Central Asia's missing war:
Natural resources as a mechanism for peace and armed conflict

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1. Introduction

When Mikhail Gorbachev signed the official dissolution of the Soviet Union in 1991, there was a lot of uncertainty as to what shape the resulting process would take and what the fifteen newly independent states and their relations would look like. The general consensus, however, was that it would involve a significant degree of conflict. The Soviet Union was an enormous landmass made up of a myriad of national and ethnic groups whose interdependence in almost every aspect of life was seen as too intricate to be neatly and quickly unravelled. This complexity was compounded by the often arbitrary territorial borders drawn by Soviet planners. Though of little consequence during Soviet times when the Union was, for all intents and purposes, a single state, these borders, many of which were unclear and disputed, were seen to have serious implications when the republics became independent. In hindsight, however, the breakup of the Union did not see nearly as much violent conflict as feared, most of the republics resolving their issues by other means.

For many experts, Central Asia, comprising Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan, was the region where violent conflict, both within and between the five republics, was most strongly anticipated. These republics had no previous experience of independent statehood and contain a complex mix of ethnic and national identities (some constructed to a large degree by Soviet planners). Furthermore, the state borders in the region not only frequently run contrary to ethnic divisions, but also separate access to natural resources very unequally, especially with regard to hydrocarbons. In later years, Islamic extremism has come to be seen as an additional security threat in the region, adding further fears of violence. However, Central Asia has not seen any more violent conflict than other areas of the former Soviet Union (FSU), and some would argue that it has been quite stable, at least compared to the Caucasus. Indeed, apart from the civil war in Tajikistan and isolated flare-ups of violence in the Fergana Valley, the Central Asian republics' transition to independent states and subsequent development have been surprisingly peaceful. The purpose of this paper is to investigate why this has been the case when initial predictions were so pessimistic, especially because the very unequal distribution of natural resources in the region seems like such a destabilising factor. Though some scholars point to the lingering effects of Soviet networks connecting elites across the region or a certain wariness of regimes after the violence in Tajikistan, these arguments are vague and far from universally applicable.[1]

Ethnic tension and related separatist movements have been the most prevalent feared cause of violence in the FSU, and with good cause. Soviet nationalities policy was seen to have frozen many pre-existing ethnic conflicts in the region as well as creating

[1] Kipping (2008), p. 316; Swanström et al (2005), p. 33.

further animosity. Upon independence, some of these conflicts did erupt into violence. The Caucasus is the sharpest example, with war breaking out between Armenia and Azerbaijan over the predominately Armenian region Nagorno-Karabakh in Azerbaijan even before independence, as well as separatists in several southern republics of the Russian Federation demanding independence soon after. Furthermore, ongoing tensions between Georgia and two secessionist regions within its territory, Abkhazia and South Ossetia, escalated in 2008 when Russian forces invaded in order to ostensibly defend the rights of these regions' inhabitants from Georgian aggression.[2] Similar conflicts erupted along ethnic and religious lines in Yugoslavia, leading to fierce fighting, ethnic cleansing and NATO intervention. It is therefore understandable that observers would be concerned about the potential for similar bouts of violence in Central Asia, where territorial and ethnic divisions are similarly muddled.[3] Indeed, even actors in the region fear secessionist movements. The Kazakh government moved its capital north partly to pre-empt any separatist sentiment from taking hold in the majority Russian northern regions, and the Kyrgyz government actively fears Uzbek separatism in the Fergana valley.[4]

Yet these worries have not materialised. Much attention has been given to the threat of ethnic violence, as well as the reasons why little of it has occurred. Looking at what she judges as the two most prominent 'flashpoints' of ethnic tension in the region and comparing them to their counterparts in the Caucasus, George draws out three main factors to determine whether or not ethnic separatism is likely in FSU transition states. First she makes the case that Central Asian groups lack the political consolidation and means of organisation afforded similar groups in the Caucasus that had autonomous status in the form of oblasts or republics. In addition to not having the structures to present a united front, this also meant they felt less separate from the centre; a distinction can be made between ethnic diversity, of which there was plenty, and ethnic division, which was less prevalent.[5] The only exceptions in the region are Karakalpakstan in Uzbekistan and Gorno-Badakhshan in Tajikistan. The former has never expressed any serious aspirations of independence, but the latter chose to secede from Tajikistan during that country's civil war. However, the idea that the majority population in Gorno-Badakhshan, the Pamiri, constitute a unitary ethnic group entirely separate from the Tajiks remains a point of contention, as there are several different regional and linguistic groupings among them and regional loyalties mean more to most Pamiri than an overarching Pamiri identity.[6] Furthermore, the nationalists gave up on these aspirations once a peace agreement had been signed that granted them greater

[2] King (2008), p. 2.
[3] George (2009), p. 75.
[4] Chatham House (2013), p. 10.
[5] George, p. 79.
[6] Davlatshoev (2006), pp. 104-108.

representation in the national government. Secondly, nationalisation policy in the Central Asian states has been more ambiguous, focusing more on civic nation-building than an ethnic model. Though George concedes that preferential treatment has often been given to titular groups at local and regional levels, the rhetoric from the centre is much less alienating than for example in Georgia where nation-building relied more heavily on specifically Georgian ethno-linguistic expression. The Kazakh government in particular, with its large Russian populations in the northern regions and cities, saw this as crucial early on to avoid threats to instability caused by its large territory and the presence of parts of the Soviet nuclear arsenal.[7] Finally, she concludes that the support from external actors plays a vital role. Whereas in the Caucasus Nagorno-Karabakh had support from Armenia (and indirectly from Russia) and the Georgian break-away regions from related peoples across the border in southern Russia as well as Moscow, Russia's primary interest in Central Asia has been regional stability and maintaining the *status quo*. In the interest of continuing good economic and political relations, Russia has avoided supporting any Russian separatists in Kazakhstan as long as they are not persecuted or oppressed, to which Astana has obliged. Further, Tashkent has proved outwardly distrustful of Uzbek populations outside its territory, at times linking them with opposition or extremist groups.[8] With these three factors absent, George rules out civil or interstate war based on ethnic separatism in the region. Ethnic tensions have flared up and led to violence in the Fergana valley, but never led to sustained conflict. Furthermore, the roots of these clashes can be traced to factors independent of ethnicity, as will be discussed later.

This is related to another anticipated cause for conflict that has also been widely studied. As borders were generally fluid during Soviet times and often not much more than a formality, observers predicted that border disputes would be commonplace after independence, when national borders became much more meaningful. Though all the republics agreed on the Soviet era republic borders as the new state borders, not even these were always perfectly demarcated, and some of those that were have since been disputed.[9] Most of these disputes have now been settled; long sections of borders have been agreed upon through bilateral negotiation and Soviet era inter-republic leasing agreements have largely been either extended or amicably dissolved. However, Kazakhstan and Kyrgyzstan are the only two states to have reached full agreements on borders and leases, and the sections of borders between the other states that remain to be agreed upon, though small, tend to be the most hotly disputed areas.[10]

[7] George (2009), p. 92.
[8] *Ibid,* p. 97.
[9] International Crisis Group (2002a), p. 1.
[10] *Ibid,* p. 2.

Contrary to what many observers expected, however, these disagreements, though contentious, have not yet led to any violent action. Despite the absence of violent inter-state conflict, the border regimes still present problems for people living in frontier regions. When the Commonwealth of Independent States (CIS) was formed as the Union was dissolved, it was expected to remain an open, visa-free area. However, this soon changed when Russia left the Bishkek Accord and borders became more cumbersome to cross. In addition to this, Tajik guerrilla fighters and Islamists were reported to have crossed into Uzbekistan from Tajikistan (via Kyrgyzstan) in 1999 and 2000 leading the Uzbek authorities to mine (and allegedly extend) the border and introduce stricter controls.[11] This has added levels of crime and corruption to the crossing process, hampering cross-border trade and general travel, which remain extremely important for people living close to the borders, especially those living in the remaining enclaves, which are completely dependent on goods and people passing through foreign territory.[12] These issues have yet to provoke any large-scale violent conflict, though, and although border clashes are likely to exacerbate longstanding disagreements between the Central Asian states, the escalation to direct military conflict is still deemed unlikely.[13] Perhaps unexpectedly, the most serious result of border negotiations arose internally; many people in Kyrgyzstan reacted very negatively to Akaev's concession of considerable border territory to China in his agreements with Beijing, rising in protest (arguably spurred on by opposition politicians) against the regime and ultimately winning concessions from the government.[14] However, this was never a serious threat to the stability of the regime or the country as a whole. Finally, it should be kept in mind that border disputes are rarely pursued for their own sake; contested territories are usually attractive for demographic reasons or because of the presence of resources or good farmland.

The reasons for the tightening of border control are also something that have been looked at a great deal. All the states in the region fear the proliferation of extremist Islam and the movement of Islamists from Afghanistan. The true nature of this threat is still unclear; some argue that the threat of terrorism is used, especially by Islam Karimov's regime in Uzbekistan, to weaken Islamic opposition groups and maintain control. Whereas the ISAF operation in Afghanistan is rhetorically used to accentuate this threat, that conflict has actually weakened Islamic movements form the region, many of whom travelled to Afghanistan and were killed. If anything, the war in Afghanistan has drawn the Islamists away from Central Asia, as evidenced by the Islamic Movement of Uzbekistan (IMU), which now operates out of Pakistan with that country and NATO as its main enemies; the founding

[11] International Crisis Group (2002a), pp. 3-4.
[12] Dresen.
[13] International Crisis Group (2002a), pp. 11, 23.
[14] *Ibid*, p. 18.

goal of making Uzbekistan an Islamic state seems to be all but forgotten.[15] Now that western troops are withdrawing from Afghanistan, though, this may change, and this may be the reason why stability is now predicted to decrease in the region.[16] At the same time, some observers have pointed out that 'war on terror' rhetoric may be just as much for the benefit of western powers; by framing political struggles, not to mention human rights violations, in terms of fighting Islamic extremism, these states may seek to avoid western reprimand and maintain the flows of aid and investment involved with being a partner in the 'war on terror'. The general consensus seems to be that radical Islam is indeed a threat to the internal stability of the Central Asian states, especially Uzbekistan, but not a particularly large one.[17] Extremism sparking an inter-state war is even less likely. Even when Uzbek forces conducted air strikes on IMU positions in Kyrgyzstan in 2003 and inadvertently killed Kyrgyz civilians the Kyrgyz authorities did little more than lodge a formal complaint and suggest closer cooperation over anti-terrorism operations.[18]

The final proposed source of conflict, which has received much less scholarly attention, is the very unequal distribution of natural resources in the region, both amongst and within the five republics. War over resources may come across as old-fashioned, belonging more to colonial times than today. However, that does not mean it is any less prevalent, only that the rhetoric surrounding conflict has changed. States may no longer cite the capture of resources as a *casus belli*, but scarcity may just as well lead to conflict, especially if combined with other more justifiable factors. It is therefore the express aim of this paper to explore this aspect of potential conflict and determine why the region's resource inequality, which has led to repeated disputes, has not yet flared up to sustained violence. First an overview of the theory pertaining to the role of resources in violent conflict will be provided. This will be followed by detailing the natural resource distribution in Central Asia. This has in the past tended to focus on the reserves of oil and gas in the three energy producing states and their role in international energy politics, particularly with respect to Russia and China. This paper will look at how these resources are used as a political tool within the region against the states that do not possess sizeable hydrocarbon reserves and the conflicts this has led to. The role of other resources, such as mineral and agricultural ones, will also be mentioned here, but as these resources are neither as plentiful nor as securitised as energy resources, they are not as relevant for the discussion. The focus will then shift to the role of water as a transnational resource in the region. Being controlled mainly by the two non-producers of hydrocarbons, this can be presumed to help even out

[15] Zenn (2013), pp. 72-74.
[16] Blank (2012), p. 153.
[17] Akbarzadeh (2004), pp. 697-698.
[18] *BBC News* (2003).

the imbalance. However, instead of mediating conflict, this nexus of water and energy has only exacerbated disputes and most attempts at effective cooperation in this area have failed. This has also been covered by scholars before, but more through the lens of environmental concerns, especially with regard to the desiccation of the Aral Sea. However, this and other water issues are being increasingly studied with regards to regional security and cooperation. It will here be studied more with respect to armed conflict in order to attempt to determine why all efforts to manage the region's water have failed from a political perspective and, more importantly, why this failure still has not led to war over what is becoming an increasingly securitised resource. In addition to looking at other stabilising factors, such as the greater geopolitical situation in the region and the lack of other serious points of conflict or the funds to finance it, I will try to engage with research conducted on the causal relationship between resource scarcity and conflict. The general consensus seems to be that though the Central Asian states experience quite strained relations at times, none of their disputes have been serious enough to escalate to war, at least not weighed up against deterring factors. The water issue is the only one that might come close, but the scarcity has not yet reached the point where it is an existential threat to any of the states and as long as efforts to manage water demand are comparatively cheaper and less risk-prone than armed conflict, war is not likely to break out.

As much research on the topic suggests that internal conflict is much more likely as a result of resource scarcity than interstate war, this will also be explored here. The domestic conditions vary widely in Central Asia, but several of the states have experienced episodes of violence, some of which can be linked to water scarcity. I conclude that the main reason this has not been more widespread is that the energy exporting states in the region, the ones for whom water scarcity is more acute, so far have enough foreign revenue to maintain stability through coercion or the sharing of rents, but suggest that as the water situation becomes ever more acute all the states may be forced to pursue more unpopular demand management measures that could threaten internal stability.

Finally, it would remiss to discuss conflict in Central Asia, and especially the relative lack thereof, without touching on the civil war in Tajikistan from 1992 to 1997. As with all conflicts, the civil war had many different root causes and ethnic divisions and distribution of resources did play their part. However, the conflict is generally ascribed to a struggle for power in the vacuum left over after the dissolution of the Soviet Union and the collapse of the Tajik economy and government institutions. Initially the war definitely had an ideological component, with advocates of liberal and democratic reforms allying with Islamic groupings to create a modern state with broad regional, ethnic and religious representation. Opposed to this were the conservative Soviet-era elites wishing to maintain the old system and patronage networks to their own advantage. However, what began as a struggle over the

very definition and direction of Tajikistan quickly devolved into a 'contest over control of power in the new state', with people turning to clans and regional groupings to provide the security no longer guaranteed by the government.[19] As such, any in-depth discussion of the Tajik civil war, except where issues of resources are prominent, does not fit within the scope of this paper. It is important to note that the extreme poverty in the republic and lack of readily exploitable natural resources were factors contributing to the weakness and eventual collapse of the Tajik state, but other causal links between both resource wealth and scarcity have been suggested, and those will be explored here.

2. Mechanisms for conflict: The link between resources and war

For as long as people have fought wars, resources have been an integral aspect of the equation; waging war is expensive, meaning that certain resources are necessary in order to do so, but many wars have also been fought over the access to resources, or at least with resource gain as a significant secondary impetus for or side benefit of wars fought on other grounds. However, direct causality has been difficult to pin down, though many theorists have attempted to establish direct causal links between resource availability or scarcity and the advent of civil or interstate war.[20] For some, the end of the Cold War saw something of a paradigm shift, at least in rhetoric, as east-west ideological grounds for war largely disappeared. More importantly, though, the funding from the United States and the Soviet Union for warring sides who framed their conflicts within this global struggle suddenly disappeared, and so resources to fund warfare became much more important for those engaged in it. Furthermore, many regimes who had received political and economic support from one of the two superpowers suddenly found themselves with much poorer finances and began a much more concerted effort to control the resources on their territory or that of their neighbours, something that usually required the increased use of force. As a result, resources moved from being strictly a means to conflict to becoming its end in itself.[21]

Le Billon examines several hypotheses about the link between resources and conflict, illustrating how even the most basic assumptions face objections that make it very difficult to generalise. The *scarce resource wars hypothesis*, the idea that people fight to secure access to scarce resources necessary for survival, seems very intuitive and has been articulated by many scholars.[22] However, many poor states remain relatively peaceful. Four main objections are posited: firstly, scarcity need not lead to conflict, but may also spur innovation and economic diversification. Secondly, localised scarcity can be

[19] Lynch (2001), pp. 50-55.
[20] see for example Galtung (1982), Percival & Homer-Dixon (1995), Le Billon & Cervantes (2009).
[21] Le Billon (2001), p. 562.
[22] see note 20, Renner (1996).

counterbalanced by international trade and other market mechanisms if the correct policies are followed. Thirdly, if a state is poor in resources it may be more dependent on diverse financial inputs from society, making it more accountable to its various economic actors, and therefore less prone to violent conflict. Finally, without resource revenues, human capital becomes comparatively more important and valuable, and so developing this one resource is crucial. With a more educated and valuable populace, the likelihood of war decreases.[23] These are all valid counterarguments to the causal link between resource scarcity and violent conflict. Indeed, it leaves us with the vague conclusion that resource scarcity can lead to war, but it can also lead to increased cooperation.

2.1. Resource abundance

To further complicate the picture, the opposite conjecture exists: an abundance of commodities that are highly taxable or lootable is attractive to elites and their competitors, which may lead to conflict. Moreover, natural resource abundance is often linked to poor governance and economic growth and diversification, which are often associated with a greater possibility of violent conflict.[24] This is also one of the six mechanisms suggested by Humphreys to explain the link between natural resources and conflict. States that rely on resource rents may lower taxes to placate the population, but this means that the regime has few incentives to cement any real legitimacy and broad political engagement, nor build any strong institutions. This may not be problematic in and of itself, but may lead to conflict when combined with what he calls the grievance mechanism. In his view, conflict can arise from an unequal or unjust distribution of resource wealth, along with other grievances, such as environmental ones, that result from extraction processes. Conflict may then be sparked by external market shocks which only exacerbate these inequalities.[25] Using quantitative data (mainly from Africa) he finds that these two mechanisms (as well as a third, based on the low levels of social and economic cohesion resulting from Dutch disease) are able to illustrate statistically significant correlations between resource availability and conflict. He finds less support for his other mechanisms, however, leaving the effects of rebel and outsider greed and the ability of resource wealth to further finance conflict (called the feasibility mechanism) unclear.[26]

It is clear that there are other factors that must be taken into consideration for any workable models to be suggested. The nature of the resources in question is sometimes considered important: the proximity of resources to centres of power may influence the

[23] Le Billon (2001), p. 564.
[24] Schwartz (2008), p. 600; Le Billon, p. 565.
[25] Humphreys (2005), pp. 511-512.
[26] *Ibid*, pp. 524-526.

likelihood of a rebel group or foreign state attempting to seize it by force, as may the lootability of a resource. Linked to this is the concentration of a resource in a certain area. Point resources (concentrated in a small area) are obviously easier to capture and control than diffuse ones, and the ease or difficulty with which a resource can be extracted, processed and sold for hard currency also plays an important role.[27] For example, oil wealth, because of the localised concentration of deposits, often far from a state's centre, as well as its ease of extraction once the infrastructure is in place, has often been linked to the onset of violent conflict, especially separatist struggles.[28] At the same time, if resource wealth is seen to be well within the control of a weak central government, this can act as a 'prize' for state seizure and increase the chances of an armed coup. It is therefore necessary to explore what kinds of resources exist in Central Asia and determine whether they are proximate or distant, point or diffuse, and easily lootable in order to make any attempt to determine how likely they are to lead to conflict or cooperation.

2.2. Resource scarcity

These theories all deal with resource wealth and its potential to cause conflict. Just as important in Central Asia, as resources are so unequally distributed, is the nature of resource scarcity. This has been the subject of a lot of research, and the general agreement seems to be that resource scarcity in a country is at least one potential cause of armed conflict, either within that country or with another state.[29] Though the absolute decrease in available resources has not seen a strong causal link with conflict, this association has been made when such a decrease is combined with population increases or migrations, as well as unequal access to scarce resources within a society.[30] For a resource scarcity to lead to conflict, especially between two or more states, it has to be sufficiently securitised. It tends to be easier and cheaper to substitute a scarce resource with something similar or trade to acquire it than to forcibly seize it.[31] Hydrocarbons stand out as a prime example, but for many of their uses even they can be substituted, for example with other forms of energy generation. Generally, renewable resource scarcity is more associated with conflict within a country than between two or more; since the first world war, only two conflicts over renewable resources have escalated to war.[32] However, Ohlsson points out that in cases of resource scarcity, a state only has two options: it must either increase the supply of said

[27] Le Billon (2001), pp. 569-574.
[28] Ross (2004), p. 342.
[29] see notes 20 and 22.
[30] Homer-Dixon (1994), pp. 20-23.
[31] Gleditsch (1998), p. 383.
[32] Homer-Dixon (1994), pp. 18-19.

resource, or manage the demand for it.[33] It has been pointed out that developing countries, which are often more reliant on natural resources in the first place, often have more poorly-defined property rights than richer states, which can be a serious obstacle to strategies that aim to manage demand of a resource, such as innovation and investment into more efficient extraction and use.[34] This might force states to seek to increase supplies of the resource, which will inevitably bring them into conflict with other states.

In terms of interstate war, Homer-Dixon highlights water as the most likely renewable resource to lead to conflict in the case of scarcity, especially where the downstream riparian is significantly stronger than its upstream neighbour.[35] The situation in Central Asia makes this particularly relevant here. Ohlsson still insists though, that internal conflict is more likely in the case of water. His research concludes that the potential to increase water supply is at most ten percent, and that when it comes down to it war is the 'most wasteful and resource-demanding way of managing a resource scarcity' and moreover 'futile' in the case of water scarcity.[36] Therefore, states will be forced to manage demand. This should involve three aspects: managing demands from different sectors of society and distributing the resource in an as equitable way as possible, while encouraging responsible use; implementing technological innovation in order to increase the efficiency of the water used; and facilitating more far-ranging socio-economic structural changes to encourage water to be used for uses in which it can be most efficiently exploited.[37] The first of these most basically involves pricing water in such a way that people and businesses use it more efficiently. This would also facilitate the second aspect, though as mentioned above this may be hampered by poorly defined property rights. However, suddenly putting a price on what was once a free good will never be popular, and if not implemented extremely carefully, this could lead to a further marginalisation of the poor as larger corporations and richer farmers can afford to buy more water at their expense. If not managed, this can easily increase the risks of civil unrest. The same is true for the third aspect, which Ohlsson calls 'allocative efficiency'. It involves offering incentives for industries that can use water efficiently and conform with the state's comparative advantage, and discouraging production that could be more efficiently be substituted with imports, such as the intensive and inefficient agriculture in Central Asia.[38] In countries were such industries are managed by certain interest groups or involves significant amounts of people, a complete structural change could cause significant upheaval. These conflicts would of course not be a direct result of resource scarcity, but

[33] Ohlsson (1999), p. 211.
[34] Maxwell & Reuveny (2000), p. 302.
[35] Homer-Dixon (1994), p. 19.
[36] Ohlsson (1999), pp. 216-217, 227.
[37] *Ibid*, p. 230.
[38] *Ibid*, pp. 220-221.

rather a reaction by segments of the population to unpopular efforts by the regime to manage demand of a scarce resource. There are objections to this theory, mainly surrounding two ideas. Firstly, resource scarcity will drive up prices, spurring innovation into more efficient use, thus alleviating some of the scarcity. The second objection is that scarce resources can be substituted by other similar materials or simply traded for. The argument goes that though these solutions may not be ideal, they tend to be preferable to conflict.[39] However, as will be demonstrated later, these objections do not always hold water in Central Asia.

3. The resource situation in Central Asia

3.1. Hydrocarbons and non-renewable resources

Central Asia was always one of the poorest and least developed regions of the Soviet Union and was exploited mainly for natural resource extraction. Though some raw materials were processed there, more were sent to west to be turned into manufactured goods in the more industrialised regions of the Union. However, the region was not particularly wealthy in resources either. For the Soviets, the prime objective in the region was to maintain and expand the enormous cotton monoculture that the Russian Empire had fostered in Khiva and Bukhara, both protectorates of the tsar, and increase food production for the Union.[40] It was only later that oil and gas were discovered in the region, and even at the time of the Union's dissolution oil and gas fields remained much less developed than their counterparts in Russia and Azerbaijan. Since independence, however, Kazakhstan, Turkmenistan and Uzbekistan have seen significant investment, both domestic and foreign, into development of their hydrocarbon reserves, generating immense revenue for the state energy corporations.

According to 2013 estimates, Turkmenistan holds the world's fourth largest reserves of exploitable natural gas at 17.5 trillion cubic metres, behind only Russia, Iran and Qatar and significantly more than both the United States and Saudi Arabia.[41] Kazakhstan and Uzbekistan's reserves (2.4 tcm and 1.8 tcm, respectively), though significantly smaller than Turkmenistan's, still rank fourteenth and nineteenth in the world, respectively.[42] Furthermore, Kazakhstan's crude oil reserves rank eleventh in the world at 30 billion barrels.[43] The mere presence of oil and gas does not conclusively predict conflict or stability. In the Central Asian energy exporters, patrimonial relationships between government officials and business leaders (often tracing their origins back to the Soviet *nomenklatura*) have created large clientalistic networks for the distribution of rents within this in-group.

[39] Gleditsch (1998), p. 383.
[40] Pomfret & Anderson (2001), pp. 186-188.
[41] Williams (2013).
[42] CIA World Factbook (2013). *Country Comparison: Natural Gas - Proved Reserves*..
[43] CIA World Factbook (2013). *Country Comparison: Crude Oil - Proved Reserves.*

However, in most cases like these, some of this wealth is allowed to trickle down to pacify the wider population, in the forms of social goods such as healthcare and education systems. At the same time, coercive structures are also well funded in order to provide the stick to the social policies' carrot.[44] On the other hand, though, it has been suggested that resource wealth often leads to weaker institutions within a state, which in turn has a tendency to lead to sectarian or exclusionary politics on behalf of the in-group (often along ethnic lines), resulting in ethnic or political violence.[45] However, this is arguably not the case in Central Asia. First of all, remnants of the Soviet system has left these states with institutions that are, if not as strong as more developed countries, still more sophisticated and established than those in undeveloped, resource-dependent states. Secondly, as was already mentioned in the first section, the Central Asian regimes have been very aware of the ethnic plurality in their countries, and so been very careful not to be seen as outwardly favouring their in-groups at the expense of others that might react violently to such discrimination. Therefore, one of the mechanisms whereby resource wealth sometimes leads to conflict is pre-empted in the region's energy exporters.

The geographic positioning of the hydrocarbon fields presents an interesting case. In Kazakhstan and Turkmenistan, the combination of large territories and small populations means that deposits will almost inevitably be somewhat peripheral, unless the capital was specifically established near the oil-producing regions, which was not the case in either of these countries (though Kazakhstan did in fact move its capital, but for more political than economic reasons). Though the gas and oil fields are spread somewhat disparately across the two countries, much of the gas is located offshore, in the Caspian sea, which has led to the growth of certain coastal cities. According to the theories discussed in section 2, this distance of the resources from the centre could lead to secession by the producing region. However, these states' small populations might actually detract from the feasibility of such a prospect, as the authorities have greater control over their populations. Furthermore, smaller populations make it easier for the elites to redistribute some of the resource rents to the population at large (as evidenced by these states' higher GDP and public spending per capita and Kazakhstan's relatively high Gini coefficiency), minimising the grievances related to resource extraction and wealth distribution that might otherwise prompt violent conflict.[46] A stark exception to this trend was the strike by oil workers in the western Kazakh city of Zhanaozen in 2011. The strike over better pay and compensation for dangerous labour escalated into a protest that was eventually forcibly put down by police, resulting in the death

[44] Grzymala-Busse (2008), pp. 653-656.
[45] LeBillon (2001), p. 569.
[46] International Monetary Fund (2014). *World Economic Outlook Database - April 2014;* The World Bank (2013). *World Development Indicators: GINI index.*

and injury of protesters.[47] As serious as such an event is in an otherwise stable Kazakhstan, the protesters seemingly had economic rather than political motivations, and secessionist goals were never expressed.

Uzbekistan, on the other hand, has a much larger population relative to its territory. However, its gas fields are somewhat more centrally located. By far the country with the largest internal divisions along national and ethnic lines, Uzbekistan has long been expected to see conflict surrounding these issues, not least by its own government. However, ethnic divisions do not generally coincide geographically with where the majority of its resources are located. The Fergana valley, for instance, is generally singled out as the region's most serious potential flashpoint for ethnic violence, but this area is relatively poor in natural resources. It is true that it is the richest part of the region in terms of farmable land and human capital (at least in terms of sheer population concentration), but these types of resources (dubbed diffuse) are less directly lootable and their presence leads more often to forms of structural violence and exploitation than secession or foreign invasion.[48] The cities of Bukhara and Samarkand, usually recognised as having a majority of Tajiks rather than Uzbeks, and therefore more likely targets for internal struggle, do not coincide with any substantial concentrations of natural resources.[49] Similarly, the autonomous Karakalpakstan republic has few sources of income that could potentially support a movement for greater independence, though the recent discovery of gas deposits (as yet undeveloped) could lead to nationalist sentiments. However, this is not currently regarded as a serious threat.[50]

It seems then that all three states have a reasonable hold on their energy resources, even the more peripheral ones. As discussed above, they have comparably stronger institutions and coercive structures than other resource-dependent states, and so the threat of a coup or revolution to gain control over resource wealth is less likely. This is particularly true in Kazakhstan, where higher levels of privatisation makes state capture less attractive, while simultaneously leaving more opportunities for 'out-group' entrepreneurs in a wider array of sectors. It follows, then, that none of these three states are likely to see internal conflict on the basis of natural resource endowment. The possession of hydrocarbon reserves, as well as other mineral deposits, would no doubt play an important role if conflict should break out for other reasons, and might even give groups additional means and justification for war, but it should not be viewed as a primary trigger for internal conflict.

It should be noted here that there exist other mineral and agricultural resources in the region that may also have the potential to spark conflict, and indeed have in the past. As

[47] *The Economist* (2011).
[48] Le Billon (2001), p. 568.
[49] Soucek (2000), pp. 224-226.
[50] Saidazimova (2008).

mentioned in the introduction, the ethnically motivated killings that occurred in southern Kyrgyzstan in 1990 and again in 2010 can often be traced to other sources. The case has been made that these clashes were more over access to land and water resources than ethnic differences. Uzbeks in the region are often perceived as being richer and having better access to these resources, adding the ethnic dimension to an essentially economic dispute.[51] Furthermore, both Kazakhstan and Kyrgyzstan have seen strikes and occupations of mines and further protests surrounding the unjust distribution of profits from mineral extraction. In 2005 local miners and radicals occupied five coal mines in Kyrgyzstan's Karakeche basin in Naryn province, and the mines' owners only regained control a year later when the uprisings' leader, Nurlan Motuev, was arrested in Bishkek.[52] A similar blockade occurred in 2013 at the Kumtor gold mine, the single largest contributor to Kyrgyzstan's GDP. The protest resulted in clashes with police before it was peacefully dispersed after a visit from the prime minister.[53] Again, though, this unrest has had economic and social rather than political roots. People complain that Kyrgyzstan's limited natural resource wealth is unfairly distributed and opposition politicians pick up their grievances in order to further their own political agendas, but no one has demanded or moved toward autonomy for the regions involved, nor attempted to forcibly overthrow the government on the basis of these issues, neither in Kyrgyzstan nor the rest of the region. Some people in Central Asia might want to see a new, more distributive regime in charge of their country's resource wealth, but none of these people have anything more than this vague idea around which to organise.

One exception that is sometimes pointed out is Kyrgyzstan's division into the more agricultural southern regions and the northern ones that contain more of the country's mineral wealth and limited industry. The two regions have significant economic and social differences and their politics tend to be dominated by separate party and clan compositions.[54] Though not based entirely on this distinction, both of the country's occasions of regime change in 2005 and 2010 heralded general shifts in power in Bishkek between north and south. However, Engvall warns against exaggerating these differences, as the regional divide has seen much cooperation as well as conflict since independence.[55] Furthermore, it would be overblown to characterise either 'revolution' as armed civil conflict; Bakiev's 2005 coup was largely bloodless and the 2010 ousting of his regime only saw a few days of violence before control of the security forces shifted to the new transitional government. Even if this rivalry were to flare up in a violent way again, the causes would

[51] Swanström, Cornell & Tabyshalieva (2005), p. 17.
[52] Engvall (2007), p. 37.
[53] *BBC News* (2013).
[54] Glenn (2003), pp. 136-138.
[55] Engvall (2007), p. 38.

include many more factors than the simple economic resource distribution. As for the rest of the Central Asian states, widespread civil unrest on the basis of natural resource wealth and its distribution simply has not materialised and seems unlikely to in the future. In a reverse example elites from Sughd province (formerly Leninabad), the richest and most developed region of Tajikistan, both in terms of agriculture and industry, sought to retain power over national politics during the civil war rather than make any attempt to secede.[56] It is clear here that the presence of resources was circumstantial rather than a driving force for the war.

The case for transnational conflict based on energy resources is somewhat different, but arguably no more likely to lead to war. Some reserves are indeed located in border regions, and as was pointed out earlier some of these borders have yet to be completely agreed upon. It follows that bilateral border disputes might escalate to armed conflict because of oil, as happened between Iraq and both Kuwait and Iran, but so far this has not occurred in Central Asia. One argument is that many of the disagreements that encompass the energy aspect are on exploration and extraction rights in the Caspian sea. Escalation of any such conflict would severely destabilise that whole region, and so is not in the interests of the other riparian states. Russia in particular has worked hard to resolve disputes with regard to the Caspian and retains significant economic and security interests in the basin, and so it follows that Moscow would likely become involved if conflict should escalate there.[57] Furthermore, the asymmetry of energy resources is so sharp that in many cases interstate war has just not been feasible; Kyrgyzstan and Tajikistan, the two states most desperate to control more energy resources, simply do not have the resources or manpower necessary to seriously threaten any of their neighbours, much less forcibly take and hold their oil or gas fields and so their relative military weakness, if nothing else, has so far ensured peace on that front.[58] The energy producers, conversely, may have the ability to invade the other two states, but the energy reserves that might make that kind of drastic action worthwhile simply do not exist. Conflict among the producers over hydrocarbons is also unlikely as the risks would be much higher, both because of these states' relative military strength and the potential for foreign involvement, and because that kind of regional instability could spark shocks to their existing production and export in terms of decreasing foreign investment and economic sanctions from consumer states.

Russia and China are extremely wary of any instability in the region, and though neither the SCO or the CSTO have explicit provisions for war between their member states, it is highly unlikely that Moscow or Beijing would sit idly by and watch conflict escalate in an

[56] Lynch (2001), pp. 50-55.
[57] Terterov, van Pool & Nagornyy (2010), pp. 193-194; Griffith (1998), pp. 426-427.
[58] Gorenburg (2013).

area both regard as their back garden.[59] Western countries could potentially condemn overt acts of aggression and impose economic sanctions as a result, which may have acted as a deterrent. Though the Central Asian fuel exporters are diversifying their export routes, the majority of their output still ends up in Europe.[60] This argument may have lost some of its bite after the EU's noncommittal response to perceived Russian aggression in Ukraine, but if relations with Russia are repaired or Europe develops a more diversified supply of natural gas a boycott of Central Asian energy could still be feasible, depriving the Central Asian producers of substantial hard currency. The costs associated with armed interstate conflict, both direct and indirect, are therefore considerable, and so the likelihood of war between energy producers over reserves currently seems low. Since all the producers have had sufficient reserves to develop domestically since independence, there has not been much incentive to capture foreign reserves so far.

3.1. Water

As a resource, water is somewhat unique. It is absolutely essential for all life on earth, as well as much economic activity, either directly or indirectly, and is in no way substitutable with any other resource. Watercourses also cross arbitrary state boundaries, and so it must necessarily be shared.[61] At the same time it is often seen as ubiquitous, and few questions are asked as to where it comes from and how. However, in some regions, such as Central Asia, water supply is more limited. The five states, as well as parts of Afghanistan form what is known as the Aral Sea basin, which is made up of the watershed of the Syr Darya and the Amu Darya rivers. The Syr Darya has its origins in the Naryn river which flows from the Tian Shan mountains of Kyrgyzstan. In total the river is around 2800 kilometres long, with a catchment area of around 400 000 square kilometres, an area that is home to around 20 million people. Its annual runoff is between 23.5 and 51.0 cubic kilometres, though the average in recent years has been around 40, 75 percent of which is generated by rainfall and glacial melts in mountains on Kyrgyz territory.[62] It flows to the Fergana valley, where it briefly crosses Uzbek territory before entering Tajikistan, after which it flows back into Uzbekistan on its way to Kazakhstan and the Aral Sea. The Amu Darya originates with the Panj river along the Afghan-Tajik border and flows for just under 2600 kilometres to the Aral Sea. Its catchment area is larger than that of the Syr Darya, covering over 1 300 000 square kilometres with an annual runoff of 79.3 cubic kilometres.[63] It flows along the northern border of Afghanistan before running north-east into Turkmenistan, skirting that country's

[59] Chatham House (2013), p. 4; Paramonov & Stolpovski (2008), pp. 6-10.
[60] Ericson (2009), pp. 30-31.
[61] Elhance (1997), p. 211.
[62] Bernauer & Siegfried (2012), p. 228.
[63] McKinney (2003), p. 3.

border with Uzbekistan for a distance before running fully through Uzbek territory to the Aral Sea. This being an endorheic basin, both rivers terminate here, leaving the region almost entirely dependent on these two watercourses for fresh water.

Over three quarters of the water in the Aral Sea basin originates in Kyrgyzstan and Tajikistan, but 85 percent of it is used by the three other downstream countries.[64] This is partly because these countries have somewhat better land for farming than the mountainous upstream states, but also because Soviet planners extensively developed the irrigation systems in these countries to support the cotton monoculture at the expense of agriculture in the upstream states. Using the water for hydroelectric power generation in the upstream states was only ever a fringe benefit for central planners, who prioritised irrigation over everything else.[65] However, a system was set up to compensate Kyrgyzstan and Tajikistan for the cheap energy they would otherwise have been able to generate, whereby the energy producers would send them oil, gas and coal, especially during winter months when the energy was needed the most and it was at the same time crucial that the irrigation systems were not flooded by extra releases.[66] In addition to this, maintenance of dams, canals, reservoirs and monitoring stations was financed by Moscow.

This system worked very well (economically, if not environmentally) under the Soviet Union, as the entire region was effectively a part of the same state. However, when the Union was dissolved and internal borders became international ones, the five states were left with 'a system that was Soviet in its ambitions, scale and mentality but unable to adapt to Central Asia's evolving political and economic systems'.[67] The states initially agreed to maintain the same system, but as the energy producers opened up trade to the rest of the world they began charging world market prices for their oil and gas, which had previously been provided to the upstream states for free or at heavily subsidised rates by Moscow. Kyrgyzstan and Tajikistan can simply not afford to buy all the energy they need at these prices, and so are forced, especially in the winter months, to release water for hydropower generation. In addition to this, the systems set up to regulate water distributions and usage, as well as the energy compensation, have not worked as well as they did in Soviet times, meaning upstream states are not paid when and as much as was agreed upon, and downstream states do not received the agreed upon volumes of water. Finally, the infrastructure itself, which is vital for all the states' interests, became the sole responsibility of the states housing it, resulting in Kyrgyzstan and Tajikistan, the poorest of the five countries, financing and maintaining most of the dams, reservoirs and monitoring stations.

[64] *Ibid*
[65] Kipping (2008), p. 308.
[66] Chan (2010), pp. 121-122.
[67] International Crisis Group (2002b), p. 6.

This would understandably cause a certain amount of tension between the Central Asian states, but there are two further reasons that transform this situation into one of acute conflict potential. First of all, a water shortage has developed in Central Asia, which means that the stakes are much higher and conditions of resource scarcity are present. Secondly, this has led to the securitisation of the issue by the countries' governments, meaning they see water access as central to not just economic activity to but to their national security. This is mainly due to the relative importance of the water-dependent cotton monoculture, but also to several of the states' obsession with food self-sufficiency. This leads them to see the situation in zero-sum terms rather than ideal opportunities for multilateral cooperation.

The issue of scarcity is actually somewhat of a misnomer in this case. Despite recent trends in climate change somewhat diminishing the basin's river runoffs and hastening evaporation, there is enough water in the system to support not only the current population, but also the extensive agriculture. Uzbekistan, for example, has a larger water supply than Spain.[68] The problem lies in the way the water is utilised. First of all, cotton is an extremely thirsty crop, requiring 1,500 cubic metres of water per hectare to cultivate. By way of comparison, whereas wheat requires around 900 litres of water to produce one kilogramme of yield, a kilogramme of cotton needs anywhere between 7,000 and 29,000 litres, depending on other climatic variables.[69] More important, however, is the inefficient use of water. Instead of the 1,500 cubic metres required physiologically per hectare, for example, Uzbek farmers use an average of between 8,000 and 10,000 because of inefficient irrigation.[70] Because around ninety percent of withdrawals from the rivers in the region are used for agriculture, this amounts to enormous waste; it is estimated that water consumption per capita in the Central Asian regions is over four hundred times that of western Europe.[71] Conservative estimates put the water wastage from evaporation and seepage at over 25 cubic kilometres.[72] Other researchers have put the figure higher, estimating that as much as half of the water runoff goes to waste each year.[73] The biggest reason behind this extreme wastage is the Soviet era irrigation systems. The Soviet economic model was notorious in its treatment of natural resources and water in Central Asia was no exception. When the irrigation systems were first put in place, the area of cultivated land and the regional population were much smaller, and so central planners saw no need to build extremely efficient irrigation systems when water was in such abundance anyway. However, the last three decades of the Soviet era saw Central Asia's population triple and its irrigated land

[68] Zakhirova (2013), p. 1997.
[69] World Wide Fund for Nature (2013), p. 9.
[70] Kipping (2008), p. 313.
[71] Stewart (2014), p. 89.
[72] Vali, Sreenath & Susiarjo (2006), p. 162.
[73] Mosello (2008), p. 152.

increase by two thirds to seven million hectares.[74] At the same time, irrigation canals were poorly maintained, and have largely been neglected since independence. The money spent on maintaining all of the region's irrigation systems fell from $80-100 per hectare every year while under Soviet control to $14-15 per hectare annually since independence.[75] The low levels of privatisation in especially Turkmenistan and Uzbekistan means that farmers are very reluctant to invest in improving their irrigation systems because they do not own the land.[76] Furthermore, companies, private households and state farms all have little regard for economic water usage as water is massively subsidised in all five states; the lack of market pricing removes all incentive to use water efficiently.[77]

Exacerbating this problem is the decreasing quality of the water. The desiccation of the Aral Sea and general over-use of water has led to the increased salinisation of the water in the basin. It is reported that as much as 95 percent of irrigated lands in Turkmenistan suffer from salinisation.[78] This destroys the soil and means that crops require even more water to grow there, as extra water is needed to wash away this extra salt. In addition to this there are problems of chemicals in the water as a result of excessive pesticide use. These too need to be washed out of the soil for crops to grow properly, but much remains in the groundwater.[79] Moreover, pollutants from the mining industry, particularly in the upstream mountainous countries, are also emptied in to the rivers and there is an increasing risk of radioactive waste entering into the water supply from poorly maintained waste sites in Kyrgyzstan. As damaging as this is for agriculture, it is even worse for direct human uses of water; many people are forced to drink this poisoned water.[80] The increase in water pollution means a decrease in the supply of useable water.

As a result of poor management of water supplies, a situation of scarcity has arisen where there should never have been one. Because water is not only essential for households but crucial for the agriculture that provides enormous revenues for the downstream countries, as well as for the potential power generation of the upstream countries, governments have tended to securitise the water issue. After the end of the Cold War, the water issue has been taken 'out of the normal domain of technological management and [placed] in the secret and closed domain of security officials'.[81] Instead of water being treated as a global common that requires multilateral cooperation, the regional leaders see water distribution as a zero-sum game where the ultimate aim becomes to

[74] Vali, Sreenath & Susiarjo (2006), p. 137.
[75] Chan (2010), p. 129.
[76] Kipping (2008), p. 316.
[77] International Crisis Group (2002b), p. 7.
[78] Sievers (2002), p. 366.
[79] Vali, Sreenath & Susiarjo (2006), p. 159.
[80] Granit et al (2010), pp. 7-8.
[81] Buzan, Wæver & de Wilde (1998), p. 24.

secure as many water resources for the country as possible at the expense of the others, rather than working to develop and implement a system that can optimise water use and efficiency for the region as a whole. Mosello proposes a threefold root for this problem. First of all the political context of weak governments that are suspicious of each other's intentions precludes the trust necessary for successful cooperation. Second, she points out the social context of population growth and local ethnic tensions that are sharpening disputes. Third, the economic context of the five states striving for self-sufficiency (brought on by the lack of trust for each other) makes equitable trade unattractive.[82]

Because the water issue is perceived as a zero-sum game it becomes one, and the issue is highly securitised. In Kazakhstan, for example, the national security council assumed responsibility for water policy in 2001, moving it from the realm of bureaucratic cooperation to one of security issues.[83] The organisational process model of international relations suggests that the institutions or people responsible for an issue or policy will often inadvertently affect how it is handled, based more on their standard operating procedures and usual work environment than active decisions.[84] In this case it could mean that if the water issue is mediated by organs usually accustomed to working situations of conflict and competition, the relations surrounding water distribution will inevitably become conflictual as a result. The issue has flared up several times, especially with relation to certain projects. Considerable irritation has long existed over Turkmenistan's Karakum canal. The world's longest irrigation canal, it diverts water from the Amu Darya through the Karakum desert, losing large amounts of water to evaporation and percolation because it is neither covered nor lined with concrete. Despite this, the Turkmen government has proposed plans to lengthen it further, as well as to construct an enormous drainage lake in the desert.[85] Though no large-scale action has been taken, there have been sporadic reports of cross-border skirmishes from Uzbekistan to destroy water pumps, most likely by local actors rather than military forces.[86] There have been rumours, however, of preparations by the Uzbek military to potentially invade northern Turkmenistan to establish further control over the Amu Darya, as well as of actual clashes already between Uzbek and Turkmen troops.[87] In addition to this, Kyrgyzstan and Tajikistan are constantly seeking financing to build more hydroelectric dams to wean themselves off energy imports, which has provoked very negative reactions from Tashkent and Ashgabat. Kyrgyzstan has already at times opened

[82] Mosello (2008), p. 156.
[83] Sievers (2002), p. 401.
[84] see for example Graham Allison's (1971) study on levels of analysis and the Cuban missile crisis.
[85] Stewart (2014), p. 90.
[86] Kipping (2008), p. 310.
[87] Elhance (1997), pp. 273-274; INTERNATIONAL CRISIS GROUP (2002b), p. 6; Mosello (2008), p. 158; Sievers (2002), p. 369.

up dams in winter, gradually transitioning from storage to power generation regimes at many dams. Toktogul, the largest reservoir on the Syr Darya, at times runs at 90 percent power generation.[88] This has caused significant flooding downstream, damaging crops and irrigation systems and leaving less water for vegetation come spring. The Kyrgyz authorities claim that these releases are necessary to supply the population with energy during the cold winters, because gas from Uzbekistan is either too expensive for them to afford or not delivered on time. They claim that Uzbek gas interruptions grow more frequent, necessitating the increased release of water during the winter, and that this situation makes their actions exempt from any legal scrutiny with regard to previously established water-energy agreements.[89] Though similar disagreements exist between Uzbekistan and Tajikistan (as well as between Turkmenistan and Tajikistan), the ones in the Syr Darya basin have been more heated. Most worrying are rumours of the Uzbek military performing military exercises resembling a seizure of the Toktogul reservoir.[90]

So far, however, none of these disagreements have escalated to full scale armed conflict. However, Kipping argues that local conflicts over access to water and irrigated land are more likely to lead to violence than interstate disputes are. He points to the 1990 Osh riots as an example, and the events of June 2010 in the same province and neighbouring Jalal-Abad had many similarities.[91] This may be because locally there can be many more grievances lying under the surface, and so it is much easier for varying underlying reasons, such as ethnic tension, economic inequality and other factors to come to a head all at once. Additionally, the securitisation of the water issue may inadvertently exacerbate local conflicts because the power to resolve them no longer lies with local authorities but with the centre, meaning local mediation and resolution become much more difficult. Indeed it has been pointed out that local problems, which water disputes are most of the time, are more effectively and peacefully resolved using local solutions.[92] This is an important point in the next section, which will discuss the mechanisms currently in place with the aim of resolving water disputes.

4. Mechanisms for peace: Institutions, regimes and regional cooperation

Unlike the case with other natural resources in Central Asia, access to water has regularly seen significant heated rhetoric among the states concerned. Combined with the considerable securitisation of the issue and the rumours of both planned and actual military

[88] Bernauer & Siegfried (2012), p. 232.
[89] Kemelova & Zhalkubaev (2003), pp. 483-491.
[90] International Crisis Group (2002b), pp. 1-2.
[91] Kipping (2008), pp. 310-311.
[92] Swanström, Cornell & Tabyshalieva (2005), p. 40.

activity, observers have long suggested that some sort of escalated conflict might occur.[93] However, the situation has been serious now for some time, yet disputes have yet to lead to war. Multiple reasons for this have been posited. Stewart argues that water is simply not enough to lead to war, insisting that the last time this happened was when the Babylonian city state Lagash went to war with its neighbour Umma 4,500 years ago. Instead he argues that water scarcity is only ever a part of a larger social and political narrative, never an inherent cause of conflict.[94] Others have argued that water does have the potential to lead to conflict, but being such a vital resource it can just as easily prompt cooperation. One study looked at over 1,800 water disputes since the end of the second world war and concluded that 67.1 percent were resolved through cooperation and only 27.7 percent resulted in conflict. Even out of these, not even one resulted in full-scale war.[95] On the other hand, some still maintain that water scarcity fits into the framework of environmental degradation, which has been correlated with conflict. As mentioned in section 2, some even regard water as the most likely of environmental scarcities to lead to conflict, especially under certain conditions. One of these conditions that is repeatedly pointed out is a situation where a downstream riparian is significantly stronger, militarily and economically, than an upstream neighbour, at the same time as being dependent on the latter's good faith to receive its required water supplies. Ohlsson emphasises that the largest risk of conflict occurs when a state is simultaneously dependent on a limited supply of water and has a large and growing population as well as an expectation for significant further development.[96]

In Central Asia, this pattern points to Kazakhstan and Uzbekistan, the stronger of the Central Asian states. Turkmenistan also sees high revenues from gas exports that could fund conflict, but its small population next to Uzbekistan does not make it a credible threat militarily. Also, in its position between Tajikistan and Uzbekistan along the Amu Darya, it has less need to resort to force to secure water supplies than Uzbekistan might; Tajikistan uses so little of the river's runoff that there has never been a need to do so.[97] Kazakhstan fits more of the criteria, but has consciously sought to wean itself off its water dependence in the years since independence, replacing much of its cotton agriculture with less thirsty crops. In addition, it is not entirely dependent on the Aral Sea basin waters, as it also draws much water from the Irtysh river and also has areas suitable for rain-fed agriculture in the north of the country.[98] Furthermore, as will be discussed more below, Kazakhstan has made a more concerted effort to peacefully resolve water issues with its upstream neighbours, especially

[93] Mosello (2008), p. 167; Bernauer & Siegfried (2012), pp. 236-237; Stewart (2014), p. 102.
[94] Stewart (2014), p. 82.
[95] Wolf, Yoffe & Giordano (2003, p. 39.
[96] Ohlsson (1999), pp. 223, 227.
[97] Stewart (2014), p. 91.
[98] Granit et al (2012), p. 426; Ahmad, Rodriguez & Braslavskaya (2005).

its otherwise more likely target for military action Kyrgyzstan. It seems inconceivable for Kazakhstan to act as an aggressor against its other upstream neighbours China and Uzbekistan.

This then leaves us with Uzbekistan as the most likely instigator of violent conflict on the basis of water supply. Not only does its profile fit the theoretical risk factors, it has also consistently been unwilling to seriously compromise on water distribution deals since independence. It frequently flouts water-energy deals, delivering gas to its upstream neighbours late, incompletely or not at all. The Uzbek regime has also refused to accept any financial responsibility for the upstream infrastructure.[99] It has nonetheless contributed some funds to the maintenance of the Toktogul reservoir, but observers see this more as the result of insecurity about Kyrgyzstan's capability to maintain it effectively than a recognition of its own obligations.[100] Added to this are the alarming rumours of border clashes with Turkmenistan and preparations for military operations aimed at seizing water facilities. The region has seen something of an arms race in recent years, with military spending increasing by 48 percent in 2007 alone in the three downstream states. Though threats of terrorism and extremism are the officially cited reasons for this increased armament, official military documents from Kazakhstan seem to indicate that the Kazakh programme is a reaction to increased arms spending by certain other states in the region.[101] Uzbekistan is pointed out as the country in the region with the most serious social issues that could spark internal conflicts that could spill over into neighbouring countries. It has also been suggested as the most likely state to attack a neighbour to alleviate land or resource problems, or simply as a diversionary tactic to rally domestic support.[102] This is not helped by the increasingly nationalist discourse on the water issue in neighbouring Kyrgyzstan, which controls a large portion of Uzbekistan's supply.[103] However, despite these worrying signs, the region has remained stable and the theorists who reject water wars as a likely scenario have so far been vindicated. The conclusion therefore seems to be that water disputes, unless they are combined with other factors for conflict, will be resolved or at least stalled through bilateral or multilateral cooperation. This inevitably leads to a discussion of the regimes that exist to mediate water disputes in Central Asia.

4.1. International water relations

Since the dissolution of the Soviet Union, a number of different regional organisations have been established to deal with the allocation of the water resources of the Syr Darya and Amu

[99] International Crisis Group (2002b), pp. 13-14; Kemelova & Zhalkubaev (2003), pp. 483-484.
[100] Kipping (2008), p. 313.
[101] Nourzhanov (2009), p. 95.
[102] Anker et al (2010), pp. 136-141.
[103] Kipping (2008), p. 309.

Darya rivers. In February 1992, minsters from all five Central Asian states signed the Almaty agreement, setting up the Interstate Commission for Water Coordination (ICWC) with the aim of replacing the system that had been in place under Soviet rule. It upheld, at least for the time being, the same allocation figures as the old system. However, it did not address the issue of infrastructure maintenance; with the advent of sovereign territory for these states, all the infrastructure was nationalised and each government was required to take responsibility for whatever facilities ended up on its territory.[104] Furthermore, it lacked the flexibility of the old system, which was managed unilaterally from Moscow, and so quotas are not adjusted with respect to droughts or changes in water and energy use. This is only becoming more acute as the region's population is growing and all the republics are seeking to expand their irrigated agriculture. Its two Basin Water-management Associations (BWAs) - one for the Syr Darya and another for the Amu Darya - only have the right to adjust annual quotas by up to 15 percent. Its capacity to monitor actual water usage is also severely limited, often leading to shortages downstream.[105]

This system was unsuccessful almost from the start. First of all, the civil war in Tajikistan made aspects of the system completely unworkable. However, this was not its only failing. First of all the ICWC is far from transparent, not involving NGOs or water users' associations (WUAs) in their decision making (again excluding local actors). Its offices, as well as its Scientific Information Centre, are all located in Uzbekistan (except for the 'rather weak' ICWC secretariat), leading to accusations of an Uzbek bias in regulation of quotas.[106] The concept of individual responsibility for infrastructure maintenance is also unfeasible; two advisors to the Kyrgyz government have called this arrangement 'unacceptable and unworkable'.[107] According to Sievers, the Toktogul reservoir alone costs Kyrgyzstan $25 million annually, something that country can ill afford.[108] The most important failure of the ICWC, however, was its general assumption that all the riparian states would be happy with a continuation of the Soviet *status quo* that so obviously favoured the downstream states. Not only have Kyrgyzstan and Tajikistan expressed wishes to increase their area of irrigated land now that water resources are more under their control, but the three other states have also shown their intent to grow their irrigated farmland.[109] Furthermore, the allocation is uneven even among the downstream states; Turkmenistan and Uzbekistan, for example,

[104] Bernauer & Siegfried (2012), p. 233.
[105] International Crisis Group (2002b), pp. 11-12.
[106] *Ibid*, pp. 6-7.
[107] Kemelova & Zhalkubaev (2003), p. 495.
[108] Sievers (2002), p. 372.
[109] International Crisis Group (2002b), p. 9.

split their share of runoff from the Amu Darya roughly equally, despite the former having only four million people living in that catchment area whilst the latter has fourteen million.[110]

All these issues could be worked through if the ICWC or its parent organisation the International Fund for the Aral Sea were granted sufficient autonomy and authority to make impartial decisions. However, because water has become such a securitised issue most of the decision makers in these organisations are government officials rather than civil servants or water experts, and they are disproportionately (at least according to the other republics) from Uzbekistan.[111] Perhaps as a result governments are loath to give the commission any real power. Furthermore, both the ICWC and its constituent BWAs are severely underfunded, with most of the governments not keeping up their payments. In addition, as visa regimes have been introduced in the region inspectors cannot make surprise visits to regulatory facilities, being required to announce their intentions well before travelling. Even when they can monitor properly, their authority does not extend much further than writing reports and recommendations, as they lack the mandate to make most serious decisions and the means to enforce the ones they can make.[112] Western donors have attempted to set up alternative organisations that deal with the issues of energy and agriculture more comprehensively, as well as conservation efforts to save or restore the Aral Sea, but they have had little success. Only a fraction of the money promised has materialised, and much of what does enter the region is likely siphoned off by authorities for other purposes. Donor organisations have also admitted that some projects are compromised by the centrality of Uzbekistan at the expense of the other republics.[113] The only thing these efforts have really managed to do is prove that when it comes to the prospect of foreign aid, the Central Asia governments are actually able to cooperate and make multilateral gestures of good faith to ensure that funds keep flowing, only to break down in disagreement and reciprocal blame once the funds are in and the projects fall apart.[114]

As a result of these failings, the Central Asian states quickly resorted to bilateral agreements over water, which resulted in the ICWC losing even more capacity to monitor current supplies and quotas. In an attempt to ameliorate this situation, Kazakhstan, Kyrgyzstan and Uzbekistan signed a trilateral agreement in 1998 to set up a framework (still based on earlier bilateral deals) under which agreements on water quotas and energy transfers could be agreed.[115] Tajikistan joined this regime in 1999. It established a scheme of compensation for the upstream countries for summer releases and winter storage, in the

[110] *Ibid*, p. 21.
[111] *Ibid*, p. i.
[112] Mosello (2008), pp. 162-163; INTERNATIONAL CRISIS GROUP (2002b), pp. 8-9.
[113] Sievers (2002), pp. 393-395.
[114] *Ibid*, p. 388; Kipping (2008), p. 316.
[115] Pak, Wegerich & Kazbekov (2014), p. 238.

form of purchases of excess hydroelectric power generated and gas and coal shipments in winter. For example , instead or releasing 3.5 cubic kilometres in the growing season (April to September) and 8.5 cubic kilometres in October to March which is what Kyrgyzstan needs to satisfy its energy needs, 2.5 cubic kilometres of that release would be shifted to the growing season. This would generate roughly 2,200 million kilowatt hours in excess electricity, that Kyrgyzstan could sell to Kazakhstan and Uzbekistan and have compensated in winter. However, observers conclude that this system has failed to resolve water and energy sharing issues. First of all, any exogenous factors, such as reduced rainfall or glacial melts, tend to affect the downstream states more adversely than the upstream, perhaps because the upstream states can simply extract their quota first, as quotas are set in absolute terms, rather than as proportions. The downstream states, in turn, do not absorb the fluctuations of energy prices; as the hydrocarbon producers began trading on the global market, the prices they could demand for oil, gas and coal increased. They then refused to trade their hydrocarbons for hydroelectric energy on a kilowatt-hour to kilowatt-hour basis, but insisted on market payments being made back and forth, which inevitably disadvantaged the upstream states, whose energy is valued much lower.[116] Part of this is a reluctance on the part of the Turkmen and Uzbek governments to relinquish energy profits, but in Kazakhstan the government has tried to make more guarantees but cannot force its many private energy suppliers (most notably coal mines) to supply cheap supplies to Kyrgyzstan. Moreover, energy trade was furthered hampered when Uzbekistan and Kazakhstan withdrew from the Central Asian Unified Grid System.[117] Finally, what deals were made often came too late for the upstream states who needed the energy urgently (a fact no doubt exploited by the energy producers), and there are constant reports of deliveries not being made on time or at all.[118]

Examples of good faith do exist, however. In 2002, for example, when Kyrgyzstan began releasing water in winter to compensate for a failed energy deal, this began damaging farmland and irrigation systems in Uzbekistan. Uzbek authorities asked their Kyrgyz counterparts to stop the release and the latter, recognising the damage being caused, complied.[119] In an important demonstration of the benefits and possibilities of cooperation, Kazakhstan and Kyrgyzstan set up two energy-water consortia for managing the Talas and Chu river basins, which both cross the borders of those two countries. In return for Kazakh funds for upstream hydropower projects in Kyrgyzstan, Kazakh officials are allowed a say in the release regimes. The basins are thus jointly managed, with the aim to serving both

[116] Bernauer & Siegfried (2012), pp. 233-235.
[117] Zakhirova (2013), p. 2009.
[118] Kipping (2008), p. 308.
[119] International Crisis Group (2002b), p. 14.

states' best interests.[120] The impact of these two rivers is minimal compared to the Syr Darya and Amu Darya basins, but their cases present a good demonstration of the possibilities of peaceful cooperation between riparian states. Furthermore, local actors have demonstrated both an ability and a willingness to find solutions to water disputes. Neighbouring communities have had some success in resolving disagreements, even across state borders, without involving higher organs. Though often temporary and rarely having much of an effect on the larger situation, such cases do prove that cooperation in the region is possible.[121]

However, relations surrounding water issues remain largely conflictual. As a response to the energy producers' global market pricing for oil and gas, the government in Kyrgyzstan passed a law requiring foreign states to pay for their water at market prices. This was condemned as contrary to international law by downstream states. Uzbekistan complained that this move violated the terms of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, despite not actually being a signatory to the agreement at the time. In the region, only Kazakhstan was at the time.[122] Kyrgyz authorities have countered that the downstream states are also breaking international agreements in their water usage, and besides that the law (which is deliberately vague) refers to charging users for the services rendered by Kyrgyzstan in the form of facility maintenance, an aspect they insist was included in initial agreements but has subsequently been ignored. They also stress that the law has never actually been implemented yet.[123]

4.2. International law

The issue of international law is an important one. Currently only the downstream states are party to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and of the Central Asian states only Uzbekistan has so far ratified the Convention on the Law of the Non-navigational Uses of International Watercourses.[124] The latter contains an article entitled 'Obligation not to cause significant harm' which, in its vagueness has proven controversial, as it can severely limit the ability of upstream states to control or even make use of water flow if it can be demonstrated to harm economic or social interests downstream, as well as oblige them to compensate downstream states if harm is inflicted. [125] It is hardly surprising that neither Kyrgyzstan nor Tajikistan are parties to this convention, as this point seems to favour the downstream states in most of the ongoing

[120] Kipping (2008), p. 313.
[121] see for example Wegerich et al (2012).
[122] Sievers (2002), pp. 389-390.
[123] Kemelova & Zhalkubaev (2003), pp. 480-483.
[124] United Nations (2014).
[125] United Nations (1997), p. 5.

water disputes in the region. Although this does not preclude these states being held accountable to international norms and customary law, these concepts are poorly understood or adhered to in Central Asia, not only by the upstream states. Perhaps due to a very limited history of sovereign statehood and little experience with international politics, there is an 'under-appreciation' for customary and normative international law in Central Asia.[126] Indeed, even formalised agreements are often flouted or ignored when they contradict national interests, and international deals often overlap in content and at times contradict each other.[127] Sievers argues that in the early 1990s there was great enthusiasm in the region for the principles of international law. The states associated these principles with the freedoms and economic successes of the west, and they served as a contrast to the Soviet system, which was not perceived as being rooted in the rule of law. However, these sentiments have since eroded as trust in international regimes did not yield the expected prosperity and international organisations appear to be marred by many of the same inefficiencies as the Soviet bureaucracy.[128] It is also possible that deferring to international law became unfeasible as the rule of law enjoyed less adherence domestically as leaders sought to maintain power rather than promote democratic change. It is also argued that the international legal framework for these kinds of water disagreements is largely ineffectual. Instead of outlining ways for states to resolve specific disputes, water law 'attempts to codify customary law in the most general terms'.[129] This approach largely leaves multilateral and bilateral agreements untouched, doing nothing to undo the contradictions and ineffectualness of the current state of affairs.

4.3. Regional institutions and geopolitics

It is clear then that the institutions set up to mediate water disputes are not working the way they were designed to. Disagreements are not solved, but continue to rage, resurfacing every year as transfer deals are renegotiated and subsequently not completely adhered to. What can then account for the fact that these issues, present since independence, have not yet escalated to armed international conflict? One potential answer is the influence of larger international institutions mediating conflict. The Central Asian states are members of multiple regional regimes that have the potential to mediate or prevent conflict despite not addressing the water issue directly. All five are members of the CIS, but this is a very loose organisation that has proven to be much less effectual than at least some of its founders had hoped. Though it aims to foster economic and political cooperation, its actual

[126] Kemelova & Zhalkubaev (2003), pp. 490-491.
[127] Pak, Wegerich & Kazbekov (2014), pp. 230-231.
[128] Sievers (2002), pp. 382-383.
[129] Dinar, Dinar, McCaffrey and McKinney, quoted in Chan (2010), p. 138.

accomplishments have been minimal.[130] Crucially for the issue of water in Central Asia, there is no mechanism within the CIS for resolving these kinds of economic disputes. The Eurasian Economic Community may seem a more logical forum, but mostly under Russian direction it focuses more on larger issues like pushing for a greater customs union, preferring to leave bilateral issues up to bilateral diplomacy.

The military branch of the CIS, the CSTO, has seen some deeper involvement, mainly in the form of military exercises. However, neither Turkmenistan nor Uzbekistan are currently members. Theoretically this means that an attack on Kyrgyzstan by Uzbek forces could provoke intervention from other CSTO states, or at the very least its Collective Rapid Action Force. However, there have long existed doubts as to the organisation's conviction. Belarusian president Aleksandr Lukashenko criticised the organisation for not intervening to prevent the overthrow of Kyrgyz president Bakiev in 2010, and many calls erupted for it to help quell the ensuring unrest in June of the same year.[131] The organisation responded by saying that its mandate did not include internal unrest in a member state, only foreign aggression. This of course does not preclude CSTO intervention should Uzbekistan invade any of its neighbouring CSTO members, but it does cast some doubt on how effective this is as a deterrent. Turkmenistan, Tashkent's other main rival in water disputes, does not have this protection either way, as it is not a member of the CSTO. The SCO on the other hand (of which again Turkmenistan is not a member) appears to be a somewhat more functional institution, but it is in no way a military bloc. The only conflicts it could realistically become involved in are internal ones where secession is an issue, and then still strictly on a voluntary basis. Its subordinate Regional Anti-Terrorist Structure focuses mainly on preventing and preparing to combat the 'three evils' of terrorism, separatism and extremism.[132] This may be helping the Central Asian governments develop the tools necessary to maintain internal stability, but is of little help in the event of foreign aggression. The SCO is frequently dismissed as not being a very realistic provider of security.[133]

Linked with this is the potential for foreign actors to become involved unilaterally. Kyrgyzstan's interim president during the June 2010 events Roza Otunbaeva tellingly asked for support to restore order from Russia specifically, knowing that CSTO intervention would not likely be forthcoming. Dmitrii Medvedev declined then, but it is possible that Russia would intervene, if only in a peace-keeping capacity, if interstate conflict were to break out in the region. It has many strategic interests in the region, and significant instability does threaten these interests, as well as its image as a local great power. Boris Eltsin

[130] Dragneva & Wolczuk (2012), p. 3.
[131] Makhovsky (2010); Elder (2010); *Radio Free Europe / Radio Liberty* (2010).
[132] Dwivedi (2006), p. 151.
[133] Blank (2012), p. 148.

demonstrated this when he decided to send Russian troops to Tajikistan during that country's civil war; Russian troops remained in Tajikistan for a long time after the war to ensure peace and help patrol the border with Afghanistan. Russian peacekeeping troops have similarly been deployed to other FSU countries in times of conflict, like Georgia and Moldova. A regional conflict could threaten gas deliveries to Russia, which it needs to fulfil its contractual obligations to European consumers.[134] Furthermore, instability could make borders in the region more porous, allowing more freedom of movement for extremists and narcotics traffickers. Though the threat of the former appears to be somewhat exaggerated, the latter definitely presents Russia with serious problems. It is estimated that 90 percent of the world's opium is produced in Afghanistan, and a significant portion of that is transported through Central Asia to Russia and Europe. This has led to a huge problem with heroin addiction in Russia, possibly more than any other country in the world.[135] However, it is impossible to say whether Russia would commit to a large scale conflict in the region. It could well defer the decision to the CSTO or the UN, buying itself time before becoming involved. It might also simply focus on strengthening its own border with Kazakhstan (the only Central Asian country with which it shares a border) or work with Kazakhstan to bolster the shared border of their customs union (or the proposed Eurasian Union should that soon enter into effect), granted Kazakhstan is itself not a combatant.

The same points apply to some extent to China as well, though not as strongly. It too has many economic interests in the region, but aside from oil and gas, these are not heavily securitised and can be pursued elsewhere. The issue of porous borders would also concern Beijing as it fears extremists and separatists in its western regions. However, China has remained committed to staying out of other states' conflicts, and would not likely involve its military in a Central Asian war. No doubt it would play an important role in mediating the conflict diplomatically as the area is still of key interest to Beijing, but the only likely military deployment would be to shore up its own borders with the region. Western powers present even less of a deterrent to a potential aggressor in the region. Though NATO forces have had a significant presence during the last ten years, the US and Europe have been looking to decrease their involvement and would be unlikely to engage in any peacekeeping in the region unless widely backed by the UN and local powers. The states in the region will have witnessed their growing war weariness and would probably not see Western involvement as a serious deterrent either. On the other hand, Russia and China (as well as some western countries to a smaller extent) account for a lot of foreign investment into the region, and so though they may hesitate to intervene militarily, the threat of decreased investment from these states may be enough to compel the Central Asian republics to keep the peace.

[134] Ericson (2012), p. 632.
[135] Kozlovskii (2010).

The threat of external intervention in any potential conflict in Central Asia does not come across as the most convincing explanation for the region's relative stability since independence. Neither do the regimes and institutions designed to facilitate cooperation appear to be fulfilling their function, yet the region remains at peace. Just as there are multiple factors behind every conflict, perhaps the same can be said for peace. Though no single factor so far explored can convincingly explain the interstate peace in the region, a combination of some manner of deterrent with the regular, albeit limited and ineffectual, cooperation, as well as the general lack of funds for warfare might be contributing to a lasting stability. Indeed Sievers points out that the continued accusations and broken promises have not actually worsened the political relationships between the Central Asian republics much since the troubles began in the 1990s, but instead brought attention to the seriousness and complexity of the water situation. Their governments may be no closer to solving the issues, but they are also not letting them escalate. As he writes, 'increased short-term tension may be the price of convincing the states to resolve issues that otherwise would explode into open and unmanageable conflict in the longer term'.[136] In addition to this, it should be noted that though the Central Asian countries suffer from an inequality of resources that might cause some friction, as well as some longstanding disputes over border demarcation, there are few other major issues that could precipitate a war. Ethnic differences between the states, in the grand scheme of things, are minor and ideological ones even more so. Furthermore, there is no country that can make a concerted bid for regional dominance, which could otherwise lead to interstate conflicts. Uzbekistan is the closest contender and has made some efforts to project itself as a regional hegemon, but it is generally not considered strong enough, especially with ever present Russian and Chinese interests undermining any serious bid for power. The result is what comes across more as 'prima donna tactics' than any genuine hegemonic power.[137]

4.4. Internal conflict

These factors undermine the theory that a resource scarcity tends towards interstate conflict. However, opponents of this theory, as well as some of its proponents, point out that it has a tendency to ignore other political, social and economic factors.[138] War is rarely the product of only one cause, regardless of what official rhetoric professes, and so without these other factors in play, the resource issue may simply not be enough to spur serious conflict between the Central Asian states. The situation within the countries, on the other hand, may be somewhat different. From the first Osh riots in 1990 to the second, similar occurrence in

[136] Sievers (2002), p. 388.
[137] Chan (2010), pp. 131-134.
[138] Gleditsch (1998), p. 389.

2010, with the Tajik civil war and the Andijon crisis in between, there have been several outbreaks of violence within the Central Asian states. Though arguably only the civil war in Tajikistan might constitute a 'war' if that is defined as having to claim more than a thousand lives, none of these events can be ignored with respect to their effect on regional stability and the possibility of further escalation in the future.[139] Indeed, it is argued that not only are internal conflicts becoming much more common than interstate ones, but resource scarcities in particular are more likely to lead to internal than external conflict.[140] This is partly because war is expensive, not only financially but in terms of human capital, and so is an inefficient means of solving a resource scarcity. If possible, a state would choose to manage its demand for a resource rather than externally seeking to increase its supply.

Obviously this is not always possible, but as long as it is, the lack of water remains a relative scarcity rather than an absolute one, and does not pose what Stewart calls an existential threat. In these cases, armed conflict is unlikely; instead, states will pursue demand-side policies.[141] The problem with this is that although it averts interstate conflict, states must be careful in enacting demand management policies domestically, as these can be quite controversial. This is definitely the case in Central Asia. As mentioned in section 2, the most crucial and basic step towards managing water consumption in the region is to introduce water pricing, as water is either free or heavily subsidised in all the Central Asian states. Having to pay for something that was once a public good will never be popular, and it will make many people economically weaker, and it will hit the poorer people the hardest. Compounded with this, in the countries with liberalised economies the wealthier farmers and larger industries will be able to afford more water, and if the supply is limited this means that poorer farmers and households will end up with less water. This imbalance would only increase as the wealthier water users would be able to afford to improve the efficiency of their water use with more watertight containers, lined and covered irrigation canals or drip irrigation systems, whilst the poorer water users would not be able to afford this. This can only then exacerbate the inequalities that already exist in the region, increasing social tensions. In Turkmenistan and Uzbekistan, which have undergone substantially fewer economic reforms than their neighbours, this tactic might appear easier to enact, as the adverse effects of inequality can be centrally mitigated. However, the agricultural sector in

[139] The Andijon crisis is a point of contention here, as there is little concrete evidence of, and therefore agreement about, what actually happened. Though some sources do claim that more than a thousand civilians and militants were killed, most sources disagree. See for example Akiner (2005) or International Crisis Group (2005) for an overview of differing accounts; the definition of war as requiring more than a thousand battle-deaths originated with J. David Singer's Correlates of War Project (1963), but has been disputed by other definitions, such as the UCDP / PRIO Armed Conflict Dataset which uses the much lower threshold of 25. Ultimately the distinction is unimportant for this essay.

[140] Homer-Dixon (1994), p. 20.

[141] Stewart (2014), pp. 101-102.

these states, especially the cotton industry, is dominated by political patronage networks that would be unwilling to see their rents decrease.[142] Levying water charges on this industry could easily upset the balance of power within the countries and create problems for the regimes trying to stay in power. If the state were to absorb these costs, much of the point of the pricing scheme would be lost and the states would suffer lower foreign revenues as their cotton became less competitive internationally.

The same applies to wider structural reforms advocated by Ohlsson. Market pricing of water might lead to industrial users of water to out-compete less efficient users of water like farmers, especially those producing thirsty crops like cotton, leading to greater output from the limited water supply. Kazakhstan has already taken some steps in this direction, encouraging a switch from cotton to cereals in its southern regions. If this were to be done through market pricing of water, however, it could quickly lead to the marginalisation of farmers who are unable to compete with more efficient industries. In Turkmenistan and Uzbekistan this tactic, whether enacted through a market approach or an administrative approach, is unlikely due to the clientalistic networks involved in the cotton monoculture. However, it then becomes a question of risk analysis. The current water consumption in these two countries especially is unsustainable, and so at some point a choice must be made between increasing supply and managing demand.

It has been argued that oil and gas wealth is often linked to increased spending on the military and other coercive organs which enables states to suppress internal dissent and rebellion.[143] Furthermore, resource wealth also allows a regime to spend more on social goods, reducing the population's grievances and causes for discontent. Turkmenistan, for example, subsidises energy and water for its citizens to the extent that this expenditure only made up 0.3 per cent of the average household's budget in 2009, whereas in Tajikistan, the opposite extreme, this figure was six percent. In the same year Turkmenistan also spent a higher percentage of its GDP on health than any of the other republics.[144] Similarly, Uzbekistan was the biggest spender in terms of education and Kazakhstan seems to have been able to distribute its mineral wealth somewhat more equally, having the smallest proportion of its population living under the poverty line.[145] Indeed, all five states focus significantly more resources on maintaining domestic stability than preventing international security threats, limiting both the feasibility of unrest by closing down the space for rebellion and averting potential grievances.[146] This may have been a contributing factor towards

[142] International Crisis Group (2002b), p. 1.
[143] Blank (2004), p. 344.
[144] EBRD (2009), pp. 230, 238.
[145] *Ibid*, pp. 178, 246; a figure for the poverty rate in Turkmenistan was not available for the same period (p. 238).
[146] Swanström et al (2005), p. 2; Chatham House (2013), p. 7.

internal stability in the energy exporting states up till now, but it is unclear whether this wealth is enough to maintain such a repressive regime should unpopular and marginalising water management policies lead to greater public discontent. Moreover, a sudden exogenous shock, such as a drought or a rapid fall in energy prices could trigger seemingly latent endogenous conflicts.[147]

As with interstate war, internal conflict is also the result of a multitude of factors. Water scarcity, or efforts to manage water demand, may not be enough to seriously marginalise a significant sector of the population and give them cause for rebellion. As Ohlsson writes, for violent conflict to occur as a result of impoverishment, it must be 'pervasive to the degree that the legitimacy of the state is threatened'.[148] However, if this interacts with other factors already present the situation might change. It was argued above that ethnic tensions in the region are not significant enough to seriously threaten state stability. However, that kind of social cleavage can combine with resource-related grievances to spark conflict. It has been argued that this is what happened in Osh in 1990 and 2010. Uzbek minorities in Kyrgyzstan and Tajikistan are often seen as living on some of the most fertile land with the best access to water resources in the Fergana valley. This led to what was clearly ethnically targeted violence, but was triggered by more serious grievances over issues of land and water.[149] These kinds of clashes could become more frequent and serious if comprehensive water policies were enacted in the region as Uzbeks, who are already perceived as being wealthier, could then be seen to be receiving a disproportionate amount of water. The regional divide in Kyrgyzstan may also come to fore under these circumstances. Though currently characterised as a political rivalry between competing patronage networks, the split could become more conflictual with the introduction of water pricing schemes and allocative efficiency initiatives that would hit the south disproportionally due to its much heavier reliance on irrigated agriculture than the north. A similar situation could develop in Uzbekistan, where provinces downstream receive much less water than those further upstream. The most serious case is Karakalpakstan, where some regions go years without receiving any water.[150] In addition to this, Karakalpakstan is an autonomous republic, meaning it has not only the ethnic division from Uzbeks to potentially rally around, but also the administrative structures to organise a more concerted push for secession. However, ethnic relations with Uzbeks have so far remained peaceful and there have as yet been no outward signs of unrest, though perceived neglect by the

[147] Maxwell & Reuveny (2000), p. 302.
[148] Ohlsson (1999), p. 230.
[149] Akbarzadeh (2004), p. 691.
[150] International Crisis Group (2002b), pp. 21-22.

government in Tashkent and increased environmental degradation has led to some calls for independence.[151]

The causal mechanism between resource scarcity and domestic conflict, whereby demand management policies stoke instability by widening inequalities, has received its share of criticism. However some of the most common objections are less potent when applied to the case of water in Central Asia. One objection, which has already been addressed to a certain extent, is that resource scarcity tends to lead to price increases that will in turn spur innovations into more efficient use.[152] However, this mechanism only works in a free market economy, and as long as the biggest water consumers, Turkmenistan and Uzbekistan, remain as unreformed as they are now, this simply will not happen. The corruption present in all states has a tendency to undermine property rights as well, discouraging investment into efficiency even where land is privately owned.[153] The main objection is that scarce resources can be substituted or acquired through trade.[154] Water, however, cannot be substituted, as it is vital to so many industries as well as general human existence. It is also too cheap by volume to be transported efficiently for direct trade. The solution here would be 'virtual water', where imports take the place of the products water would otherwise be used to produce. However, this again comes into conflict with the political interests vested in the cotton monoculture in the downstream states, at the same time as it runs up against the upstream states' inability to afford large imports. The Soviet-era water-energy nexus can in fact be seen as a form of virtual water scheme for these states, importing the energy they would otherwise generate through hydropower installations. However, the issue remains that they can no longer afford to do so. It appears then that water scarcity, especially when combined with other grievances, has the potential to spark conflict, and that the only reason violence has so far not been widespread is the reluctance of the region's governments to enact serious demand management policies and the ability (of some of them at least) to suppress unrest for the time being by limiting any compounding economic, political or ethnic grievances.

5. Conclusions

This paper has attempted to shed some light on why the five post-Soviet Central Asian republics, contrary to most expert predictions, have seen relatively little armed conflict since the dissolution of the Soviet Union. Previously this discussion has focused on other potential causes for conflict that largely have not come to fruition, such as international border

[151] Saidazimova (2008).
[152] Gleditsch (1998), p. 383.
[153] Kipping (2008), p. 316.
[154] Gleditch (1998), p. 383.

disputes, Islamic extremism and ethnic tensions. This paper, on the other hand, has focused on the role played by the region's natural resources in stoking conflict or preserving peace. The theory on the causal mechanisms joining resources, be that resource abundance or resource scarcity, with conflict is a broad field, and there is no such thing as a comprehensive model. There exist too many additional variables that preclude any clear predictive ability of the theory. However, this has made it possible to suggest aspects of the Central Asian context that might be disrupting the proposed mechanisms for conflict, and further postulate under what circumstances this relative stability may break down and lead to armed conflict.

The resource situation in Central Asia is characterised by extreme imbalance, between those states with significant reserves of hydrocarbon resources and those without. It seems that the energy exporting states, Kazakhstan, Turkmenistan and Uzbekistan, have comparatively stronger regimes and state structures than most of the resource-dependent developing countries that were used to develop the models that suggest that resource abundance, especially oil wealth, has a tendency to cause internal conflict, be that regional uprisings and secession or complete regime overthrow. Social service institutions and coercive structures left over from the Soviet period have been strengthened by the increased oil and gas revenues in these states, reducing the incentive for aggrieved parties to take up arms against the central government. Peripheral regional political structures rarely coincide with resource concentration, undermining any serious attempts at violent secession, and generally benign ethnic policies of inclusion and civic nation-building has made mobilisation along ethnic cleavages less realistic. The Kyrgyz Republic and Tajikistan are much weaker states, with less developed institutions and coercive structures, but at the same time these countries have such limited resource wealth that any theories linking conflict with resource abundance are simply not applicable. Unrest related to resource distribution in these countries, like miner strikes and occupations, has taken the form of labour disputes rather than any form of politically motivated uprising. Despite there being significant dissatisfaction with the distribution of resources and their rents within all these states at times, this has not yet coincided with other grievances to produce a strong enough case for violent conflict. One factor is rarely enough to spark armed conflict, and so the absence of compounding causes has kept these states reasonably stable, especially with the emphasis of all five regimes on maintaining domestic control.

The theory of interstate conflict on the basis of resource abundance is much weaker and few observers would have predicted this happening in the region. As yet the energy exporting states have sufficient reserves of their own to risk seizing those of another state. In addition to the monetary, political and human costs of such a war, the geopolitical situation rules this out as a rational decision. The prominent interests of China and Russia in

the region, combined with the security organisations they lead, means these great powers are likely to intervene in some form should an interstate war break out. This presents the energy producers with too much of a risk. Kyrgyzstan and Tajikistan simply do not have the capacity to seize the energy resources they so desperately want and will be forced to continue trading for them.

When it comes to interstate war, the role of resource scarcity (in Central Asia represented by water resources and access to them through the irrigated farmland) can be explained away in much the same way. The potential for Russian or Chinese involvement does not change with the *casus belli*, nor do the costs of conflict (unless it is assumed that the state being invaded is weaker than in the case of energy resources, which makes for a small difference). However, the water situation has become so securitised that it has at times looked ready to trump these considerations. Especially Uzbekistan has been put forward as a prime candidate for aggression (of any kind) and rumours of military exercises resembling the seizure of water resources presents a worrying prospect. However, no such invasion has yet materialised. The theories of resource scarcity and its relevance for armed conflict go some way in explaining this. It is stressed that in almost every case, increasing one's supply of water is so ineffectual that managing demand domestically is the safer option. Not only would water wars be costly and water resources difficult to hold onto, but the actual increase in supply secured would be minimal and temporary. If Uzbekistan were to seize the Toktogul reservoir in Kyrgyzstan, for example, this would only be beneficial until another dam is constructed upstream, leaving Uzbekistan in the same position as it started in. Instead, it is suggested that water disputes are just as likely to lead to increased cooperation. In Central Asia, however, it is debatable how effective this cooperation is. It is true that several organs exist through which water disputes can be resolved, but most of the time the governments choose bilateral deals instead. Even these are rarely followed exactly, and disagreements are always arising. However, bilateral agreements, even if they are only stop-gap measures unable to deal with the issue seriously, still serve as regular instances of cooperation, which may be reducing the risk of conflict and fostering cooperation in other areas. It is still unclear if these regular disagreements are highlighting the severity of the situation and actually precluding escalation of the conflicts, or if it remains a cynical cost-benefit analysis where war is only ruled out for the time being because of its associated risks.

This is further reinforced by these states' efforts (or lack thereof) at the only other way to alleviate resource scarcity, namely management of domestic demand. It is argued that most water scarcity situations will take this route, with governments seeking to manage how much water their populations use, encouraging more efficient use, and restructuring the economic system to feature industrial sectors that derive more output from less water

consumption. Such drastic changes, most notably the introduction of market pricing for water, is bound to sow discontent amongst households and businesses and it is posited that this is the most serious source of potential conflict arising from resource scarcity. So far, such policy changes in the region have been minimal. Water remains free or heavily subsidised and Turkmenistan and Uzbekistan in particular are extremely unwilling to undermine the competitiveness of their cotton by imposing greater costs on its producers, and even more loath to abandon the industry entirely, despite its growth and intensity being entirely unsustainable. Such changes would no doubt massively destabilise both regimes, and therefore they have chosen to placate their populations for the time being. However, population growth and the expansion of irrigated farmland in the region, combined with the effects of global and regional climate change, mean that the water situation is only becoming more acute. Sooner or later, these states will be forced to choose between increasing their supply or managing their demand, both of which are fraught with risks of instability in the region.

These risks could be averted if a conscientious effort to deepen cooperation over water in the region were pursued. Cooperation theorists argue that the net benefits of cooperation are usually higher than conflictual relations, and moreover that cooperation brings benefits for all parties involved. The problem in Central Asia is that there is a low demand for regime-building, especially in the water sector because it is so highly securitised.[155] The perception of the issue as a zero-sum game makes it difficult for the governments to even see benefit-sharing as feasible, possibly a result of a general lack of trust in the region, both personal and institutional.[156] However, there are also reasons for optimism. The historical record is positive on the issue, indicating that cooperation is much more common than armed conflict. Indeed, cooperation over water is common, even among so-called 'non-cooperating' states.[157] Furthermore, even in the region examples of good faith have been seen, from backing down from hard-line positions (Kyrgyzstan agreeing to halt winter releases) and unilateral conservation efforts (Kazakhstan's initiative to increase flow to the Aral Sea) to genuine cross-border cooperation and the setting up of real, equitable water consortia (Kazakhstan and Kyrgyzstan on Talas and Chu rivers). Even experts in the region proclaim that 'the states in the region are not yet ready to engage in meaningful mutually beneficial cooperation', but this may change as the situation becomes worse and the different governments realise that more concerted cooperation is the only way to avert serious conflict.[158] They have managed to do so for almost 25 years, and most of

[155] Granit et al (2012), pp. 421-422.
[156] Swanström, Cornell & Tabyshalieva (2005), p. 17.
[157] Elhance (1997), p. 211.
[158] Kemelova & Zhalkubaev (2003), p. 502.

the reasons behind this that this paper has explored still stand, from exogenous deterrents to internal stabilisers. If the water issue could be de-securitised and some genuine trust and cooperation fostered, the regimes should be able to continue mitigating resource scarcity as a source of conflict.

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