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Risky riparianism: cooperative water governance in Central Asia

Teresita Cruz-del Rosario*[1]

Water governance has emerged as one of the intense and most urgent challenges of the new century, largely due to the threatened nature of water availability and the transboundary character of water challenges. These conditions pose exceptionally high risks for societies that need to address these challenges. Using the concept of risk society as developed by Ulrich Beck, this article illustrates how shared risk among Central Asian countries provides the impetus for developing water governance mechanisms. However, the historical and sociocultural circumstances of these countries pose limits to their ability to craft workable governance arrangements; in particular, the Soviet legacy of centralised command-and-control governance over water and related ethnic tensions among countries. These tensions play out in the demarcation of water boundaries and the subsequent allocation of water resources among the riparian countries. However, these limitations can also be viewed through the lens of 'reflexive governance', which allows for flexibility, hybridisation, uncertainty and even ignorance.

Introduction

Ilianov faces the summer with much trepidation. In the fertile Ferghana Valley in Uzbekistan where he has lived and worked for nearly five decades, Ilianov has enjoyed the abundance of water flowing through the irrigation canals and into his cotton and vegetable fields. Farming has been his craft since the 1960s when the then Soviet Union built a vast network of water infrastructure to provide irrigation to the agricultural fields in the Ferghana Valley.

Following the collapse of the Soviet Union and the declaration of independence by Uzbekistan, Ilianov's farm and those of his fellow farmers have had to depend on the new national government to oversee water distribution. Since independence, the availability of water has been a matter of whether Ilianov's neighbours across the borders—the Kyrgyz and the Tajiks—decide to let the waters flow to the Uzbek side of the Ferghana Valley. Life was simpler then,

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Ilianov thought. Water problems were Moscow's not Uzbekistan's, and certainly not his. He thought of the old Soviet days and his trepidation quickly turned to nostalgia.[2]

Ilianov's predicament mirrors the larger Central Asian narrative of risk and uncertainty exacerbated by tensions among countries that were once subsumed within the Soviet empire. Cross-border conflicts are periodically triggered by an imbalance in natural resource distribution, most notably water. As a shared vital resource among the riparian republics—Kyrgyzstan, Tajikistan, Kazakhstan, Turkmenistan and Uzbekistan—water also constitutes a shared curse. Since the Soviet break-up, each of the republics has had to respond to increasing domestic demand for water, even while all of them recognise that the two rivers—the Amu Darya and the Syr Darya—flow through all the countries, and thus make water management a common concern. However, despite the clearly transnational nature of water flows in Central Asia, the governments of the new independent states have to date largely resisted demands for the development of a regional water management mechanism, such as the one established in the Mekong region (Hirsch 2006).

In this article, I utilise Beck's (1999) notion of 'risk society' to propose a way of overcoming inter-country tensions in Central Asia, specifically with regard to water use and distribution. More pointedly, I argue that transboundary risks, such as water scarcity, are best addressed through new modes of regional governance (see Jayasuriya 2008). Globalisation and the 'intensified interdependence' associated with it have spawned new risks heretofore absent, for which global as well as regionalised spaces of governance are required. An important feature of such new regional governance architecture is its construction as 'webs of regulatory networks' that are constitutive of new forms of statehood which incorporate regional modes of governance into the very fabric of the state (Jayasuriya in this issue).

A risk approach to water governance could potentially achieve better outcomes than the approach Conca (2006: 27) critically refers to as a 'regime concept' of natural resource governance, one that is dominated by the underlying norms of authority, territoriality and knowledge. The 'regime concept' privileges state authority and emphasises scientific rationality as the legitimate source of knowledge. Conca argues that most regime-centred proposals to resolve water governance challenges have been unsuccessful because of poor design features that exclude other groups and actors who often engage in struggles over the use and control of scarce resources. Risk-based governance, on the other hand, 'decentres' state authority, accepts the transnational features of social life, specifically with respect to shared natural resources, and allows for experimentation as a source of legitimate knowledge.

This article consists of three parts. The first builds on Beck's conceptualisation to incorporate Renn's (2008: 2) expanded definition of risk, which includes three additional elements: outcomes/impact, uncertainty and context for risk materialisation. These concepts form part of a more general framework for

assessing the impact of risk and expanding on the nature and complexity of the relationships among the Central Asian riparian countries. I also elaborate in that section on the nature of existing water management arrangements and the historical context for their development. The second part is a discussion of the attempts to manage risks through regional responses, particularly in the use and distribution of water. While numerous efforts to contain potential conflicts over water are laudatory, it is important to note that 'hard law' (for example, international treaties, agreements, international organisations) approaches are constrained because they fail to take into account the sociocultural dimensions of interstate conflict. A predominantly state-centred approach to risk management and water governance is therefore of limited value. The third and concluding part examines alternative 'reflexive' governance arrangements for water management in Cental Asia. The gradual transformation of the state to incorporate regional spaces of governance would permit expanded and more inclusive forms of governance, alongside more active participation and empowered decision making among state agencies. This regional governance process is still at a nascent stage in Central Asian countries. The proliferation of regional initiatives is at best a facade for regionalism, which is yet to be substantiated with regulatory enforcement.

Proponents of 'reflexive governance' provide directions for managing risk through an extension of Beck's notion of 'reflexive modernisation'. Reflexive governance is defined here as the antithesis of instrumental rationality via the incorporation of 'uncertainty, ignorance, heterogeneity, ambiguity, unintended effects, error, and lack of control'; those very aspects of social life which 'modernist problem-solving procedures try to eliminate' (Vob *et al.* 2006: xv). In this regard, governance of transboundary risks requires a Type II governance model (Hooghe and Marks 2003)—one that incorporates flexibility, multiplicity and polycentricity as its core features. Within a Type II structure, flexibility allows for multiple jurisdictions that perform specialised tasks, rather than a Type I governance structure, which is premised on a limited number of non-overlapping jurisdictions operating with a durable architecture and performing generalised tasks. Further, Type II governance allows for intersecting memberships which are often voluntary and expansive, thus incorporating members that might otherwise be excluded (for example, national minorities). Lastly, Type II governance structures have 'low barriers to entry and exit' and are subject to dissolution once the task is completed. This ensures a governance structure with a problem-solving and decision-making orientation, rather than one focused on territorial integrity (Hooghe and Marks 2003: 236–41).

Beck, risk and Central Asia

Beck's influential book *World Risk Society* (1999) embarks on a critique of the 'production of wealth' associated with modernisation, the outcome of which, he

argues, has been the 'production of risk'. It is often said that in the era of late modernity, risk distribution has become the 'central axis of conflict in contemporary society' (Best 2008: 358) and has replaced wealth distribution as the governing logic in societies experiencing late modernity. The power of techno-economic forces, Beck further claims, undoubtedly brought material gains globally. Yet these benefits have now been overshadowed by the unforeseen negative consequences that have shown up, most especially in the sensitive areas of the environment, natural resources, health and human security (Beck 2002, 2006).

The Central Asian experience illustrates the risks that have emerged on a large scale as a result of the Soviet-led industrialisation process. Indeed, Beck's argument extends easily to state-socialist modes of production, where the same aggressive drive for wealth creation has resulted in the production of similar risks. Both economic systems, whether capitalist or state-socialist, ultimately do not differ in their vision for an industrial-led modernisation program.

Consider the economic performance of the Central Asian republics over a period of six decades. In 1940, regional gross domestic product (GDP) was posted at US$12.2 billion. By 1970, GDP had almost trebled. Just before independence in 1991, regional GDP was at US$74 billion, indicating a sixfold increase during the Soviet period (De Schutter 2008: 34). By 1995, four years after the declaration of independence, all countries registered negative GDP growth, suggesting a pattern of sharply declining wealth in the immediate aftermath of the Soviet collapse. Regardless of economic expansion under Soviet rule, current human development indicators are not encouraging and poverty statistics reveal sharp inequalities that are a potential source of social unrest (UNDP 2005). Tajikistan is the poorest of all the riparian republics, with poverty incidence in excess of 50 percent, followed by Kyrgyzstan, whose poverty incidence is over 45 percent of the total population (Starr 2005: 29). Kazakhstan and Turkmenistan, both oil-exporting countries, have lower poverty rates but they are still high enough to pose a cause for concern. In 1998, the poverty incidence in Turkmenistan was 29.9 percent, while in Kazakhstan it was at 38 percent in 2002 (ADB 2004).

Notwithstanding the persistence of high poverty levels, Soviet-led modernisation has also been associated with the emergence of several transboundary risks, particularly in relation to water and energy. Perhaps surprisingly, despite the apparent applicability of Beck's notion of debounded risk to water management in Central Asia, no comprehensive transnational governance mechanism has emerged there to manage water usage and distribution, as in Southeast Asia's Mekong region. Below I explain how water is governed in Central Asia and why, and discuss what risks are involved in maintaining such arrangements.

Current water management arrangements in Central Asia and their limitations

Central Asia's water challenges are best understood within a wider historical context, specifically the forcible creation of the Soviet republics in the 1920s along artificial borders demarcated by Moscow. For over six decades, Central Asia constituted a superimposed series of nations with little correspondence to the ethno-linguistic composition and internal sociocultural realities of the region. Most of the Tajiks, for example, live in either Afghanistan or Uzbekistan, while large Uzbek populations live in Tajikistan and Kyrgyzstan. Different cultural practices and lifestyles—Tajiks are pastoral in contrast to the Uzbek agriculturalists—were temporarily muted and subsumed under an overarching Soviet administrative framework (Starr 2005).

In the 1960s, the Soviet Union centralised the use and exploitation of the Aral Sea through the Aral Sea Plan and converted the region into a 'cotton belt'. Irrigation projects diverted water flows and shrunk the two rivers. Moreover, the Soviet policy of concentrating cotton production in Uzbekistan effectively enshrined highly unequal water use among the riparian republics (refer to Map 1).

Over time, the intensive diversion of water from the rivers for irrigation purposes has caused a drastic reduction in the volume of water in the Aral Sea by as much as 75 percent. Its shoreline has reportedly retreated by more than 120km (Gungoren and Regallet 1998: 19). The resulting environmental degradation through pesticide use and salinisation was accompanied by high disease rates and infant mortality (Khankhasayev and Leitman 2008: 71). The

Map 1. The Aral Sea basin of Central Asia. Source: Micklin (2000).

Aral Sea environmental disaster is reputed to be one of the biggest man-made ecological disasters in the region and perhaps the world (Khankhasayev and Leitman 2008).

Despite their regional character, water problems in Central Asia have implications that extend beyond the borders of the riparian countries. Already, water-related tensions are expected to include China and Afghanistan, as both countries rely on water from the same two rivers that run through Central Asia for their water consumption and energy needs.

Beck's notion of risk is inadequate without the corresponding notion of 'uncertainty', defined by Renn (2008: 2) as the '(un)likelihood of occurrence'.[3] Water relationships among Central Asian countries are fraught with uncertainties with respect to the resource's dwindling availability over time. Sharp decreases in water intake per capita per year (presumably for basic consumption needs) correspond with increased demands for agricultural and pastoral irrigation. In all likelihood, water irrigation demands will outpace demand for consumption needs—a highly risky situation considering the sharp increases in population.

A second source of uncertainty is the distribution of water, especially the unequal allocation between upstream and downstream countries. The two major rivers, the Amu Darya and the Syr Darya, are fed by glacial melt water from the mountain ranges of the Pamir and Tien Shan in Tajikistan and Kyrgyzstan. The Syr Darya is the longest river in Central Asia (2212 km) and flows through four countries—Kyrgyzstan, Uzbekistan, Tajikistan and Kazakhstan. The Amu Darya is shorter (1415 km) but has a higher water-bearing capacity, and also flows through four countries—Tajikistan, Uzbekistan, Turkmenistan and Afghanistan—re-entering the last two several times before reaching the Aral Sea (Allouche 2007: 46).

The distribution of water flows provides an indication of the sources of tension over water use. Of the total water volume, 43.4 percent originates in Tajikistan, 24.4 percent originates in Kyrgyzstan, 9.6 percent in Uzbekistan and 1.2 percent in Turkmenistan. However, under existing water agreements, largely continued from past practices of the Soviet era, the downstream countries (Kazakhstan, Turkmenistan and Uzbekistan) receive 73 percent of total withdrawals from the Aral Sea basin, despite their small 'contribution' to water supplies in region. In contrast, Kyrgyzstan and Tajikistan, which both contribute almost 70 percent of all water supplies, receive only 0.4 percent and 11 percent respectively (Horsman 2001: 71) (see Table 1).

Uncertainties are further evident in the expansion of demand from neighbouring countries. Afghanistan is a downstream country and, despite its troubled situation, there are expectations that its demand for water and energy will increase over the coming years as 40 percent of its territory and 33 percent of its population is located in the Aral Sea basin (Micklin 1991, quoted in Horsman 2001: 78).[4]

Table 1. Average annual flows of the Aral Sea basin

State	River basin (km^3)		Aral Sea basin	
	Syr Darya	Amu Darya	km^3	%
Kazakhstan	2.43		2.43	2.10
Kyrgyzstan	26.85	1.60	28.45	24.40
Tajikistan	1.00	49.58	50.58	43.40
Turkmenistan	–	1.55	1.55	1.20
Uzbekistan	6.17	5.06	11.23	9.60
Afghanistan and Iran	–	21.59	21.59	18.60
China	0.75	–	0.75	0.70
TOTAL	37.20	79.28	116.48	100

Source: Kipshakbaev (2008).

Then there is China, whose demand for both water and energy is beyond doubt. In Central Asia, a complex geopolitical relationship exists between Kazakhstan and the Xinjiang Uigyur Autonomous Region. The Ili and Irtysh rivers rise in China but flow through Astana, Kazakhstan's new capital. China hopes to exploit both rivers to bring economic benefits and hence political stability to the troubled Autonomous Region, whereas Kazakhstan's demands for water and energy will expand with the needs of its new capital. So far, China has been 'unwilling to engage in meaningful cooperation or compromise in the pursuit of its water demands' (Horsman 2001: 81).

Finally, Central Asia suffers from risks that are described by Renn (2008) as 'incalculable', i.e. the current risk assessment and mitigation tools are inadequate and possibility inaccurate. Central Asia's current efforts to enter into various bilateral and regional instruments to coordinate and manage water distribution seem unable to resolve long-standing conflicts. The centralised water allocation quotas that were administered by a command-and-control system have broken down. What was once a risk-free system is today a fragmented mechanism for allocating water use without an overarching authority to oversee its execution.

The inability to forge effective water governance measures in the post-Soviet era lies in the different republics' ongoing efforts to exercise and consolidate their sovereignty since independence in 1991. Legitimacy issues continue to hound all the new states. The difficult process of nation building is best understood against the historical background of the Soviet 'nationalities policy', a version of affirmative action that favoured dominant ethnic groups to occupy and control the organs of the state. This resulted in the creation of 'ethno-republics' (Collins 2002: 2), which in turn produced territorial enclaves across neighbouring countries rather than cohesive states with a distinct national vision.

A host of other conflicts have emerged in the immediate aftermath of the Soviet collapse, many of which relate to the contested new national borders. In early 2008, for example, residents of Tajikistan's Sogh province attempted to destroy a dam built by the Kyrgyz on land being claimed by both countries. The Kyrgyz insisted the dam was well within their borders and border guards were dispatched to prevent the demolition of the dam. Violence did not erupt but uncertainties over border demarcations continue to stoke tensions.[5] Other extreme responses include Uzbekistan's decision to mine its borders with Kyrgyzstan and Tajikistan (Swanström *et al.* 2005: 6).

Nevertheless, since the break-up of the Soviet Union, the different republics have been entering into agreements to manage and reduce such tensions. In the absence of strong state capacity to take over the complex task of water management, most agreements have ultimately perpetuated the old system of water allocations. Moerlins *et al.* (2008: 5) maintain that Soviet use/consumption quotas are still adhered to by the Central Asian republics, 'resulting in a relatively inefficient, non-sustainable and inequitable utilization of this scarce environmental resource'. Moreover, while water quotas were adhered to, the overall regional character of agreements that integrated water and electricity infrastructure among the republics 'broke down' after independence, resulting in a 'fragmented' system (Linn 2008: 2). However, periods of cooperation are also evident, thus suggesting some, albeit temporary, adherence to such agreements. Relationships among the republics can best be described as 'boom–bust' cycles, where cooperation and conflict seem to occur at somewhat regular intervals.[6]

Conclusion: the case for reflexive governance

Since gaining independence in 1991, the riparian republics of Central Asia have embarked on a series of governance experiments. Despite their limited scope, these initiatives have proven that the potential for violence can be contained and palpable gains, however short term, are indeed possible.[7] Yet, regardless of such agreements, current governance mechanisms, according to some observers, are of limited utility with few concrete achievements (see ReliefWeb 2007). They lack democratised structures, meaning stakeholder representatives (for example, consumers' representatives, water users) who can provide a countervailing force to the predominantly state-led make-up of existing regional structures. Public participation in the formulation of agreements and the establishment of decision-making structures is absent. A case in point is the Interstate Commission for Water Coordination (ICWC), established in 1992 for the purpose of achieving water allocation agreements among five countries. The ICWC provides an institutional framework to manage two overarching water challenges for the region: (1) the supervision and regulation of water allocation; and (2) the sanctioning authority via the International Fund for Saving the Aral

Sea (IFAS) (Allouche 2007: 48). At the local level, several water user associations have been formed in Tajikistan and Kyrgyzstan, mainly in response to pressure from international development organisations under an agricultural development framework. These are meant to operate as independent grass-roots-level organisations, but are actually 'dominated by local governance structures' (Schring 2006: 10–1). The latter consist of a court of elders in Kyrgyzstan and a *mahalla* committee in Tajikistan, both of which are embedded in local power structures. Decisions on water use and water allocation favour particular community networks to the exclusion of others, thus limiting access and exacerbating water insecurity.

Further, many of these regional mechanisms, which have been the result of numerous meetings and summits among Central Asian leaders, remain 'hypothetical and theoretical' (Olcott 2000: 137). Water management, to the extent that it occurs at all, is largely a bilateral/trilateral affair, whereby the upstream countries agree to supply water in exchange for gas, oil and coal. Turkmenistan and Uzbekistan prefer to undertake water management through bilateral agreements. When commitments are not fulfilled, a new round of signing rituals takes place. This practice of 'constant renegotiation' signifies unpredictability and a lack of confidence in formal agreements.

Finally, water governance challenges reflect the larger struggles among states to secure their boundaries and establish control over their territories. As noted, during the Soviet era, water and other natural resources were all part of a collective system that the Soviet authorities managed and controlled. In the post-independence period, water, along with land, has been listed as a state asset under newly enacted property laws. This development coincides with the broader trend towards the consolidation of state-centred power structures (Allouche 2007).

Yet, Conca (2006: 381) firmly insists on the 'substantially transnational character' of water governance, which means that formal command structures based on the national unit are ineffective and futile. Instead, he proposes 'flexible and hybridized approaches' (Conca 2006: 386–9) to reflect the increasing transnational character of social and political life. He proposes institutions that accommodate dissenting voices and recognise contested governance arenas which are able to 'construct more complex, diverse, or fluid spaces for fair and effective responses to a growing class of socioecological controversies' (ibid.).

In this regard, the Type II governance model identified by Hooghe and Marks (2003) provides a good fit for Central Asia's current socio-political features. While the different republics are undertaking their own internal nation-building imperatives, a transboundary response to water challenges can be best obtained through a highly flexible design—one that can incorporate multiple jurisdictions without recourse to territorial requirements. In Central Asia, the collapse of fixed boundaries would allow multiple proposals to be treated as a series of experimentations that need not rest on firm territorial demarcations. Also, a

task-specific transboundary water management mechanism would make membership all-inclusive and could therefore include the different ethnic (and other) groups whose water usage and distribution interests are currently hampered by the generalised and non-overlapping jurisdictions of the national state. The current political configurations among Central Asian countries render addressing territorial issues particularly difficult, given that these countries remain trapped within the artificial borders imposed on them during the Soviet era.

This proposed governance model follows firmly from Beck's (2006: 35) conceptualisation of the 'second modernity'—one characterised by the rise of a 'transnational field of forces' and the collapse of the 'fixed foundations for social decisions' which underpinned the instrumental rationality of the first modernity. Reflexive modernity, Beck argues, envisions the everyday experience of social life as one of 'cosmopolitan interdependence'—a large transnational space that transcends national autonomy and transforms national interests into transnational ones. While Beck provides no blueprint for the final contours of this interdependence of nations and communities, he does make a compelling case for the reconstruction of actors and institutions within an expanded regional–global arena. This expansiveness would facilitate cooperation, or at least comply with Conca's (2006) proposal to institutionalise dissent. However, notwithstanding the desirability of reflexive modes of governance for resolving tensions over water usage and distribution in Central Asia, the likelihood of such arrangements emerging in practice will, of course, be affected by the political and sociocultural realities identified in this article.

Notes

1. The author wishes to acknowledge Kallidaikurichi Seetharam of the Institute of Water Policy and Ann Florini at the Centre on Asia and Globalisation for their comments and suggestions. Special thanks to Johannes Linn of the Brookings Institution for pointing out crucial decisions among Central Asian officials with regard to water agreements.
2. Ahmedova and Leitich (2001) provide a useful analysis of the ethnic conflicts in the Ferghana Valley. See also the field study conducted by Mercy Corps Central Asia (2003).
3. Renn (2008) offers a useful taxonomy on the different intellectual traditions which have shaped that concept of risk since the release of Beck's book.
4. A recent report funded by the Asian Development Bank states: 'the need to include Afghanistan in discussions on water rights on the Amu Darya is now acute ... Given the recent history, it can only be projected that Afghanistan's needs in water and energy investment within the Amu Darya Basin are as great or probably even more than the investment needs in Central Asia' (Biddison 2002: 38).
5. For a full account of the border incident, see EurasiaNet (2008).
6. A detailed review of the conflicts over water can be found in Sievers (2002). See also Horsman (2001).
7. Some of the major international water management agreements are: the agreement of 18 February 1992 between governments of the Central Asian countries entitled 'On Cooperation in Mutual Management of Use and Protection of Water Resources from Interstate Sources';

the agreement of 26 March 1993 between heads of state of the Central Asian region entitled 'On Joint Activities on the Resolution of the Aral Sea and Aral Region Problems, Environmental Remediation and Social and Economic Development of the Aral Region'; the agreement of 9 April 1999 between governments of the Central Asia countries entitled 'On Status of the International Aral Sea Rescue Fund (IASFR)'; and the resolution of 6 October 2002 of the heads of state of the Central Asian region entitled 'On Major Focus Areas of the Program of Specific Actions on Improving Environmental Situation in the Aral Sea Basin for the Period of 2003–10'.

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