, energy price subsidies to users make the industry highly inefficient. While these subsidies are intended as a social policy, in the end, they tax the population more than valuing energy resources closer to world market prices would. For example, in a prestigious neighborhood in Tashkent, residents enjoy unlimited consumption of gas for about \$10/year, whereas other regions of the country do not have gas at all. Moreover, even within Uzbekistan's major cities, there are sporadic gas (and electricity) outages throughout the year. The Uzbek government proudly states that 95 percent of the country has gasification, but that figure does not translate into actual availability of gas.

According to some observers, Uzbekistan's energy infrastructure is reaching "gum and string" limits, especially in electricity and oil. Without investment, Uzbekistan's thermal generation plants and oil sector will collapse. The average age of Uzbekistan's thermal plants is thirty years and, according to recent estimates, \$1.15 billion will be required to maintain and refurbish just the thermal generation plants, which account for up to 90 percent of electricity production.<sup>15</sup> The oil fields have already started to become economically unfeasible, and, because of drop-offs in oil production, Uzbekistan is no longer self-sufficient and must turn to imports from other regional states for energy. Uzbekistan needs new technology and infrastructure to be a profitable oil producer, but the only area Uzbekistan can compete in will be oil products because Kazakhstan has the market cornered in crude oil. In particular, Uzbekistan's portion of the Ferghana Valley has very high potential reserves of oil products, especially of paraffin.

Despite the poor state of the existing infrastructure and the inhospitable business climate, Uzbekistan expects investment and assistance will come to the energy sector. In particular, the

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<sup>15</sup> Raghuvveer Sharma, Loup Brefort, Marat Iskakov, and Peter Thomson, *Uzbekistan: Energy Sector: Issues, Analysis, and an Agenda for Reform*, Washington, D.C.: World Bank, June 2003.

Uzbek leadership has pinned big hopes on bilateral support from Japan, and the Japanese Bank for International Cooperation (JBIC) might become involved in the Tashkent power plant. In addition, a June 15, 2004, agreement with China includes energy development as one highlighted area of cooperation. There are also some early signs of interest in privatizing the state oil company, Uzbekneftegaz, but these discussions began more than a decade ago and they usually refer to the company's minor divisions and not the production or exploration divisions. To encourage privatization, the World Bank is beginning an audit and restructuring plan, which is expected to take at least one year. British Petroleum and Shell are possible investors in this privatization. In addition, Baker Hughes gained an option to develop fields in Adamtash, South Kemachi, and Umid in March 2000. While Uzbekneftegaz claims that 60 percent of the country lies on oil and natural gas reserves and that Uzbekistan's oil and gas assets are worth US\$1 trillion,<sup>16</sup> there are no reliable independent estimates of the recoverable reserves and some think they may just be one quarter of what is claimed.<sup>17</sup> The next stages of privatization planning will involve inviting foreign companies to explore reserves and check assets. Until privatization can take place, there are proposals for a plan to rent fields to private companies, which would then sell 50 percent of any product to the Uzbek government at a special price and sell the remainder for private use. Despite the talk of privatization of Uzbekneftegaz, some observers expect that, if it is ever achieved, privatization would have little impact on the oil industry. There has been more private involvement in oil and gas processing, as companies from the United States, Israel, Japan, Romania, and Turkey have participated in projects aimed at upgrading refinery operations.

In addition to bilateral assistance to Uzbekistan's energy sector, there has also been some MDB financing. In association with the water-energy nexus program, the World Bank is trying to identify projects on energy distribution in Uzbekistan, but none have been started. One of the most likely World Bank projects is a heat-electricity station in Surdarya. It is expected that all energy will be sold to Tajikistan and Afghanistan, which, due to its poor energy transmission infrastructure, is expected to be a promising market for Uzbekistan's electricity exports for at least ten years. Other MDB activities in Uzbekistan's energy sector include the EBRD's focus on energy generation and the ADB's focus on high voltage transmission exchange. As in other sectors, the Uzbekistani government would prefer to develop the energy sphere independently and perceives that it can do so less expensively than projects involving high-salaried foreign experts.

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<sup>16</sup> EBRD.

<sup>17</sup> Sharma, et al.



### *Telecommunications*

While Uzbekistan's telecommunications sector is said to be liberalized, in actuality it is not. Uzbekistan's national and international telecommunications companies were merged to form UzbekTelecom in 2000, and the resulting company is still state-owned. The company was expected to be privatized in early 2002, but the Uzbek government has not yet been willing to let go of control. Because UzbekTelecom is expected to retain a monopoly on long-distance and international services, it might be attractive to potential foreign investors. Local fixed-line, data transmission (Internet), and cellular services are more open to competition.

Uzbekistan's land lines are in poor condition and sparsely distributed throughout the country, even by Soviet standards. Although Internet access points are increasingly ubiquitous, Tashkent is by far the best endowed in telecommunications infrastructure (both phone and Internet) of Uzbekistan's cities. While mobile phones are improving the connections of more remote areas, there is a distinct divide between those who can and cannot afford them. There are at least six major mobile service providers currently active in Uzbekistan.

The development of telecommunications infrastructure appears to be much more national in focus than the other sectors explored in this project. Although improved telecommunications certainly have important implications for supporting cooperation among the regional states, the MDBs are not as actively involved in this sector or focus their efforts on a single country. Nevertheless, the World Bank, ADB, the United Nations Development Program (UNDP), and International Finance Corporation (IFC) have all been active in helping to transform telecommunications regulations and infrastructure. In contrast, private companies, especially cell phone and Internet service providers (ISPs), and some nongovernmental organizations, especially the International Research and Exchanges Board (IREX) Interconnectivity Project, are more involved in developing the sector. There is potential for cooperation among the regional states on satellites, which might increase availability and reduce costs of mobile phone and Internet use. Interestingly, despite attempts to assert independence in infrastructure in other sectors and despite foreign donors' interests in separate development of telecommunications infrastructure by each of the regional states, the regional leaders have pushed for an intergovernmental approach to jointly develop satellite and telecommunications systems.<sup>18</sup> Siemens also played an early role in updating the telecommunications infrastructure in Uzbekistan.

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<sup>18</sup> Lee F. Berger, "Proposed Legal Structure for the SilkSat Satellite Consortium: A Regional Intergovernmental Organization to Improve Telecommunications Infrastructure in Central Asia and the Trans-Caucasus Region," *Law and Policy in International Business*, vol. 33, no. 1 (Fall 2001), pp. 99–143.

Bilateral efforts to improve Uzbekistan's telecommunications sector have been started by Japan, Turkey, Great Britain, and Germany. The German KfV Bank is providing funding for modernization of the telephone system in Chirchiq. Arguing that it is necessary to stop thinking about the Internet in schools, especially in the rural areas, for at least ten years, the British Council has begun working with local, private media outlets to develop educational television programs. At the same time, however, NGO efforts, such as the IREX Interconnectivity Project, are working to increase the availability and use of Internet and computing resources in educational institutions throughout Uzbekistan.

## **Tajikistan**

Tajikistan inherited an infrastructure that is incapable of supporting a significant degree of economic development, particularly in terms of hydroelectric power generation, an area where Tajikistan has tremendous potential—only about ten percent of which is currently being utilized. Essentially the country is divided into three separate parts, Soghd in the north, Gorno-Badakhshan to the east, and the remainder of the country. These regions are connected to separate electricity grids, and due to the physical geography and national borders, overland transportation between these regions is impossible for much of the year. As with the infrastructure in the rest of Central Asia, Tajikistan's infrastructure suffers from general deterioration due to lack of maintenance. This lack of maintenance is compounded by the extensive damage to the country's infrastructure as a result of the civil war and numerous natural disasters. Moreover, the country's infrastructure is tightly wound with that of Uzbekistan to the north and west. Though Tajikistan's civil war officially ended in 1997, the security situation is still tenuous, something that is worsened by the isolation of parts of the country, and could be further exacerbated by the Tajikistani government's policy of relocating thousands of Tajikistani citizens to regions without the infrastructure to handle an influx of new migrants.

### ***Transportation***

Of all the Central Asian countries, Tajikistan presents arguably the most difficult challenges for transport infrastructure rehabilitation and development. The poorest country in the former Soviet Union, Tajikistan cannot afford routine maintenance, much less larger projects. In addition, much of the infrastructure was severely damaged during the country's civil war.

These challenges are further compounded by Tajikistan's extremely mountainous terrain, which can make rehabilitation of even the shortest stretches of road extremely expensive. Furthermore, Tajikistan's transportation infrastructure is closely tied with its neighbors', particularly with that of a very uncooperative Uzbekistan, through which most exits lead.<sup>19</sup>

Perhaps the most initially striking characteristic of Tajikistan's transportation infrastructure is the fact that the most of the Soghd *viloyat*<sup>20</sup> is completely cut off from the rest of the country for most of the year due to the snow and ice of two parallel mountain ranges. Moreover, the Penjikent region is located between the two mountain ranges, leaving it cut off both from the south of the country and the Soghd administrative center Khojand to the north. This geographic division has long served to accentuate ethnic and historical divisions between the economically more vibrant and largely Uzbek Soghd region and the rest of the country.

Despite this seemingly obvious infrastructure need, there seems little chance of the situation changing significantly in the foreseeable future. Before the collapse of the Soviet Union, construction commenced of a tunnel through the southern mountain range, at the Anzob Pass. Little progress was made, however, and work ceased completely with the collapse of the Soviet Union and the onset of the Tajikistan civil war. Tajikistani officials cite completion of the tunnel as a priority, and to this end they have enlisted Iranian help. The Iranian firm Sobir is currently working on completing the tunnel, but work is progressing slowly. It is scheduled to be completed in 2006, though most observers find this highly unlikely. In any case, the Anzob Tunnel itself will not secure year-round access between north and south. The Shahrstan Pass, further to the north, is also impassable for much of the year. Though efforts are made to keep it open in the winter, those efforts are often futile, and in any case the road is extremely dangerous with numerous fatalities along the route each year. The Tajikistani government has stated its desire to build a tunnel through the Shahrstan Pass, though no concrete plans seem likely in the foreseeable future.

One important factor to consider regarding construction of the necessary tunnels to secure year round access between the north and south of Tajikistan is the fact that the politics behind tunnel construction have changed in recent years. In the 1990s connecting the two regions was a priority of officials in Dushanbe, who feared that the Soghd region's Uzbek

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<sup>19</sup> Transit through Uzbekistan and Turkmenistan has become sufficiently problematic that commercial traffic from southern Tajikistan to Iran often prefers to travel through northern Afghanistan.

<sup>20</sup> Formerly Leninobod *viloyat*, and before that the Leninobod *Oblast*.

population might seek to join Uzbekistan, with whom their infrastructure was already more closely intertwined. As Tajikistan-Uzbekistan relations worsened in the late 1990s, resulting in border closures and the mining of the border by Uzbekistan, connections between the Soghd *viloyat* and Uzbekistan became far more problematic. At the same time, federal authorities in Dushanbe have gradually managed to assert more firm control in regions of Tajikistan, including Soghd, over which it previously had little if any control. So now it is arguably local officials in increasingly isolated Soghd, rather than federal officials in Dushanbe, to whom tunnel construction is most important.

The geographic division of Tajikistan has proven particularly difficult for the region around the city of Penjikent. Due to worsening Tajik-Uzbek relations, the border between the two countries at this point is quite problematic for the local population.<sup>21</sup> Given that the mountainous terrain already isolates Penjikent from both the southern part of the country and the bulk of the Soghd *viloyat* to the north for most of the year, the added political isolation from Uzbekistan, with which the region's infrastructure is more closely tied, has resulted in a worsening socio-economic situation over the last six or seven years. In this respect Penjikent stands in contrast with the majority of Tajikistan where, since the cessation of the civil war, the socio-economic situation has to varying degrees improved, albeit from a very low level. While completion of the Anzob Tunnel will not result in year-round access between the north and south, it would at least relieve much of the isolation felt in the Penjikent region by giving it year round access to Dushanbe.

Iranian involvement in the Anzob Tunnel project reportedly stems from a desire to establish transportation links with China via the Kyrgyz Republic, Tajikistan, and Afghanistan.<sup>22</sup> However, such links are far more likely to form with the rehabilitation of the road from Dushanbe through the Rasht Valley via Garm and Jirgital to the Kyrgyzstan border. This project is currently being implemented with funding from the ADB, which sees this route as financially far more realistic than the northern route through the Anzob and Shahristan passes. This route also offers the potential to link up with a planned ADB-funded route from Sary-Tash to the Chinese border at Irkeshtam—creating a link between Dushanbe and China that would be far more practical and feasible in the foreseeable future for most of Tajikistan's population than the road across Kulma Pass in Gorno-Badakhshan.

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<sup>21</sup> Citizens of Tajikistan officially registered as residents of the Penjikent region are allowed to transit Uzbekistan to either Khojand (six hours away) or Dushanbe (eight hours away). However, the Uzbekistani border post is notoriously corrupt. As a result, significant levels of commerce, apart from narcotics trafficking, do not cross the border.

<sup>22</sup> Ilhom Jamolov, "Iran Will Build Anzob Tunnel," Varorud Informational-Analytical Agency, accessed August 31, 2004, <[www.varorud.org/english/analitics/glance/jamoliyon.html](http://www.varorud.org/english/analitics/glance/jamoliyon.html)>.

The road across the 4000-meter Kulma Pass opened in May of 2004.<sup>23</sup> In reality though, for trade purposes it is only a practical link for the five percent of Tajikistan's population that live in Gorno-Badakhshan, as Gorno-Badakhshan is difficult to access from the rest of Tajikistan due to poor roads and the extremely mountainous terrain. Projects are underway to rehabilitate various sections of the route from Dushanbe to Gorno-Badakhshan, but the terrain along this route is especially rugged, and it will certainly be several years at best before this entire route is viable for significant levels of trade. Moreover, the Kulma Pass road will also be closed for most of the year due to snow and ice. Nevertheless, with the beginning of regular bus service along the route there are signs that the opening of the route has positively impacted the local population by bringing in goods considerably cheaper than those that previously arrived from China via Kyrgyzstan.<sup>24</sup>

Rail transport does not play a very significant role in Tajikistan. There is a rail system in the south of the country, while an east-west line cuts across the Soghd *viloyat*. There has been little development in this sector, though the southern line was extended from Qurgon Tube to Kulyob. However, some in the international community expressed doubts about the practicality of this project, offering anecdotal evidence that few in fact use this new route.<sup>25</sup>

Aviation plays a significant role in Tajikistan, with flights carrying migrant workers from Dushanbe, Khojand, and Kulyob to various parts of Russia. Air transport also represents the only practical means of transportation between Dushanbe and Khojand and between Dushanbe and Gorno-Badakhshan for most of the year. Both the Dushanbe and Khojand airports have received renovation with EBRD funding,<sup>26</sup> with the Dushanbe airport receiving additional runway renovation from the French government in exchange for allowing the deployment of approximately 150 French troops at the airport for logistical support of French forces in Afghanistan.

More perplexing is work carried out by the Turkish firm Seyas on upgrading the airport at Dangara. Dangara is a small city of 16,900<sup>27</sup> about 100 kilometers southeast of Dushanbe.

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<sup>23</sup> Monica Whitlock, "China-Tajik Border Opened," *BBC News*, May 25, 2004, <<http://news.bbc.co.uk/2/hi/asia-pacific/3745921.stm>>.

<sup>24</sup> Antoine Blua, "Tajikistan: Traders Look to China For Brighter Fortunes," *RFE/RL*, August 20, 2004, <[www.rferl.org/featuresarticle/2004/08/c0cef0db-cd48-4363-b2c9-d82ff48bd7b1.html](http://www.rferl.org/featuresarticle/2004/08/c0cef0db-cd48-4363-b2c9-d82ff48bd7b1.html)>.

<sup>25</sup> Author's interview with representative of the International Crisis Group, May 2004, Dushanbe.

<sup>26</sup> Bank Information Center, "Multi Lateral Development Bank Investment in Tajikistan," February 11, 2004, <[www.bicusa.org/bicusa/issues/Tajikistan\\_MDB\\_summary.pdf](http://www.bicusa.org/bicusa/issues/Tajikistan_MDB_summary.pdf)>.

<sup>27</sup> The World Gazetteer, accessed August 31, 2004, <[www.world-gazetteer.com/d/d\\_tj\\_kt.htm](http://www.world-gazetteer.com/d/d_tj_kt.htm)>.

It is also the birthplace of President Rakhmonov, which most likely explains the investment into what otherwise would seem an insignificant airport.

In general the use of regional infrastructure development as a means of rewarding certain regions certainly does exist in Tajikistan, as it does to a certain extent everywhere. The greater significance of this is less clear, however. First, there is need for infrastructure development everywhere, so there is more than enough justification for implementing projects in any selected location in the country. Furthermore, the region that would seem to benefit most from such favoritism, Rakhmonov's region of Kulyob, specifically around Dangara, was one of the most heavily damaged regions during the war and arguably does have the greatest need for infrastructure development in the country. Nevertheless, some observers do point to such favoritism as a source of tension, with Kulyobis seen by many as excessively favored, while amongst Kulyobis themselves, residents of the Dangara region are reportedly seen as excessively favored by the authorities in Dushanbe.<sup>28</sup> Certainly if the Ministry of Transportation's wish list of projects is any indication, there is a desire to focus a level of investment in the Dangara region that is disproportionate to its population and its needs.<sup>29</sup>

With regard to internationally funded projects—which, given the Tajikistani government's limited resources, constitute the vast majority of projects—donors, by and large, seem aware of the Tajikistani government's deliberate attempts to maneuver them away from, or into, certain regions for political reasons. However, there is clearly a tricky balance to be maintained between unnecessarily alienating the Tajikistani government by shutting them out of the project selection process and allowing them to dictate project selection for their own motives, which in some cases could agitate the country's still tense regional rivalries. As it is, there are certainly sentiments within the Tajikistani government that they are not sufficiently involved in the process of selecting project locations. An official with the Aid Coordination Unit<sup>30</sup> in Tajikistan expressed quite clearly that while he understands that donors do not want to have their work dictated to them, and moreover that they want to work directly with local populations, the Tajikistani government knows best which areas most need assistance and should therefore play the primary role in selecting project *locations*.<sup>31</sup>

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<sup>28</sup> Author's interview with a representative of the International Crisis Group, May 2004, Dushanbe.

<sup>29</sup> See Tajikistan Ministry of Transportation, "Investment Projects in Ministry of Transport [*sic*]," accessed August 31, 2004, <[www.mintrans.tajnet.com/english/invest.htm](http://www.mintrans.tajnet.com/english/invest.htm)>.

<sup>30</sup> The Aid Coordination Unit was formed by a presidential decree on September 28, 2001, and was set up with help from the ADB. It is under the administration of the executive branch of government.

<sup>31</sup> Author's interview with representative of the Aid Coordination Unit, May, 2004, Dushanbe.

### *Water*

Water is predictably a source of tension between Tajikistan and Uzbekistan. A particularly contentious proposal that the Tajikistani government has pushed involves diverting considerably more water from the Zarafshon River in the north of the country for irrigation. The Zarafshon passes through some especially fertile soil in Tajikistan that would benefit from expanded irrigation. However, such a project would have serious consequences for the city of Samarkand, which relies entirely on the Zarafshon for its water needs, and as such is strongly opposed by the Uzbekistani government.<sup>32</sup>

There would appear to be little chance of this plan coming to fruition, as it would be quite costly and require foreign assistance. Given the political implications of such a project, foreign MDBs would certainly not be interested in participating. Moreover, Tajikistan's dependence on Uzbekistan for energy imports would likely keep it from initiating such a provocative project.<sup>33</sup>

Far less expensive, and therefore far more possible, would be the diversion of more water from the Amu Darya, something in which the Tajikistani government has already expressed interest. Uzbekistan and Turkmenistan already complain that Tajikistan takes more from the Amu Darya than the 12 percent it is allotted based on a 1992 agreement. The exact amount Tajikistan draws from the river cannot be precisely determined due to the fact that measuring equipment is either lacking or was destroyed during the civil war. In any case, the Tajikistani government regards 12 percent as too little and has declared its intention to divert more water for irrigation purposes.<sup>34</sup>

Eventually there is also the possibility of Afghanistan significantly impacting water use in the Amu Darya basin. An agreement signed in 1946 between the USSR and Afghanistan allocated nine cubic kilometers of water from the Panj River, a major tributary of the Amu Darya. According to international law, this treaty now applies to Afghanistan and Tajikistan. As of 2002, Afghanistan was only using two cubic kilometers.<sup>35</sup> If long-term stability can be achieved in Afghanistan, an uncertain prospect, then the country would most likely increase agricultural production and draw more water from the Amu Darya. This would obviously have a tremendous impact on all the downstream countries. Thus far, increased water usage by

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<sup>32</sup> International Crisis Group, "Central Asia: Water and Conflict," May 30, 2002, <[www.reliefweb.int/library/documents/2002/icg-uzb-30may.pdf](http://www.reliefweb.int/library/documents/2002/icg-uzb-30may.pdf)>.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

Afghanistan is an issue that the governments involved and the international community have addressed in only a very limited manner.

Though the authorities in Dushanbe voice a desire for new infrastructure projects, they would be wise to focus attention on the rehabilitation of existing structures. Like all of Tajikistan's infrastructure, the country's water system has badly deteriorated due to a lack of maintenance as well as the country's civil war. Canals for irrigation are in very poor repair while public health is suffering tremendously from the poor quality of drinking water in both rural and urban areas. The situation is particularly dire in the Khatlon *viloyat*.

In parts of Khatlon, as well as in a few communities in Soghd, some people's access to water for drinking and for irrigation is actually worsening due to the Tajikistani government's recent policy of population relocation. The Tajikistani government has made an official policy of relocating people from parts of the Pamirs and the Zarafshon Valley to the Beshkent region in the southwest of the country as well as to the Zafarabad region in the west of the Soghd *viloyat*. Officially, the rationale behind this and planned future population transfers is to move populations from regions prone to natural disasters to safer areas. Most observers feel that the real motivation is to increase the percentage of Tajiks in selected border regions and to move people to regions of possible future cotton cultivation. While not exactly forced in the brutal manner population transfers were carried out in the Soviet era, people are clearly coerced into moving. In instances where people's homes have been destroyed by natural disasters, the government only offers assistance on the condition that people move to the regions designated for settlement. In other cases people are offered money to move and promised that the new locations will have water for drinking and irrigation, schools, houses, and everything else they need.<sup>36</sup>

The difficulty is that there is virtually no existing infrastructure in the areas where people are being settled. In Beshkent, there is no water for irrigation, and drinking water must be obtained from a considerable distance. There are no schools and the homes that awaited the settlers were basically just sheds, in some cases without roofs. Moving back to their home regions is essentially out of the question, as doing so necessitates returning any money given to them and then paying high administrative fees to have their resident permits changed. Given that those who received money typically spent it on moving to the region, this means they are essentially trapped.<sup>37</sup>

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<sup>36</sup> Author's interviews with representative of UNDP, May 2004, Dushanbe.

<sup>37</sup> Ibid.



In the resettled villages of the Beshkent region public health has deteriorated even more than elsewhere in southern Tajikistan. Poor drinking water has resulted in rampant typhoid, and although residents express a strong desire to move back to their original homes, they are unable to do so as they lack the means to relocate. Moreover, what water they do have access to must be shared with people from neighboring villages, who have already strained existing resources to the limit.<sup>38</sup>

Though this action has thus far occurred somewhat below the radar of the international community in Tajikistan, some have expressed concern that the Tajikistani government is creating the potential for ethnic conflict given the ethnic and regional differences that exist between these groups and the inability of the existing infrastructure to support the populations of these regions. For its part, the Tajikistani government has expressed a desire for the international community to provide the necessary infrastructure in these communities, something that some in the international community fear would only encourage the Tajikistani government to continue this policy of relocation, thereby increasing the possibility for conflict.<sup>39</sup> This could provide the international community with the difficult choice of essentially aiding and abetting a destructive policy with precarious security implications or doing nothing while a humanitarian crisis worsens.

Also lingering over issues of water infrastructure in Tajikistan is the potential danger of Lake Sarez, the lake formed by an earthquake in 1911 in the Pamir Mountains. It has been argued that an earthquake strong enough to damage or destroy the Usoy dam, the natural dam that was formed in 1911 and created the lake, would result in possibly the most devastating flood in recorded history. The World Bank, together with the Swiss government, is in the process of creating an early warning system that would give warning of an impending disaster. At best, however, such a system can only hope to slightly lessen what would be catastrophic damage from such a flood.

### *Energy*

Tajikistan's energy resources come almost exclusively from its substantial hydroelectric capacity. However, Tajikistan currently uses less than ten percent of its hydroelectric potential.

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<sup>38</sup> Author's interviews with representatives of the UNDP and the International Organization for Migration, May 2004, Dushanbe.

<sup>39</sup> Author's interviews with representative of the UNDP, May 2004, Dushanbe.

In addition, Tajikistan's existing energy infrastructure is in a serious state of disrepair. Accidents are common in the winter and in most of the country electricity is strictly rationed.

As it is, Tajikistan relies on a complex barter agreement with Uzbekistan to meet its energy needs. This is due both to the inability of Tajikistan to meet its winter demand for electricity and to the fact that the north and south of the country are connected to separate electricity grids. The Soghd *viloyat* is responsible for most of Tajikistan's industrial output, excluding the Tursun Zade aluminum plant. Moreover, 99 percent of water for irrigation in Soghd is derived from pumped water, requiring additional electricity.<sup>40</sup> As a result, Soghd suffers from an energy deficit. This deficit is currently met by imports of thermal electricity from Uzbekistan. In return Tajikistan sends power via its southern grid to southern Uzbekistan. This exchange is unfavorable to Tajikistan as import prices are higher than export prices.

Projects are currently in place to address this unfavorable energy exchange. Transmission lines are being extended from Kyrgyzstan's Batken *oblasty* to supply Soghd with hydro-electric power, which is cheaper than the thermal power imported from Uzbekistan. The project was initiated shortly after the replacement of the previous uncooperative Batken administration with a new leader who quickly established good relations with the leader of neighboring Soghd. This endeavor has been highly publicized in Soghd as a testament to the good neighborly relations between the two countries. Perhaps the greatest significance of this project is that it demonstrates the ability for regional leadership, with significant input from local leaders, to develop mutually beneficial projects without prodding from international actors.

Tajikistan is also working with the ADB to address its energy trade with Uzbekistan through the Regional Power Transmission Modernization Project. This project, as the name suggests, seeks to modernize and rehabilitate much of the energy infrastructure involved in the trade between the two countries. Tajikistan is receiving loans totaling \$22.4 million<sup>41</sup> to carry out the project. This is far less than the \$137.6 million<sup>42</sup> Uzbekistan is receiving, but as a condition of receiving the loan, Uzbekistan is to rework the existing trade agreement with Tajikistan so that it is not so unfavorable for the Tajiks. The details of this modification are still being negotiated. This project is seen as ultimately extending to the other countries of the region, possibly including Afghanistan.

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<sup>40</sup> Author's interview with a representative of the Swiss State Secretariat for Economic Affairs (SECO), May 2004, Dushanbe.

<sup>41</sup> The ADB is providing 20 million, while 2.4 million is co-financing from the OPEC Fund. Author's interview with representative of the ADB, May 2004, Dushanbe.

<sup>42</sup> Of this total, 70 million is supplied by the ADB, 49 million by the EBRD, and 18.6 million by Uzbekenergo. Author's interview with representative of the ADB, May 2004, Dushanbe.

Expansion of hydroelectric production is the highest priority of the Tajikistani government. The Soviets were determined to exploit the region's potential and therefore began two major construction projects, the Sangtuda and Rogun dams, the latter foreseen as the world's highest dam. Sangtuda was to produce 670 MW of electricity while Rogun was expected to produce 3600 MW. These projects were envisioned to supply all of Central Asia with power. With the disintegration of the Soviet Union and Tajikistan's ensuing economic collapse and civil war, these projects were never finished.

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*Under the Soviets, the Sangtuda and Rogun dams were envisioned to supply all of Central Asia with power.*

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The resumption of both projects is considered critical by the Tajikistani government. While the prospect of work resuming on Sangtuda has not raised much objection, Uzbekistan is firmly against the resumption of construction on the Rogun Dam. While officials in Tajikistan speak of the project as benefiting the region, Uzbekistan fears the consequences of giving Tajikistan virtually complete control of the Amu Darya. MDBs are also very reluctant to touch any project involving Rogun, due to both the political sensitivity of the issue and to the high cost, which could be as high as one billion dollars.<sup>43</sup>

There are signs, however, that Tajikistan's emphasis on these two projects is beginning to lessen. While Rogun and to a lesser extent Sangtuda have been the stress of all talk on electricity production since Tajikistan received its independence, at a speech in April 2004 by President Rakhmonov, he actually emphasized the need to develop new, and rehabilitate existing, small hydroelectric plants.<sup>44</sup> This shift is likely to please MDBs who are far more likely to invest in such projects.

One innovative project that could perhaps provide a model for elsewhere in the country is the Pamir Private Power project in Gorno-Badakhshan, which is financed primarily by the World Bank and the Aga Khan Fund for Economic Development (AKFED). The Pamir Mountains have brutally harsh winters, with temperatures dropping to -40°C. During Soviet times the region was very heavily subsidized, with imported diesel, often flown in by helicopter, used to provide electricity for heat. With independence these deliveries ceased, and with civil war, in which the Pamiris were generally associated with the opposition, any chance of development ceased as well. While a basic hydroelectric infrastructure was in place, substantial investment was needed in both repair and expansion in order to meet the population's needs.

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<sup>43</sup> International Crisis Group.

<sup>44</sup> Author's interview with a representative of the U.S. Embassy, May 2004, Dushanbe.

With the Pamir Private Power project a unique private-public partnership was established. The International Development Association (IDA) and the IFC, along with the Swiss State Secretariat for Economic Affairs (SECO) and the private partner, AKFED, are supplying the \$31.4 million investment.<sup>45</sup> In addition to rehabilitating numerous hydroelectric plants and transmission lines, the project has set up a private power company, Pamir Power. The company is to collect tariffs from the region's inhabitants. However, since the region's intense poverty precludes the possibility of the vast majority of people paying for their electricity, much of the cost of the project has gone to providing the Tajikistani government with the means of subsidizing a minimal level of electrical consumption by the population. The project is to continue providing such tariff assistance through 2012.

Initial indicators have been promising. In the second quarter of 2003 more electricity was produced than was projected, and revenues from electricity sales were 38 percent above budget.<sup>46</sup> However, the ultimate success of the project will be determined once the ten-year period of tariff subsidization expires.

### *Telecommunications*

Tajikistan suffers from what is arguably the least developed telecommunications infrastructure in the former Soviet Union. The infrastructure is both seriously outdated and in a dismal state of repair. Less than ten percent of the network in Tajikistan is digital. It has also been seriously damaged by numerous natural disasters, not to mention the civil war of the 1990s. Moreover, the telecommunications sector suffers from a lack of skilled professionals capable of maintaining the system they have.<sup>47</sup>

The number of subscribers to the fixed line telephone network of Tajikistan decreased from 262,700 in 1995 to 212,500 in 1999. That number has since risen each year to a total of 242,100 in 2003.<sup>48</sup> Within these figures is a sizable rural to urban split with the former having

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<sup>45</sup> SECO, "Pamir Private Power Project, Tadschikistan: A Project Description," February 25, 2003, <[www.seco-cooperation.ch/imperia/md/content/publikationen/vortraegeundreden/12.pdf](http://www.seco-cooperation.ch/imperia/md/content/publikationen/vortraegeundreden/12.pdf)>.

<sup>46</sup> World Bank, "Tajikistan: Reducing Poverty through Private Infrastructure Services—the Pamir Private Power Project," accessed August 31, 2004, <[www.worldbank.org/wbi/reducingpoverty/docs/newpdfs/case-summ-Tajikistan-PamirPrivate.pdf](http://www.worldbank.org/wbi/reducingpoverty/docs/newpdfs/case-summ-Tajikistan-PamirPrivate.pdf)>.

<sup>47</sup> Paul Budde Communications Pty Ltd, "Tajikistan," last updated May 29, 2004, <[www.budde.com.au/Reports/Contents/Tajikistan-1106.html](http://www.budde.com.au/Reports/Contents/Tajikistan-1106.html)>.

<sup>48</sup> Ibid.

very limited access to fixed line service. Moreover, maintenance is even less frequent in rural than in urban areas, or in extremely isolated urban areas such as the exclave of Vorukh, further exacerbating this split.

There has been foreign investment into the telecommunications sector in Tajikistan. Siemens AG has installed almost 3000 digital switching technology ports and is planning to extend the Transcontinental Asia Europe fibre optic cable (TAE) to Tajikistan. TAE construction is already underway in Uzbekistan, which will simplify the construction necessary for Tajikistan to join the project. This project will dramatically improve Tajikistan's connections with the international community. Siemens also has plans to establish a satellite phone network for Khojand, Gornaya Machta, Khorog and Tavilda, which would link those communities to each other as well as to Dushanbe. The EBRD is also involved in the telecommunications sector. In 2001 they provided a \$13 million loan to Tajiktel, the state telecommunications operator, for the modernization of the country's fixed line network. Other projects include an agreement with Deutsche Telecom AG to connect Germany and Tajikistan via satellite and to modernize the connection between Dushanbe and Khorog.<sup>49</sup>

Mobil communications has grown substantially in recent years. The total number of mobile subscribers rose from 100 to 1600 from 1996 to 2001, and then to 47,600 by 2003. For several years, Tajiktel was the only mobile provider in the country. In 2000 MCTR, a U.S.-based telecommunications company, began operating a joint venture with the Tajikistani company Somoncom. In 2002 Northwest GSM, a Russian-based company, began its own joint venture with Tajiktel.<sup>50</sup> While the growth in mobile communications has undoubtedly improved Tajikistan's telecommunications capabilities, it should be noted that it also exacerbates the divide between those with access to communications and those without. It should be noted, however, that in the long run, mobile communication technology would seem to offer the most realistic means of reducing such isolation, particularly in remote regions.

Internet usage is growing but is still at a very low level. The growth of the Internet is hindered by the poor conditions of the telecommunications infrastructure, which is not capable of handling significant Internet traffic. The number of individuals estimated to have access to the Internet at work, school, or home was 4100 in 2003, up from 2000 in 1999.<sup>51</sup> This total will likely rise somewhat as Internet centers spread rapidly through the major urban centers.

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<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

The first such center was opened in Dushanbe in 2000. They are now widespread in Dushanbe and Khojand.

## **Turkmenistan**

Turkmenistan's infrastructure development is dominated by its efforts to expand its natural gas production and export capabilities and President Niyazov's highly controversial project to construct a massive artificial lake in the Kara Kum desert. Turkmenistan's existing energy infrastructure is not capable of handling the country's massive natural gas reserves. Added to that is the overreliance on pipeline routes through Russia via Kazakhstan and Uzbekistan. New routes through Iran and possibly a major gas pipeline across Afghanistan could change the orientation of Turkmenistan's energy infrastructure significantly. Niyazov's "Golden Century Lake" project, pursued largely at the expense of other parts of the country's deteriorating water infrastructure, has already drawn condemnation from Uzbekistan and much of the international community as most observers feel it is unavoidable that the lake will draw water from the already depleted Amu Darya. While the ultimate completion of this project is uncertain, it probably has greater potential to aggravate political stability than any other single infrastructure project in the region.

### ***Transportation***

Turkmenistan's existing transportation infrastructure offers some advantages for future development that the other countries of the region do not. Most of Turkmenistan's population lives on a fairly simple network of roads and railways running from the Caspian port of Turkmenbashi through Balkanabad (Nebit Dag), Ashgabat, Mary, and Turkmenabat (Charjou). Road and rail connections continue to the south from Mary through Atamurat to Gushgi on the border with Afghanistan and another road link extends southwest from Turkmenabat to the Afghan border at Imamnazar. The largest population center not along these routes is the Dashoguz region in the north, which is connected to Ashgabat by a primitive but drivable road across the Kara Kum desert. Most of these routes lie along generally flat terrain, making rehabilitation of these routes relatively inexpensive. As a result, a very large percentage of the population can be positively impacted by relatively modest investments in transportation infrastructure.

Internally, there is clearly a need to strengthen links with the north of the country. The Dashoguz Welayat offers some parallels with Soghd in Tajikistan: there is a substantial Uzbek population in the region, it is more closely tied historically with Uzbekistan, and its infrastructure is more integrated with Uzbekistan than with the rest of Turkmenistan. The rail route to the southwest crosses into Uzbekistan, which is problematic given the visa requirements and corrupt border officials. Fortunately for residents of Dashoguz, the main road between the two main cities of the Welayat, Dashoguz, and Konye Urgench does not pass through the territory of Uzbekistan, sparing the region from problems such as those in the southwest of Kyrgyzstan.

Projects are underway linking Dashoguz city with Ashgabat by rail and improving the road along the same route. The current road is drivable, but upgrading the road would shorten driving time between the two cities considerably. The rail link was originally scheduled for completion in 2005, though that is perhaps overly optimistic. Turkmenistan Airways offers flights between the two cities on new Boeing planes. Due to government subsidies, the cost of all travel on Turkmenistan Airways is extremely cheap for locals with prices for flights across the country below three dollars, though even that is more than many can afford.

Other transportation projects include the rehabilitation of the road along the country's most important transportation link, the Turkmenbashi-Ashgabat-Turkmenabat route. This route is scheduled to be completed in 2010 and should consist of six lanes along the entire way. Work has begun extending outward from the major cities along the route. For the Ashgabat-Mary section of the road, the Turkmenistani government has secured funding from the EBRD (\$50 million) as well as from the Kuwait Fund for Arabic Economic Development (KFAED) and the Islamic Development Bank (IsDB) (\$20 million total).<sup>52</sup>

There is also Iranian involvement in this project. The Iranian company Dobral is constructing a 26-kilometer link between Bakharden and Archman.<sup>53</sup> Dobral had previously performed work on the Ashgabat-Bakharden section of the same highway. They also worked on a new road between Gowdan and Bajigran linking the two countries. The most celebrated recently developed transportation link between the two countries, the Tejen-Serakhs-Mashhad rail link, opened in 1996, though it is reportedly operating significantly below capacity.<sup>54</sup>

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<sup>52</sup> Kuwait Fund for Arabic Economic Development, <[www.kuwait-fund.org/frames.htm](http://www.kuwait-fund.org/frames.htm)>.

<sup>53</sup> News Central Asia, "Iranian Company to Build Another Road in Turkmenistan," September 21, 2003, <[www.newscentralasia.com/modules.php?name=News&file=article&sid=232](http://www.newscentralasia.com/modules.php?name=News&file=article&sid=232)>.

<sup>54</sup> Richard Pomfret, "Turkmenistan: From Communism to Nationalism by Gradual Economic Reform," March 2001, <[www.economics.adelaide.edu.au/staff/pomfret/turkmenistan.pdf](http://www.economics.adelaide.edu.au/staff/pomfret/turkmenistan.pdf)>.

A project that has been halted for the time being by the Turkmenistani government is the ADB-funded road from Atamurat to the border with Afghanistan at Imamnazar. It is unclear why the project has been postponed, but ADB officials are confident construction will resume soon.<sup>55</sup> This project is of greater interest to Afghanistan as it was initiated to facilitate humanitarian aid to Afghanistan and is seemingly not a high priority for the Turkmenistani government itself.

There have been talks between Turkmenistan and Kazakhstan about developing transportation links along their remote border, but no firm plans have yet been formed. There is little activity between Turkmenistan and Uzbekistan. Due to deteriorating relations between the two countries, as well as the generally uncooperative nature of their governments in general, there is little prospect of regional projects between them given their current leadership.

Significant upgrades have been carried out on the Caspian Sea port at Turkmenbashi. The EBRD extended a \$30 million loan for the project, which EBRD representatives estimate to be about 95 percent complete, in order to modernize the facility and increase capacity. The EBRD envisions the project creating further investment in western Turkmenistan, thus diversifying the region's economy and reducing reliance on oil and gas.<sup>56</sup>

### *Water*

The development of Turkmenistan's water infrastructure, particularly with regard to the implications of that development for the region, is dominated by the massive Golden Century Lake project. Of all potential infrastructure projects in Central Asia, this project likely runs the greatest risk of igniting regional conflict. The project intends to create a massive lake in the Karashor natural depression northwest of the Kara Kum desert. The project began in October of 2000 and it is supposed to take ten years to complete. The total cost of the project has been estimated at six billion dollars, with all of this coming from the state budget.

The Golden Century Lake—entirely the inspiration of the “Turkmenbashi,” President Saparmurat Niyazov—is supposedly going to be created using only drainage water. Uzbekistani authorities and most other observers insist this is not possible and that Turkmenistan will inevitably have to draw additional water from the Amu Darya, causing the situation in downstream

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<sup>55</sup> Author's interview with a representative of the ADB, May 2004, Ashgabat.

<sup>56</sup> Author's interview with a representative of the EBRD, May 2004, Ashgabat.



parts of Uzbekistan, already at a crisis level, to further worsen. In addition, there is speculation that ethnic Uzbeks from the Dashoguz region will be resettled, presumably forcibly or through coercion, to the region around the lake in order to work on cotton farms.<sup>57</sup>

Some observers claim that there are in fact many in the Turkmenistani government who see the potentially disastrous consequences of the project, and that such individuals are attempting to slow the project down in hopes that it will not see completion before Niyazov dies, after which the project will surely be scrapped. However, such officials often lose their jobs in Niyazov's frequent purges for not moving quickly enough.<sup>58</sup> Ultimately, completion of the project seems a genuine possibility, though Niyazov will clearly have to live long enough to see the project through, something that is far from certain.

One consequence already being felt by the project is its effect on MDBs. Many have been frightened off from providing assistance for much needed projects in the water sector, such as the lining of canals and basic maintenance, for fear that this will simply free up money for the Golden Century Lake.<sup>59</sup> This is unfortunate, as such measures would go a long way towards reducing the loss of water that contributes to the disappearance of the Aral Sea and the associated crisis in public health. However, given the outrageous number of newly built, elaborate fountains that are ubiquitous in central Ashgabat, not to mention the Golden Century Lake project itself, it is quite clear that issues of water conservation are of little concern to Niyazov.

The Turkmenistani region that most suffers from water problems is Dashoguz, which feels the full effects of the Aral Sea disaster. Residents of Dashoguz have no choice but to consume highly salinated water. It is estimated that 40 percent of drainage water in the Amu Darya river basin reenters the river, resulting in higher and higher levels of salinization. Even in spring, when higher water levels reduce the level of salinization, tea tastes of salt and water from the tap can sting small cuts and sores. The salinity level of the Amu Darya in its lower reaches can reach as high as two to three grams of salt per liter.<sup>60</sup> UNICEF estimates that only 20 percent of the region's 1.2 million inhabitants have access to clean drinking water. Associ-

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<sup>57</sup> International Crisis Group.

<sup>58</sup> Author's interview with a representative of the European Union's TACIS program, May 2004, Ashgabat.

<sup>59</sup> Ibid.

<sup>60</sup> UN Office for the Coordination of Humanitarian Affairs, "Turkmenistan: Desalination of Drinking Water Needed," *IRINnews*, April 26, 2004, <[www.irinnews.org/report.asp?ReportID=40769&SelectRegion=Central\\_Asia&SelectCountry=TURKMENISTAN](http://www.irinnews.org/report.asp?ReportID=40769&SelectRegion=Central_Asia&SelectCountry=TURKMENISTAN)>.

ated health problems include kidney ailments such as hepatitis and anemia (particularly widespread among children), which afflict as many as 40 percent of the population, according to some estimates.<sup>61</sup>

Given the severity of the health crisis in the region this should be perhaps the foremost priority in Turkmenistan's water sector. Unfortunately the problem is largely disregarded by Niyazov. Though desalinization plants are quite expensive, the money Niyazov has already put into the Golden Century Lake, not to mention the vast sums spent on transforming Ashgabat into some kind of imitation Kuwait City, could have contributed significantly to alleviating the problem.

Despite the large expense, desalinization plants have been constructed, one near Konye Urgench with funding from USAID and another elsewhere in the Dashoguz welayat by UNICEF. However, the plant funded by UNICEF is very small while the one funded by USAID has been something of a disappointment. The Turkmenistani government failed to supply much of the equipment they had promised. As a result, the plant is not operating at the capacity originally envisioned, with only an estimated 15,000 people, or 12 to 14 percent of the local population around Konye Urgench, utilizing the plant's water.

In addition to the direct health problems caused by poor quality drinking water, this region would also seemingly be an area ripe for cross border conflict over water use, given that many of the canals in the Dashoguz region meander across both sides of the Turkmenistani-Uzbekistani border. Moreover, water use on the Turkmenistani side of the border is estimated to have increased by 25 percent since 1991, due to the planting of increasing quantities of wheat, rice, and cotton.

The canal infrastructure of the region has in fact been altered since the two countries received their independence, with each country reorienting the existing canal system so that it stays within national borders as much as possible. For example, Turkmenistan has recently built a new canal that branches off from the Turkmendarya Canal, which itself was begun during the last days of the Soviet Union and completed after independence. This new canal crosses the desert to Dashoguz city. As a result, Uzbekistan shut off three or four canals that flowed to Dashoguz. Currently, only three or four canals still used in the Dashoguz region originate in Uzbekistan. This reorientation of the canal infrastructure, though perhaps not a

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<sup>61</sup> Ibid.

model of efficiency, has not led to the escalation in tensions that one might expect. On both sides of the border the two countries by and large adapted to the change.<sup>62</sup>

In general, rather than blaming problems of water supply on their neighbors across the border, most of the responsibility for water problems is placed on upriver water users, in some cases even those within the same country. This is the case in Uzbekistan with the people of Karakalpakstan, who in part blame the Bukhara and Surkhandarya *viloyats* for exceeding the internal water use quotas set by Tashkent.<sup>63</sup> It seems that, while residents on both sides of the border continue to suffer terribly from the public health crisis, the risk of violent cross border conflict remains low for now.

Turkmenistan also illustrates, perhaps even better than its Central Asian neighbors, the need for a multi-sector approach to dealing with water issues. Given the connection between water, agriculture, energy, and industry it is essential that the relevant ministries coordinate their policies to the greatest extent possible. This need is present in each of the Central Asian states, though it is especially acute in Turkmenistan given the strict, institutionally-ingrained, top-down nature of communication within the Turkmenistani government.<sup>64</sup>

### *Energy*

With substantial reserves of oil and gas, including the fifth largest known reserves of natural gas, Turkmenistan's energy reserves drive its economy. The challenge facing the country is getting its oil and gas to market. The Soviet energy infrastructure inherited by Turkmenistan upon independence handicaps the Turkmenistani energy sector as it routes the majority of oil and gas through Russia. Despite its large gas reserves, the Central Asia Center (CAC) pipeline was the only large export route provided during the Soviet days. Creating new export routes is therefore a priority of the Turkmenistani government.

With the removal of the Taliban and the prospect of future stability, there is hope that Afghanistan will become involved in the future development of the region's energy infrastruc-

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<sup>62</sup> Author's interview with a representative of Counterpart International, May 2004, Dashoguz, Tajikistan.

<sup>63</sup> International Crisis Group.

<sup>64</sup> For more on the need for a multi-sector approach to water basin management, see Daene McKinney, "Basin-Scale Integrated Water Resource Management in Central Asia," prepared for Third World Water Forum: Regional Cooperation in Shared Water Resources in Central Asia, March 18, 2003.

ture. Turkmenistan is already exporting limited amounts of electricity to northwest Afghanistan, and a southwest route through Afghanistan to Pakistan is being investigated by Turkmenistan for the export of natural gas. A feasibility study examining the plausibility of this route is scheduled to be completed by the ADB in 2004. Of the two routes examined (a northerly route and a southerly one), the southern route has been determined to be more realistic, due to both the physical geography and the political situation along the route.

While Afghanistan and Pakistan clearly have interest in pursuing this pipeline, much of the impetus comes from energy-hungry Japan. There is also speculation of India developing interest in the project, though at this point it is difficult to imagine India being eager to invest anything into a pipeline with an unpredictable dictator on one end, their arch rival Pakistan on the other, and conflict-prone Afghanistan in the middle.

Energy is also being sent to Iran. A small natural gas pipeline from the Soviet era that stretches parallel to the Caspian coast in southwestern Turkmenistan still supplies Iran with natural gas. In addition, a 190-kilometer pipeline from Korpeje to Kurtkui in Iran began transporting Turkmenistani natural gas to Iran in 1998.<sup>65</sup> Iran is also receiving energy imports via the Balkanabat-Aliabat electricity supply line. These exports increased following the construction of a 123-megawatt turbine, finished in 2003, at the Balkanabad power generation complex. The Turkish firm Chalyk Energy was commissioned for that project. Chalyk Energy was also responsible for another 123-megawatt turbine at the Abadan (formerly Buzmeyin) power generation complex, which supplies electricity to Ashgabat and the surrounding area.<sup>66</sup> Gas-fired turbines are now responsible for the bulk of Turkmenistan's power generation system. Currently, approximately 80 percent of electricity generated in Turkmenistan is produced by burning natural gas.<sup>67</sup>

Internally, a number of projects have recently been completed or are underway. Among these are an EBRD-financed project to develop hydrocarbon reserves in the Turkmenistani section of the Caspian Sea, west of the Cheleken Peninsula.<sup>68</sup> Four foreign companies—Ukrgezpromstroi of Ukraine, Bornemann of Germany, and Caspro Pipeline Service AG and Ferrostaal Piping Supply GmbH (both registered in Liechtenstein)—as well as the domestic Turkmenneftgazstroi, are currently involved in the construction of a \$59.8 million oil pipeline

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<sup>65</sup> News Central Asia, "Turkmenistan Increases Extraction, Export of Natural Gas," June 19, 2004, <[www.newscentralasia.com/modules.php?name=News&file=article&sid=671](http://www.newscentralasia.com/modules.php?name=News&file=article&sid=671)>.

<sup>66</sup> News Central Asia, "123-Megawatt Power Station Opened in Turkmenistan," November 4, 2003, <[www.newscentralasia.com/modules.php?name=News&file=article&sid=328](http://www.newscentralasia.com/modules.php?name=News&file=article&sid=328)>.

<sup>67</sup> Ibid.

from Korpeje to Balkanabad for shipment to the Turkmenbashi refinery. Currently, oil is transported by tanker north along the Caspian coast to Turkmenbashi. This project is scheduled to be completed in January 2005.<sup>69</sup> The German company Lurgi signed a contract in 1998 to build a gas processing plant and a gas pipeline at the Samartepe field. Previously, gas at this field was processed at Uzbekistan's Mubarek gas processing plant. With delivery to Uzbekistan out of the question now for political reasons, this new processing plant will allow for the resumption of operations at the idle field.<sup>70</sup>

A particularly significant Turkmenistani energy infrastructure project is the construction of a pipeline connecting the massive Daulatabat gas field with Deryalyk station, the collection point for the CAC pipeline. A consortium of Ukgazpromstroi, Caspro, Turkmengaz, and Turkmenneftgazstroi has been approved to build the pipeline at an estimated expense of \$17 million, which will come from the state fund for the development of the oil and gas industry and mineral resources. The Daulatabat gas field is one of the world's largest, with estimated reserves of more than 1.2 trillion cubic meters of gas. However, based on the length of the pipeline and the cost of the project, it has been estimated that no more than 10 billion cubic meters of gas is intended for shipment to the CAC's Russian and Ukrainian customers.<sup>71</sup>

There has also been expansion of very small gas pipelines to many villages. As a result, many have gas that previously did not. This gas, as with most utilities in Turkmenistan, is provided free of charge, though this system is clearly not sustainable in the long term.

An expansion of Turkmenistan's energy export infrastructure could bring much needed capital into the country. However, given the tendency for Niyazov to invest in massive projects that provide little if any economic benefit to the country at large, it is worth questioning the true worth of expanding Turkmenistan's energy export capabilities. Some local observers have indicated that it would be better for these resources to remain underdeveloped for now in hopes that more rational leadership will more effectively utilize them in the future.<sup>72</sup>

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<sup>68</sup> EBRD, Dragon Oil Project Summary Document, accessed August 31, 2004, <[www.ebrd.com/projects/psd/psd1999/4287.htm](http://www.ebrd.com/projects/psd/psd1999/4287.htm)>.

<sup>69</sup> Rigzone, "Turkmenneftgazstroi to Build Korpeje-Balkanabad Pipeline," August 07, 2003, <[http://rigzone.com/news/article.asp?a\\_id=7827](http://rigzone.com/news/article.asp?a_id=7827)>.

<sup>70</sup> Business Information Services for the Newly Independent States (BISNIS), "Turkmenistan Oil and Gas Industry: 2003 Plans," February 19, 2003, <[www.bisnis.doc.gov/bisnis/country/030304txoilgas.htm](http://www.bisnis.doc.gov/bisnis/country/030304txoilgas.htm)>.

<sup>71</sup> News Central Asia, "Consortium to Build Daulatabat-Deryalyk Link Pipe," July 29, 2004, <[www.newscentralasia.com/modules.php?name=News&file=article&sid=110](http://www.newscentralasia.com/modules.php?name=News&file=article&sid=110)>.

<sup>72</sup> Author's interview with a representative of the European Union's TACIS program, May 2004, Ashgabat.

### *Telecommunications*

Turkmenistan's telecommunications sector is underdeveloped. The total number of fixed telephone lines in usage was 374,000 in 2003, up from 237,000 in 1991. The vast majority of the network still uses thirty- to forty-year old analogue equipment. Only approximately 20 percent of the network is digital. Modernizing the telecommunications network is a priority of the Turkmenistani government, and to this end over 20 digital telephone exchanges have been installed.<sup>73</sup>

The largest telecommunications project carried out since Turkmenistan's independence was the construction of a 708-kilometer section of the TAE fibre optic cable. This project was carried out by the Iranian national telecommunications company with assistance from Siemens and Barash Communications Technologies Inc. (BCTI), the U.S. based cellular and paging communications service provider. Other projects include a new telephone link between Ashgabat and Iran, and an exchange in Ashgabat that routes international calls through Turkey via Intelsat. A direct line connecting the U.S. and Turkmenistan was also established, though its 2000 users consist mostly of members of the diplomatic and business community. The Japanese government has provided an estimated \$90 million in grants for further development of the telecommunication sector.<sup>74</sup>

BCTI is the only mobile service provider in the country, having received a 10-year exclusive contract in 1994. The company has been described by some as basically just a single, well-connected individual in the U.S.<sup>75</sup> It is not known what will happen later this year when BCTI's exclusive contract is up, but there are rumors of a similarly well-connected Turkish individual entering the scene.

The Internet appeared on the scene in 1998. The total number of users was estimated at 10,000 in 2002, up from 2000 in 1999. Turkmen Telecom is the country's sole ISP. It has a reputation for slow connections and poor customer service. At one point there were four private ISPs, though in 2000 they had their licenses revoked as the Turkmenistani government solidified its control over the country's Internet traffic. There are very few public Internet centers in the country.

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<sup>73</sup> Paul Budde Communications Pty Ltd, "Turkmenistan," last updated May 29, 2004, <[www.budde.com.au/reports/Category/Turkmenistan-256.html](http://www.budde.com.au/reports/Category/Turkmenistan-256.html)>.

<sup>74</sup> Ibid.

<sup>75</sup> Author's interview with representative of the EBRD, May 2004, Ashgabat.

## Kyrgyz Republic

Kyrgyzstan's infrastructure is currently in a dilapidated state, much of it having gone without significant rehabilitation for decades. The mountainous terrain makes needed rehabilitation even more difficult and expensive. The current state of the country's infrastructure has a negative impact on economic development, public health, and standard of living. Moreover, in the southwest of the country, the current deteriorating infrastructure is resulting in a scarcity of resources, particularly water, which can have an aggravating effect on inter-village, inter-ethnic and cross-border relations. These tensions are aggravated further by the transportation infrastructure, which winds around the borders of Kyrgyzstan, Tajikistan, and Uzbekistan. With the help of international donors, infrastructure development in Kyrgyzstan has already been used as a means of conflict prevention as well as to address public health concerns. However, the potential for localized violence to recur is still very real. Kyrgyzstan also wants to further develop its vast hydroelectric potential, with an eye on ultimately exporting electricity to China along transportation links that the Kyrgyzstani government hopes to develop across the mountainous Chinese border.

### *Transportation*

Development of Kyrgyzstan's transportation infrastructure is beset by many problems. One of the most serious of these problems is the country's physical geography. Like Tajikistan, Kyrgyzstan is almost completely mountainous, making rehabilitation of even short stretches of road or railways tremendously expensive.

Internally, the most significant transportation project since independence has been the rehabilitation of the 625-kilometer Bishkek-Osh road, which serves almost half of the country's population. This population is responsible for more than half of the country's GDP and 80 percent of the country's industrial enterprises.<sup>76</sup> The poor condition of the road, as well as the fact that it was closed for much of the winter, meant that the two largest cities of Kyrgyzstan were largely cut off from one another. The total cost of the project, which was divided into three phases, was over \$250 million. The major contributor was the ADB, with the JBIC contributing as well. Korean and Iranian firms, as well as a joint Kyrgyz-Turkish company,

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<sup>76</sup> Asian Development Bank, "ADB Loan to Kyrgyz Republic to Rehabilitate Bishkek-Osh Road," September 10, 1998, <[www.adb.org/Documents/News/1998/nr1998054.asp](http://www.adb.org/Documents/News/1998/nr1998054.asp)>.

participated in project implementation. The project was completed roughly on schedule, and though quite expensive, it is widely regarded as a very successful project that has had a noticeable and positive impact.

A major priority for the Kyrgyzstani government is rehabilitating and rerouting the road from Osh to Isfana via Batken, creating detours so that the road does not stray from Kyrgyzstani territory. This road currently passes through both Uzbekistan proper and the Uzbekistani enclave of Sokh, and through a piece of Tajikistan north of the Tajikistani enclave of Vorukh. The most problematic part of this route is the Uzbekistani enclave of Sokh.<sup>77</sup> Commercial traffic almost always bypasses the enclave completely, preferring to deal with primitive dirt tracks that avoid it, rather than deal with the corrupt Uzbekistani border officials.<sup>78</sup> Both commercial and non-commercial traffic that does take the direct route through Sokh must often deal with harassment and bribes. The part of the road that crosses Tajikistan is far less problematic. As of spring of 2004, there were no border formalities at all. However, from Batken to Isfana the condition of the road deteriorates dramatically.

So far MDBs have had little interest in funding this route. For one thing, the project would be very expensive, more so than simply rehabilitating the existing route. More importantly, bypassing Uzbekistani and Tajikistani territory, in particular bypassing already isolated Sokh, is seen as potentially divisive and contradicts the aim of regional cooperation that most MDBs claim to have. Privately, however, many officials concede that the local population should not be at the whim of Uzbekistani authorities and corrupt Uzbekistani border guards and expressed the opinion that ultimately a new road bypassing at least Sokh might be the “least bad” option.

Other priorities include the rehabilitation of the route from Osh to Irkeshtam on Kyrgyzstan’s southern Chinese border, via Sary Tash, funded by the ADB. This project would connect with the Dushanbe-Sary Tash road, and potentially with projects linking southern Kyrgyzstan with Uzbekistan. It would therefore become the main link connecting Tajikistan, southern Kyrgyzstan, and the Ferghana Valley with China.

Kyrgyzstan is also connected to China by road via the Torugart Pass. Rehabilitation of the road from Bishkek to Torugart is on the Kyrgyzstan wish list of projects, at an estimated cost of \$189 million. It is also of interest to the Chinese government. The IsDB provided a

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<sup>77</sup> Though Uzbekistani territory is completely surrounded by the territory of Kyrgyzstan, the population of Sokh is roughly 99 percent ethnic Tajik.

<sup>78</sup> Author’s interviews with several Kyrgyzstani drivers in the Batken *Oblasty*, Kyrgyzstan.



\$298,000 grant for a feasibility study and the UN Special Program for the Economies of Central Asia (SPECA) is interested in pursuing the project. There is also the previously mentioned construction of a rail link from Andijan to Kashgar due to start in 2005.

Opinions seem quite mixed with regard to the impact China might have on Kyrgyzstan's development. Many see an opportunity for Kyrgyzstan to benefit from China's growing economy while others point out that the potential benefits are not as great as they seem, given that it is a very remote part of China that borders Kyrgyzstan. There is also widespread popular hostility towards greater Chinese involvement in Kyrgyzstan among much of the population in Kyrgyzstan.<sup>79</sup>

In general, the development of routes to China is of great interest to all the countries of the region because of the potential to link up with the Karakorum Highway to Pakistan. This would give landlocked Central Asia another potential route to the sea and reduce reliance on Russia. It seems unlikely in the foreseeable future, however, that this route will be able to carry an economically significant level of trade.

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Kyrgyzstan also has plans to rehabilitate links with its Central Asian neighbors. There are plans to rehabilitate the Almaty-Bishkek road, which can barely support the level of traffic it receives, though thus far work has only been performed on the Kazakhstani side of the border. The EBRD and ABD are funding the work on the Kazakhstani side, but it does not look like work on the Kyrgyzstani side is imminent. Kyrgyzstan will still benefit significantly from the work on the Kazakhstani side, as the vast majority of the 3-hour drive along the route is within Kazakhstan. Also, the IsDB is rehabilitating the route to Zhambul, Kazakhstan via Talas, perhaps the poorest region of the country. The project is estimated to cost \$14 million and is scheduled to start this year. There are also plans to link with Uzbekistan via road and rail. The EU has commissioned feasibility studies for this route as part of its TRACECA program, though actual work seems a long way off.

Bishkek's Manas Airport has been renovated as part of the deal allowing U.S. troops to be stationed there. Moreover, shortly before the deployment of U.S. troops, the airport received funds for renovation from the JBIC. Most of these renovations involved expansion and repair of the runway and warehouses. The terminal itself still appears much as it always has.

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<sup>79</sup> Author's interview with a representative of the Institute for Regional Studies, April 2004, Bishkek.

## *Water*

In the southwest of the country, water issues have been involved in localized conflicts on a few occasions in the last fifteen years.<sup>80</sup> Though none of these outbreaks of violence have escalated into wider conflicts, they have resulted in fatalities and injuries. Furthermore, large-scale issues, such as problems associated with the bilateral water-energy barter agreements between Kyrgyzstan and its neighbors Uzbekistan and Kazakhstan, often raise the level of animosity among these countries.<sup>81</sup>

Though disputes between Kyrgyzstan and Tajikistan over problems related to water are not as serious as other bilateral disagreements in the region, there are issues between the two countries. In 1996 Kyrgyzstan built a long row of 75 to 100 houses right along the border with Tajikistan, across from the Tajikistani town of Kalacha, and declared it the village of Maksat. The reason for the move was clearly to “Kyrgyzicize” this border region and to keep the Tajik residents of Kalacha from encroaching onto Kyrgyzstani territory, something they had allegedly been doing.

Residents were moved to Maksat from a variety of locations within the Batken *oblasty*. They were promised houses, schools, and water for drinking and irrigation. The situation has similarities with the recent population movements in Tajikistan, though in the Kyrgyzstani case it appears to be an isolated incident, and not part of a wider government strategy. The humanitarian situation is also not as dire as the situation in relocated villages in Tajikistan, as villagers have at least been provided with adequate housing, a school, and a pump for drinking water. It should be mentioned, however, that villagers in Maksat also express a feeling that they were tricked into moving and, if they had the means, would prefer to move back to their original homes.<sup>82</sup>

In Maksat there is still a need for irrigation water. For this, Kyrgyzstan intends to draw water from the Leilak River, which flows from the mountains of Kyrgyzstan north to a densely

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<sup>80</sup> In 1989, clashes over water use and land allocation occurred in Samarkandek, Kyrgyzstan between Kyrgyz and Tajiks. Several deaths and injuries resulted. At roughly the same time there were reportedly other clashes in the Batken District (now Batken *Oblasty*) between Tajiks and Kyrgyz over water allocation. In 2000, the Samarkandek region saw a renewed outbreak of violence. Exact figures are hard to verify, though it seems this outbreak resulted in fewer casualties than the violence in 1989. See Randa M. Slim, “The Ferghana Valley: In the Midst of a Host of Crises,” *Searching for Peace in Europe and Eurasia*, Lynne Rienner Publishers, February 2002, for a synopsis of Ferghana Valley area conflict since 1989 and an analysis of the underlying causes of the area’s violence.

<sup>81</sup> See the section on energy in this article.

<sup>82</sup> Author’s interviews with local residents of Maksat, Kyrgyzstan, May 2004.

populated part of Soghd in Tajikistan. Officials in Soghd insist that this will require Kyrgyzstan to take more than the 22 percent of the water allocated to it in a previously signed agreement. Perhaps more problematic, Maksat is higher in elevation than Kalacha and the drawing of more water will result in a raising of the water table, potentially causing significant difficulties for residents of low lying, agricultural Kalacha.

The matter attracted the attention of federal authorities from Dushanbe, who, much to the chagrin of officials in Khojand, decided not to oppose the Kyrgyzstani project. It is speculated that Tajikistani capitulation was related to the extension of transmission lines for electricity from Batken to Soghd.<sup>83</sup> This energy project is a high priority for the Tajikistani government and as such provided the Kyrgyzstani authorities with significant leverage. While the relatively amiable relations for now between Dushanbe and Bishkek, as well as between authorities in Batken and Khojand, would seem to indicate that this issue is not likely to escalate into something more confrontational any time soon, it is nonetheless a situation worth keeping an eye on.

The southwest of Kyrgyzstan offers other potential flashpoints for localized conflicts. This part of the country, with its winding borders and Tajikistani and Uzbekistani enclaves, is a sometimes contentious mix of Tajik, Uzbek, and Kyrgyz residents and villages. The region has a history of isolated, interethnic conflicts, most notably in 1990 when riots in Uzgen between Uzbeks and Kyrgyz left hundreds dead. In 1989 conflict over water use in Samarkandek and in nearby regions of what is now the Batken *oblasty* resulted in numerous deaths and injuries. Violent clashes, though less severe, erupted again in 2000.

The region's history of conflict along ethnic lines has attracted the attention of the international community. USAID's Peaceful Communities Initiative (PCI) program and Community Action Investment Program (CAIP) have implemented dozens of small-scale projects in the Ferghana Valley and in the mountains of southwest Kyrgyzstan designed to improve water access and reduce tensions over water use. Numerous other small-scale projects have been implemented in the area by various international donors, such as Mercy Corps and ACDI/VOCA, which are implementing many of the PCI and CAIP projects, the UNDP, the German Technical Cooperation (GTZ), and the Swiss Agency for Development and Cooperation (SDC). The relatively well-funded Kyrgyzstani NGO, the Foundation for Tolerance International (FTI), has its hand in projects throughout the region as well. These projects include many small-scale water, electricity, and transportation projects, as well as projects dealing with school repair, the building of recreational facilities, and other small, socially-oriented construction projects.

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<sup>83</sup> Author's interview with a representative of the Association of Scientific and Technical Intelligentsia, May 2004, Khojand, Tajikistan.

There is no shortage of project success stories throughout this region. Access to drinking water has been supplied to many villages and deteriorating, wasteful canals have been rehabilitated, allowing scarce water supplies to go further. However, there are risks associated with such projects. For one, it is too early to determine if these projects will be sustainable in the long term—a priority among international donors. However, mechanisms for achieving sustainability, such as training in maintenance, the formation of water-user committees, co-funding by local communities to create a sense of ownership, and simple promises are not guarantees and it remains to be seen how sustainable these projects will be over the long term.

There is also a sense that “canal fever” has set in, as many villages see opportunities for funding. Selecting villages in which to implement projects must be done very carefully. Hostility can arise in villages that are not selected, particularly those near villages that do receive projects. Indeed donors have reported being approached by villagers with plans for projects in their own villages, after neighboring villages receive projects.<sup>84</sup> Turning away such requests, which is typical, can lead to resentment toward donors and toward the villages in which they work.

However, the good that comes with successfully implemented projects certainly outweighs any potential harm. To be certain that remains the case, it is critical that decisions on project selection be made transparently and with input from people based in the region, whether foreign or local, who are intimately familiar with the dynamics of village-to-village relations in the area. The kind of precise knowledge such decisions require is not present among the vast majority of people, both foreign and Kyrgyz, living in Bishkek.

All organizations dealing with water and conflict in the region must also have a firm grasp of the complicated nature of regional ethnic relations. It is difficult to generalize about ethnic relations in the entire area. For example, the Kyrgyz in one village might dislike the Tajiks but tolerate the Uzbeks, while the reverse might be true in another village. In any case, it is important to realize the difference between ethnic relations in the mountains of southwest Kyrgyzstan and the Ferghana Valley, and other parts of the post-communist world, such as the Balkans or the Caucasus. There is not the sense of centuries-old conflict pitting nation against nation. There is also little sense of any kind of national ancestral homeland, in which other ethnic groups could be seen as, at best guests, and at worst occupiers. There is an understanding that Tajiks, Uzbeks, and Kyrgyz have all lived in this region for centuries and in general people do

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<sup>84</sup> Author's Interview with a representative of Mercy Corps, May 2004, Khojand, Tajikistan.

not dispute these groups' right to exist in the region. This is not to say, however, that all is fine between peoples of the region. Negative stereotypes are the norm, and genuine interethnic hostilities are prevalent.

Clearly the sporadic violence of recent years in the southwest, combined with the sense of ethnic violence and the specter of Islamic radicalism, make the region a magnet for donors and conflict mitigation programs. However, neither the Batken *oblasty* nor the Osh *oblasty* are Kyrgyzstan's poorest region. Most economic indicators show the Talas and Naryn *oblastys* clearly at the bottom. The deteriorating water infrastructure in these regions, and the resulting increase in water-borne diseases, has led to a worsening of what was already a poor state of public health, especially in rural areas.

Britain's Department for International Development (DFID), together with the World Bank, has funded the Rural Hygiene, Water Supply, and Sanitation program in the Talas, Naryn, and Issyk Kul *oblastys*. This \$25.85 million program is already working in over 100 villages with plans to further expand through the completion of the project in 2008. The project is carrying out improvements in infrastructure, promotion of hygiene, and the creation of Community Drinking Water User Unions to administer local water supplies. A positive impact on public health has already been documented. Medical examinations carried out in October 2003 in the villages of Aral and Kosh Dobo showed incidences of the parasitic disease Giardiasis dropped 80 percent and 70 percent respectively from June 2003 when the project began, while cases of Enterobiosis dropped 75 percent and 50 percent respectively.

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*The role of water projects in reducing intervillage and interethnic tension is more difficult to quantify, but providing easier access to water surely lessens one source of tension that has sparked violence in the past.*

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Small-scale water projects have shown that they can have a noticeable, positive impact on the villages in which they work. Improvements in public health have been clearly demonstrated. The role of water projects in reducing intervillage and interethnic tension is more difficult to quantify, but providing easier access to water surely lessens one source of tension that has sparked violence in the past. Though the international community would do well to focus more on the impoverished areas of Talas and Naryn, further pursuing and expanding small-scale water projects, even if some ultimately prove unsustainable, is clearly desirable.

## *Energy*

Energy issues in Kyrgyzstan are dominated by the difficulties associated with the bilateral barter agreements with Uzbekistan and Kazakhstan. All countries involved have broken the agreements at some point. Moreover, the countries' inability to afford maintenance costs means the involved countries' energy infrastructures are all deteriorating.

The deterioration of Kyrgyzstan's energy system has clear implications for the countries downstream. Kyrgyzstan has tried to convince the Uzbeks and Kazakhs to help with maintenance costs. In June 2001 the Kyrgyzstani parliament passed the "Law on the Interstate Use of Water Objects, Water Resources, and Water Management Installations." Within this law was a clause that stated that neighboring countries which receive water from Kyrgyzstan should assist with maintenance costs. Estimates for maintaining the Toktogul Reservoir are between \$15 and \$27 million per year. In addition, the law stated that since water from Kyrgyzstan is essentially state property, countries receiving such water should pay for it. This last part drew a particularly hostile response from Uzbekistan and Kazakhstan.

However, Kyrgyzstan quickly moderated its position. As a result, Kazakhstan agreed to pay a modest fee of \$100,000 for maintenance costs of facilities on the Chui and Talas rivers. Uzbekistan, after an initially hostile reaction, later backtracked, indicating it would consider contributing to maintenance costs of the Toktogul Reservoir.

At the end of this year Kyrgyzstan has plans to resume exports of energy to Russia. A contract was actually signed in September of 2003 with OAO National Electric Stations of Russia, though delivery of energy was halted at the end of 2003. However, it was announced in June of 2004 that over one billion kWh of electricity would be delivered by the end of the year. The delivery of electricity to Russia is facilitated by modernization that reportedly took place at the Toktogul reservoir in 2003, the first such upgrade the facility had received in 30 years. The modernization was reportedly funded entirely from energy export revenue.<sup>85</sup>

The largest projects being pursued by the Kyrgyzstani government in the energy sector are the construction of the Kambarata I and Kambarata II hydroelectric facilities, upriver from Toktogul. These facilities would generate double the electricity currently produced by the Toktogul plant. They could also generate electricity in the winter, while simultaneously allowing for water to be collected at Toktogul for irrigation in the summer. The cost of this would be

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<sup>85</sup> Interfax, "Kyrgyzstan Restarts Electricity Exports to Russia," June 10, 2004, <[www.interfax.com/com?item=Kyrg&pg=0&id=5730671&req=>](http://www.interfax.com/com?item=Kyrg&pg=0&id=5730671&req=>)>.

enormous, however, with Kambarata I alone estimated to have a price tag of one billion dollars. There has not been an evaluation of the potential environmental impact of the project either.<sup>86</sup> However, OAO and United Energy Systems (UES) of Russia are preparing a feasibility study for the project. There will reportedly be involvement by Kazakhstan as well.<sup>87</sup> While the nature of Kazakhstan's involvement is not exactly clear, there has been talk of setting up a Kazakhstani-Kyrgyzstani consortium to develop the project.<sup>88</sup>

Kyrgyzstani officials hope that the construction of these plants will attract interest from China and Pakistan for energy imports. Certainly this would make the project significantly more viable commercially. However, given the terrain, the transmission network required would be extremely difficult and expensive to construct to China, much less to Pakistan.

Internally, much of rural Kyrgyzstan is without reliable electricity supplies. The ADB has plans to address this with the implementation of its Power Distribution to Poverty Areas project, a three-year project that, it is hoped, will begin in 2005. The focus of the project will be the development of mini-hydropower capabilities, renovation of existing systems, the promotion of energy efficiency, and improved management. The ADB will provide a \$16.1 million loan for the project as well as \$1.1 million in grants.<sup>89</sup>

### *Telecommunications*

Due to an investment climate that is rather welcoming relative to the other Central Asian countries, Kyrgyzstan has received a fair level of investment in its telecommunications sector. In 1997 Kyrgyz Telecom established the foundation for digitizing the country's telecommunications network, which as of 2002 was estimated to be 35 percent digital. The number of fixed lines in service was at 394,800 in 2002, up modestly from 332,000 in 1991. Radio-related lines are vital to the country's transmission network, with 75 repeater stations, 42 of which are located high in the mountains. Digital radio relay lines are found only in regions with a high level of economic potential. Much of the national telecommunications infrastructure has been upgraded with assorted projects worth approximately \$49 million, which includes \$27

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<sup>86</sup> International Crisis Group.

<sup>87</sup> Interfax.

<sup>88</sup> McKinney, "Basin-Scale Integrated Water Resource Management in Central Asia."

<sup>89</sup> Asian Development Bank, "Country Strategy and Program Update (2003–2005): Kyrgyz Republic," August 2002, <[www.adb.org/Documents/CSPs/KGZ/2002/CSP\\_kgz\\_2002.pdf](http://www.adb.org/Documents/CSPs/KGZ/2002/CSP_kgz_2002.pdf)>.

million in loans from the World Bank and the EBRD. Internationally, Kyrgyzstan has direct links with over 100 countries. Kyrgyzstan hopes to launch its own communications satellite in the future, though there are as of yet no concrete plans to do so.<sup>90</sup>

Mobile communications has grown tremendously in the last few years. In 1998 there were a total of 1,350 subscribers nationwide. As of September 2003, that number had risen to 127,300. Mobile communications is offered in Bishkek and the Chui *oblasty*, the spa area of the Issyk Kul region, Osh, and Jalal-Abad. There are two mobile operators in Kyrgyzstan, Katel and Bitel. Katel, a joint U.S.-Kyrgyzstani venture, was established in 1994. It has plans to open a second switching center, which will allow it to extend its service over all of the south of the country. Bitel was established in 1998. It has roaming agreements with Finland, France, Germany, Switzerland, Turkey, and the United Kingdom. Bitel has seen its subscriber base rise to 110,000 by September 2003, up from 40,000 in September 2002.<sup>91</sup>

Internet usage in Kyrgyzstan has taken off in the last five years. The number of Internet users in 1998 was estimated at 3,500. By 2002 the total had risen to 152,000. The country has a total of eleven ISPs.<sup>92</sup> Kyrgyzstan's Internet user per capita ratio is the highest in Central Asia. Growth in Internet usage has been facilitated by an ADB loan for education and computers.

As with all of Central Asia, the regional distribution of Internet use is heavily weighted towards the major urban areas, a dynamic that is amplified by the country's relatively high level of Internet use. Approximately 98 percent of Internet users are in Bishkek and Osh, though those cities contain only 22.4 percent of the country's population.<sup>93</sup> Internet centers are widespread in those two cities.

## Kazakhstan

Kazakhstan possesses tremendous oil reserves. Because of this, its infrastructure priorities center on transporting these resources to new markets and lessening their dependence on routes through Russia. Obviously this development is of significant geopolitical importance to many outside powers. Internally, Kazakhstan suffers from the same problems of infrastructure

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<sup>90</sup> Paul Budde Communications Pty Ltd, "Kyrgyzstan," last updated May 29, 2004, <[www.budde.com.au/reports/Category/Kyrgyzstan-255.html](http://www.budde.com.au/reports/Category/Kyrgyzstan-255.html)>.

<sup>91</sup> Ibid.

<sup>92</sup> Ibid.

<sup>93</sup> Ibid.



deterioration that the other Central Asian countries face, though Kazakhstan's more favorable economic situation does provide it with advantages. Security issues as they relate to infrastructure development are not as obvious in Kazakhstan as they are elsewhere in Central Asia, though problems associated with the energy trade with Kazakhstan, Kyrgyzstan, and Uzbekistan warrant monitoring. Furthermore, small-scale violence over scarce resources is a concern, particularly in the rural south.

### *Transportation*

Like elsewhere in the region, Kazakhstan's infrastructure is in an overall poor state of repair. However, like Kazakhstan's economy more generally, the infrastructure for the most part is better than in the rest of Central Asia. There is more money for general maintenance as well as new projects.

Building the capacity of the infrastructure in and around the oil-rich west of the country has clearly been a priority. The EBRD is currently involved in rehabilitating the airport at Atyrau at a cost of \$30 million.<sup>94</sup> In addition, the ADB is involved in upgrading connections between Atyrau and the other major city of the region, Aqtau, with a \$180 million road rehabilitation project that is scheduled to be completed in 2004.<sup>95</sup> The EBRD is also involved in improving the capacity of the port at Aqtau.<sup>96</sup> Moreover, there have been discussions between Kazakhstan and Uzbekistan about building a road between Kungrad in Karakalpakstan and Aqtau via the Kazakhstani city of Beyneu in order to facilitate the delivery of grain from Kazakhstan to Uzbekistan and to promote energy cooperation.<sup>97</sup>

Other priorities include improving connections with the new capital, Astana. The EBRD has invested in upgrading the rail line between Almaty and Astana. In addition, the city's airport has been substantially upgraded. More generally, Kazakhstan received a \$135.7 million loan from the World Bank with the goal of improving general maintenance, building

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<sup>94</sup> BISNIS, "Atyrau Airport Project," August 10, 2001, <[www.bisnis.doc.gov/bisnis/isa/010810KazAA.htm](http://www.bisnis.doc.gov/bisnis/isa/010810KazAA.htm)>.

<sup>95</sup> Asian Development Bank, "Aktau-Atyrau Road Rehabilitation Project," last updated August 16, 2004, <[www.adb.org/Documents/Profiles/LOAN/36235013.ASP](http://www.adb.org/Documents/Profiles/LOAN/36235013.ASP)>.

<sup>96</sup> EBRD, "Long-term EBRD Financing to Rescue Kazak Caspian Port of Aktau," April 16, 1996, <<http://ebrd.org>>.

<sup>97</sup> Interfax-Kazakhstan, November 28, 2002, in "Kazakhstan, Uzbekistan Sign Protocol on Freight Transit Information Exchange," FBIS Document CEP20021128000216.

administrative capacity, improving the enforcement of transport policies and regulations, and improving road safety.

As mentioned previously, the EBRD and ADB are both involved in work on the Almaty-Bishkek road, parts of which are in a very poor state of repair. The road currently struggles to handle a growing traffic volume. This road will also serve as a relatively short but clearly vital connection with the Bishkek-Osh road, continuing on to Sary Tash, where ADB projects to Irkeshtam and the Chinese border to the east and to Dushanbe to the south continue. While the ADB officially has an aim of achieving regional cooperation, this route is certainly of interest to the involved countries in part because it completely bypasses Uzbekistan. This route could ultimately prove to be a vital part of a north-south corridor stretching as far north as Russia and as far south as the Indian Ocean.

Additional projects enhancing links between Kazakhstan and Kyrgyzstan include the electrification of the rail line from Lugovoy, Kazakhstan to Balykchy, Kyrgyzstan via Bishkek, for which the European Commission has commissioned a feasibility study, and the aforementioned rehabilitation along the Zhambul-Talas Suusamyrl Highway.

### *Water*

Kazakhstan's deteriorating water infrastructure has left many without access to safe drinking water. According to the UNDP, 25.8 percent of pipes in the country do not meet sanitary requirements. Moreover, industrial facilities discharge wastewater that municipal wastewater treatment plants cannot handle. As a result, roughly half of the country's population must use water that does not meet minimum standards for salinity and hardness.<sup>98</sup>

The situation is particularly acute in rural areas. Only 9 percent of rural residents have access to piped water. The remainder of rural residents must use water sources such as wells, artesian wells, and springs, which are often not up to sanitary, chemical, and microbiological norms. Over 10 percent of the population in rural areas uses open water sources, where water-borne diseases are often prevalent. The situation is especially dire in the Qyzlorda *Oblasy*, which suffers the full effects of the Aral Sea disaster. In addition to problems associated with water quality, there are also problems with water quantity. It is estimated that over 20 percent of the water supplied is lost through leakages and other sources of water loss.<sup>99</sup>

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<sup>98</sup> UNDP, *Kazakhstan: National Human Development Report*, UNDP, 2003, p. 46.

<sup>99</sup> *Ibid.*, pp. 46–47.

There is currently a heavy concentration of water projects around the Kazakhstani section of the Aral Sea. Most notable of these is the construction of a closure dike, with funding from the World Bank, separating the northern and southern parts of the Aral Sea. In addition to restoring the northern Aral Sea, this project aims to restore wetlands along the Syr Darya, resulting in less drainage water and a decrease in salinization. Significantly, this project was initiated by the local *hakim*, demonstrating, much like the Soghd-Batken electricity project, that local authorities can initiate worthwhile development projects.

While this project would seem to be a potential source of tension between Kazakhstan and Uzbekistan, World Bank officials insist this is not the case. In fact, it is envisioned as a project that could benefit Uzbekistan as well in that the restoration of wetlands could mitigate the impact of flooding along the Syr Darya.<sup>100</sup> Thus far, the project does not seem to have raised tensions between the two countries.

The UNDP is very involved in regional village water projects. The UNDP has also worked to strengthen water-sector NGOs in the region.<sup>101</sup> As of the end of 2003, 15 to 20 water-sector NGOs were in the region, with some receiving funding for water projects from sources including the Canadian government, the Central Asian Regional Environmental Centre, and the Global Environmental Facility.<sup>102</sup> There are also attempts underway to revitalize the fishing industry of the northern Aral Sea, which surprisingly still contains fish populations. There is Israeli and Finnish involvement in such projects. Though the socio-economic situation in the northern Aral Sea region (particularly regarding public health) is still very poor, there seems to be far more reason for hope than there is in the Uzbekistani, southern Aral Sea region. The presence of local input in the decision making process around the Kazakhstani region of the Aral Sea stands in particular contrast to the lack of local input characteristic of the Uzbekistani side.

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<sup>100</sup> Author's interview with a representative of the World Bank, June 2004, Tashkent.

<sup>101</sup> This has been done under the project titled "Building the Capacity of Water Users for Sustainable Development of the Aral Sea Basin within the Framework of the Development and Humanitarian Aid Program for the Aral Region." See UNDP. For further information on the development of local NGOs involved in water issues in the Aral Sea basin, see Erika Weinthal, *State Making and Environmental Cooperation*.

<sup>102</sup> UNDP, *Kazakhstan: National Human Development Report*, UNDP, 2003, p. 65.

Another region of concern is southern Kazakhstan, a very poor area with a substantial Uzbek minority. As part of USAID's CAIP initiative, ACDI/VOCA has carried out a number of small-scale infrastructure projects in this region, including small-scale water projects. As with CAIP projects in the Ferghana Valley region, these projects have the goal of conflict prevention and target villages that show signs of tension, such as those dividing limited water resources.

It is important, however, that Kazakhstani authorities and the international community not neglect other regions where deteriorating or non-existent infrastructure is leading to public health concerns and even inter-village tension. Kazakhstan is an enormous country and there are vast areas of populated territory that are largely unknown to the international community, or even to Kazakhstani officials in Astana or Almaty. Furthermore, it is important not to let the relative prosperity of Almaty and Astana fool one into thinking that such wealth is the norm throughout the country.

A larger, transborder issue that has the potential to negatively impact Kazakhstan involves the expansion of irrigation in China's Xinjiang province. China has begun construction on the Irtysh-Karamai canal, which is projected to divert 5 to 15 percent of the Irtysh River into Lake Ulungur.<sup>103</sup> The Chinese motivation for this project is the expansion of cotton and grain production in Xinjiang. Given much of northeastern and north central Kazakhstan's reliance on the Irtysh River for irrigation and industrial uses, not to mention Russia's use of the river further downstream, the potential for this project to negatively impact areas along the Irtysh River is very real.

### *Energy*

As one would expect, there has been much investment in the energy sector in oil-rich western Kazakhstan. Significant investment has already gone into the Kashagan oil field, which lies under the Kazakhstani part of the Caspian Sea and is the largest oil find in the world in the last 30 years. Royal Dutch/Shell, ENI, ExxonMobil, Total of France, and ConocoPhillips all agreed to develop the field shortly after its discovery in 2000. It is estimated that development of the field will ultimately cost \$29 billion and produce 13 billion barrels of oil. So far there have been numerous delays which have pushed back the date of production from 2005 to

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<sup>103</sup> Ibid., p. 72.

2008. As recently as June 2004 the Kazakhstani government was still disputing the terms of the agreement signed with their foreign investors.<sup>104</sup>

Other projects include the expansion of the Sazankurak field, approximately 150 kilometers to the west of Atyrau. This project is being carried out by the privately held U.S. company, First International Oil Corporation, with funding from the World Bank's IFC. The total project will cost \$40 million.<sup>105</sup> The IFC is also implementing a project in the Karachaganak Oil and Gas Condensate Field of western Kazakhstan's Burlinsky district, with a project that is ultimately expected to more than double oil production there. The project is being implemented by an international consortium, Karachaganak Integrated Organization (KIO), which consists of BG Group plc of the United Kingdom (32.5 percent stake), ENI-Agip of Italy (32.5 percent), ChevronTexaco of United States (20 percent), and Lukoil of Russia (15 percent).<sup>106</sup> In addition, the IFC is investing \$62 million in a project to develop the Akshabulak oil field.<sup>107</sup> Also in western Kazakhstan the World Bank has invested substantial sums into the Uzen oil field. This project involves both physical investments, designed to reduce the rate of decline in oil production at the field, and administrative reforms, designed to boost the administrative capacity of the plant. The project is scheduled for completion in 2005 with a cost of \$136 million.<sup>108</sup>

The EBRD has signed an agreement with Kazakhstan Electricity Grid Operating Company (KEGOC) for the construction of the first section of a new north-south electrical transmission line. The project aims to address problems of energy supply in the south of the country, reduce energy lost in transmission, and promote regional trade in electricity. The total cost of the project is approximately \$89.5 million, of which \$60 million comes from an EBRD loan.<sup>109</sup>

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<sup>104</sup> Heather Timmons, "Kazakhstan Wants a Piece of Its Oil Field," *New York Times*, June 29, 2004, <[www.nytimes.com/2004/06/29/business/worldbusiness/29kazakh.html](http://www.nytimes.com/2004/06/29/business/worldbusiness/29kazakh.html)>.

<sup>105</sup> International Finance Corporation, "IFC Investments in Kazakhstan (selected)," accessed August 31, 2004, <[www.ifc.org/ifcext/eca.nsf/Content/Kazakhstan\\_investment%20table](http://www.ifc.org/ifcext/eca.nsf/Content/Kazakhstan_investment%20table)>.

<sup>106</sup> International Finance Corporation, "Summary of Project Information," accessed August 31, 2004, <<http://ifcln001.worldbank.org/IFCExt/spiwebsite1.nsf/0/c5d222585f92e5d585256b88006e1c3c?OpenDocument>>.

<sup>107</sup> Bank Information Center, "Multilateral Development Bank Investment in Kazakhstan," July 2004, <[www.bicusa.org/bicusa/issues/MDB\\_Investments\\_in\\_Kazakhstan\\_Jun04.doc](http://www.bicusa.org/bicusa/issues/MDB_Investments_in_Kazakhstan_Jun04.doc)>.

<sup>108</sup> *Ibid.*

<sup>109</sup> EBRD, "New Power Link Funded by EBRD and Kazakh Development Bank," March 16, 2004, <[www.ebrd.org](http://www.ebrd.org)>.

As for pipeline construction, clearly much has been written on Kazakhstan's efforts to get its oil to new markets. Likewise, the greater geopolitics of the issue and the desire of outside powers to be involved in the process is well-known. Russia still has the advantage in this regard as refurbishing the existing pipelines that travel from Kazakhstan through Russia is the quickest and cheapest option. However, Kazakhstan certainly wants to diversify its options. The United States would like to see greater Kazakhstani participation in the Baku Ceyhan Pipeline project, though the level of Kazakhstan's participation in this is still uncertain. The Chinese have been aggressively pursuing a share of Kazakhstan's energy resources. The Chinese have already begun construction of a pipeline across Kazakhstan that is ultimately envisioned as stretching across to the western oil fields, in particular to the oil fields at Uzen and Aktobe, where the Chinese have drilling rights. Such a development could significantly alter regional geopolitics. Specifically, it could offer Kazakhstan some leverage with regards to China's plans to draw off water from the Irtysh River.

In terms of region-wide initiatives, the ADB envisions expanding its current Regional Power Transmission Modernization project so that it ultimately includes Kazakhstan.<sup>110</sup> Kazakhstan is also participating in the ADB's Central Asia Gas Transmission Improvement project, which aims to eliminate barriers that impede the efficient operation, trade, and rational use of natural gas.<sup>111</sup> Other regional initiatives include the previously mentioned effort by UES of Russia to route electricity from Kyrgyzstan and Tajikistan through Kazakhstan to Russia.

Kazakhstan also possesses a moderate amount of hydroelectric capabilities. The EBRD has supplied a \$30 million loan to the Altai group of power companies that operate the Bukhtarma and Shulbinskaya power plants along the Irtysh River near Oskemen (Ust-Kamenogorsk). The purpose of this loan is to upgrade efficiency and improve the environmental performance of the plants.<sup>112</sup> However, given that these facilities make use of the Irtysh River, the aforementioned water project underway in China's Xinjiang province has the potential to seriously impact the performance of these facilities and possibly to raise tension between China and Kazakhstan.

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<sup>110</sup> Asian Development Bank, *Report and Recommendation of the President to the Board of Directors on the Proposed Loan to the Republic of Tajikistan and to the Republic of Uzbekistan for the Regional Power Transmission Modernization Project*, November 2002, <[www.adb.org/Documents/RRPS/TAJ/rrp\\_35096-taj.pdf](http://www.adb.org/Documents/RRPS/TAJ/rrp_35096-taj.pdf)>.

<sup>111</sup> Asian Development Bank, *Status Report 2002: The Central Asia Regional Economic Cooperation Program*, September 2002, <[www.adb.org/Documents/CSPs/ECRD/prc\\_in222\\_02.pdf](http://www.adb.org/Documents/CSPs/ECRD/prc_in222_02.pdf)>.

<sup>112</sup> EBRD, *Project Summary Document for AES Altai Power Group Corporate Loan*, accessed August 31, 2004, <<http://ebrd.org/projects/psd/index.htm>>.

### *Telecommunications*

Relative to its Central Asian neighbors, Kazakhstan has an extensive fixed line infrastructure. However, it is aging and insufficient to meet the growing demand. In 1995 there were over 1,900,000 fixed lines in service. This total was close to 2,500,000 in 2003, though at that time there was a waiting list of over 200,000 with a typical waiting time of over three years for installation. Kazakhtelcom, the national operator, is currently carrying out a modernization program and by the end of 2003 the percentage of digital lines was expected to be fifty percent.<sup>113</sup> To facilitate this effort, Kazakhtelcom received a \$110 million loan from the EBRD in 2003.<sup>114</sup> As with the other Central Asian countries, a highly disproportionate amount of fixed line service is located in urban areas.

Mobile communications has taken off in Kazakhstan in recent years. The number of mobile subscribers has risen from 9,800 in 1996 to 1,339,100 in 2003. That figure is approaching 10 percent of the total population. In 1999 two new mobile operators, K'Cell, now the country's largest operator with 964,000 subscribers as of 2003, and K-Mobile, a joint Turkish-Kazakhstani company that is second with 302,000 subscribers, were given 15-year licenses. This increased competition resulted in a drop in prices and the subsequent boom in subscriber numbers. Kazakhstan's original mobile operator, Altel, a joint venture with Metromedia International Group Inc. of the United States, started in 1994, but has struggled since the arrival of competition. Its number of subscribers was at 73,100 in 2003.<sup>115</sup>

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*Public Internet centers can be found in all significant population centers as well as many small towns.*

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Commercial Internet services first appeared on the scene in Kazakhstan in 1996. There were an estimated 6000 Internet users at that time. The total had risen to an estimated 250,000 in 2003. There are three major ISPs, Nursat, Kazakhstan Online, and Astel, with Nursat being the largest.<sup>116</sup> Public Internet centers can be found in all significant population centers as well as many small towns. As with the rest of Central Asia, Internet speeds are generally slow, though Kazakhstan is superior to the rest of the region in this regard.

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<sup>113</sup> Paul Budde Communications Pty Ltd, "Kazakhstan," last updated May 29, 2004, <[www.budde.com.au/reports/Category/Kazakhstan-254.html](http://www.budde.com.au/reports/Category/Kazakhstan-254.html)>.

<sup>114</sup> EBRD, *Project Summary Document for Kazakhtelecom Corporate Loan*, accessed August 31, 2004, <<http://ebrd.org/projects/psd/index.htm>>.

<sup>115</sup> Paul Budde Communications Pty Ltd.

<sup>116</sup> Ibid.

## Conclusion

Given the patterns of past regional conflict, it is extremely unlikely that disputes over water, transport, energy, or telecommunications infrastructure could escalate into larger conflicts on a national or regional level. In the recent past, large-scale Central Asian conflicts have been elite-driven and based on regional divisions, as in the case of the Tajikistan civil war, or they have been an expression of anger towards the central authorities, such as with recent flare-ups in Tashkent or incidents in the Khojand region in the late 1990s. In each case there has also been, to varying degrees, the influence of radical Islam.<sup>117</sup> A potential exception to this rule is Turkmenistan's Golden Century Lake project, which, in addition to exacerbating Turkmenistan's own public health crisis, could have serious consequences for Uzbekistan and quite possibly provoke a strong reaction. Ultimate completion of this project is, however, quite uncertain. It should also be kept in mind that small-scale, localized conflicts over scarce resources between individuals from different villages or attacks against groups over resource use have happened before and could happen again. This is particularly possible where access to water is a contentious issue, and where the transport infrastructure overlaps the new international borders. Furthermore, forced population movements, such as those pursued by the Tajikistani government, to a much lesser extent by the Kyrgyzstani government, and possibly by the Turkmen government in the future, can have a serious detrimental impact on people's access to necessary infrastructure. Such transfers can further strain access to scarce resources, thereby increasing the risk of localized conflicts, although again, wider conflicts are still extremely unlikely to emerge on their own from such infrastructure-based conflict without manipulation by elites or outside forces.

The relatively recent isolation of certain regions due to the layout of the existing infrastructure in relation to the post-Soviet international borders and newly enforced visa regimes can also serve to cut off and further impoverish regions. This is especially true in regions such as Penjikent, Tajikistan and pockets of the Ferghana Valley region. Such isolation, which typically involves communications as well as transportation, when combined with intense poverty, provides an environment that is potentially fertile for radical Islamist influences and unrest more generally. It should be noted, however, that many difficulties associated with regional infrastructure are rooted in the colonial, Soviet-era infrastructure development, and are not simply

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<sup>117</sup> Similar ideas are expressed in John Schoeberlein, "Bones of Contention: Conflicts over Resources," published in Monique Mekenkamp, Hans van de Veen, and Paul van Tongeren, eds., *Searching for Peace in Central and South Asia*, Boulder, Colo.: Lynne Rienner Publishers, 2002. In this work, Schoeberlein examines the nature of past conflicts in Central Asia and their implications for the future.



a product of the Soviet Union's disintegration. The most damaging example is the orientation of most of the region's water infrastructure around cotton cultivation and the devastating effects this has had on the region's environment and public health. More generally, the lack of proper maintenance for much of the region's infrastructure, particularly the rural road network, hampered development during the Soviet era much as it does today. Furthermore, the telecommunications network was woefully inadequate during Soviet times and has by and large improved, in some ways quite significantly, since the collapse of the Soviet Union.

Clearly an important part of promoting regional political stability is promoting cooperation among the countries of the region. However, while reaching political solutions that allow for the less expensive and more integrative option of upgrading existing transportation links is preferable, there are some areas, notably Penjikent, Tajikistan and parts of southwest Kyrgyzstan, that are suffering due to their growing isolation. In cases such as these, the construction of new routes within individual countries will often be the "least bad" option.

The lack of cooperation from Uzbekistan in regional integration has already resulted in the initiation of new transportation corridors that avoid Uzbekistan. Though isolating Uzbekistan, this should not necessarily be seen as a bad thing. Worthwhile projects that can benefit large numbers of people in the region should be pursued even if they result in new transportation corridors that bypass Uzbekistan. It is not advisable to perpetuate the increasing isolation felt by people in some areas who are penned in by transport routes that necessitate transiting Uzbekistan. Moreover, the development of new transportation routes bypassing Uzbekistan could ultimately have a significant impact on that country, thus convincing Uzbekistan to open up. Turkmenistan is perhaps even less cooperative than Uzbekistan. This is not as serious an impediment to regional integration and economic development, however, because Turkmenistan is not as centrally located as Uzbekistan, and is not located along most of the important regional Soviet era transportation corridors.

Though the challenges facing the region are enormous, there has been progress in developing the region's infrastructure. Small-scale water projects have been shown to produce a very tangible, positive, and almost immediate impact on public health in many villages. Such projects should continue to be pursued, with an emphasis on mechanisms to promote sustainability, such as proper training in maintenance, the formation of water user associations, and local contributions to projects in order to create a sense of ownership. While these techniques are not a foolproof means of ensuring sustainability, they do greatly increase the likelihood of projects maintaining long-term viability. While small-scale water projects can have a

very positive effect at a village level, road construction and rehabilitation is an effective way to benefit the general population of larger areas. Upgrading the capacity of the region's road network, the primary means of transportation in Central Asia's poorest areas, increases economic opportunities for many of the region's most isolated inhabitants. Though expensive, the rehabilitation of the Bishkek-Osh road has provided such benefits as has the Kulma Pass road connecting Gorno-Badakhshan with China.

In general, the desire of countries in the region to promote their sovereignty at the expense of greater regional integration through infrastructure development should not be dismissed offhand. Though increased regional cooperation will provide for optimal use of existing infrastructure, and can create the basis for sound future projects, such cooperation is probably more likely once the countries of the region are more secure in their sovereignty. Given the often uncooperative behavior of the governments of Uzbekistan and Turkmenistan, desires to emphasize national sovereignty elsewhere in the region are not entirely irrational. Moreover, the issue of leadership succession hangs over all aspects of regional development. No country in the region can know for certain the nature of the regimes their Central Asian neighbors will have in the future. It is natural that they would want to be careful about integration with countries whose futures are so uncertain.

Despite the fact that many sources of potential regional instability have a strong infrastructural component, the role of infrastructure in Central Asia should still be seen more as a potentially effective means of promoting regional security, rather than a source of conflict. That is not to say that there are not other sources of potential wider instability. Recent events in Uzbekistan have shown that there is strong discontent there directed at Karimov's regime. In addition, though the civil war in Tajikistan ended officially in 1997, continued stability there is not a given. Finally, should Niyazov's Golden Century Lake ever become a reality, the assertions presented here concerning the generally neutral role of infrastructure in regional security would be severely tested. And lingering over all these potential sources of regional conflict are the potentially disruptive impact of outside influences, in particular radical Islamic ideology, as well as the issue of leadership succession. Nevertheless, despite these uncertainties, the role of infrastructure in Central Asia's future should be seen more as a tool of economic development than as a potential threat to regional security.





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