Water – A Source of Conflict or Cooperation in Central Asia

PLM 5620 – Research Project (Politics)

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## Water – A Source of Conflict or Cooperation in Central Asia

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Water – A Source of Conflict or Cooperation in Central Asia

‘History is replete with examples of violent conflict over water’

(Butts 1997)1

Abstract

The issue of water is emerging as one of the most talked about topics in contemporary international relations with resource security recently gaining prominence within ‘high politics’. This is especially so in Central Asia where the countries of the region have been faced with a serious depletion of water in the Aral Sea Basin. As a result, several international and regional initiatives have been developed by newly established institutions seeking to minimise the risk of water related competition amongst regional states. Scholars have tended to argue against the ‘water wars’ hypothesis, believing that market forces and institutions will conspire to prevent the eruption of conflict. However, the case of Central Asia shows that the market will also continue to drive the region’s state sponsored cotton-economy as well as authoritarianism in an independent, state-centric Central Asia, all of which portend growing tensions over rapidly diminishing water supply. This paper will reflect on recent developments and offer a theoretical framework that leads to the conclusion that the potential for conflict resulting from water allocation disputes is likely to increase.

Keywords: ‘water wars’; environmental scarcity; water security and conflict; Central Asia; New Security Threats / Grey Area Phenomena; Aral Sea crisis.

INTRODUCTION

Situated on the old ‘Silk Road’ route from Europe to China and between Russia and India, Central Asia has often been classified as pivotal to securing great power interests. Historically the exercise of the “Great Game” between the major empires made Central Asia a contested territory. According to UNESCO, Central Asia encompasses a significant number of countries, in addition to absorbing Mongolia and China’s autonomous region of Xinjiang. A litany of “rulers have sought to demarcate political borders,” among the region’s people, yet water continues “to link” these societies together.

For our purposes, Central Asia is considered home to the predominately Muslim populations living within the five states of: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Over the past four decades however, it has been transforming into a highly desertified and arid region, where water scarcity and water dependency intertwine with economic, environmental, political and security uncertainties. This paper will assess whether a region that has been so heavily scarred by Soviet industrial legacies will follow an international trend whereby, “disputes over shared rivers,

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2 Stretching for over 7,000km from China to the epicentre of the Roman Empire in the 2nd century AD, the Silk Road initially was used for transporting luscious silks from China to Rome. Please refer to ‘Appendix 1a. The Great Silk Road map’, in order to grasp the historical context of this grand region.

3 The term “Great Game” has been historically associated with the struggle between the British and the Russian Empires in their aims to protect their vested interests in Afghanistan. The British Army’s assessment of an expansionist Russia, heightened tensions and anxieties in London, leading to forecast of a possible war. Today, the term is in a period of renaissance. The Great Powers with vested interests in Central Asia currently are: the United States, the Russian Federation, the Peoples Republic of China, and to some degree India.

4 Please refer to ‘Fig. 2. Map of Greater Central Asia [as defined by UNESCO]’


6 Please refer to ‘Fig 1. Map of Central Asia’
have rarely, if at all, resulted in violence; or, on the other hand, whether the situation will spiral out of control and lead to a conflict (be it conventional or in the form of ‘new security threats’), with water as the catalyst for violence.

Fig. 1 - Map of Central Asia

Source: Encyclopaedia Britannica, Inc. 2004

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8 ‘New Security Threats’ and ‘New Phenomena Threats’ refer to threats that are outside of conventional understandings such as people smuggling, internet hacking, narcotics trade etc... The main element of these threats is that they have the potential to spiral to a degree where conventional means of warfare are employed. i.e. The deployment of ground troops to secure a watershed, as may be the case for our purposes.
Once a region with extensive river basin systems and home to “lush fields”\(^{11}\) of beautiful inland flora and fauna as well as to a number of animal and bird species, Central Asia today clearly illustrates that natural resource mismanagement has the potential to destroy entire ecosystems, create social incohesion, and to foster government regimes that are unwilling to abide by regional treaties and/or protocols. Since the Balkanisation of the Soviet Union, a multiplicity of water-usage agreements have been ratified within the ‘Five Stans’\(^{12}\) in conjunction to an array of international organisations being established to deal with dispute resolution and water management in Central Asia. Yet the Aral Sea (once the world’s fourth largest inland body of water\(^{13}\) and the region’s most important water supply) has continued to depreciate regardless of the existence of these international bodies. The situation has escalated to such a degree that the Amu Darya River which

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12 The term refers to the five Central Asian states, abbreviating them to ‘Stan/s’
flows into the sea in Uzbekistan, no longer reaches the shoreline, but rather ends 100 km\(^{14}\) from its original entry point in the semi-autonomous region of Karakalpakstan.

The problems facing the governments of Central Asia’s states revolve around their inabilities (or unwillingness) to allocate appropriate financial resources to saving the Aral Sea Basin. The Uzbek government has lost faith in seeking to revive the Aral Sea and is instead seeking to “reengineer the Amu Darya River Delta near Muynak”\(^{15}\) by furthering oil exploration in their part of the Aral Sea. Compliance between party states in the matter of water resource cooperation has perhaps dissolved at the same speed as the U.S.S.R. Whereas previously these five states were protected under the Soviet military umbrella, today their survival is in their own hands. Considering that the economies of these states are relatively small on a global scale, dependency on water intensive industries has become a national security matter which overrides concerns about the sustainability of the region’s water basins. In effect because the governments of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan foresee their water-related interests to be of utmost national priority, they are inclined to disregard regional interests in favour of domestic safeguards.

There are a number of scenarios that are currently emerging as possible contingencies in Central Asia. This paper will evaluate the processes where the ‘Stan’ states have collaborated on issues of water and where other combinations of states are leaning dangerously toward conflict. The paper will apply the theoretical writings on the ‘water wars’ thesis as outlined by scholars such as Gleick (1993), Dinar (2007), Spoor (2004) (et al.) and measure them against the current situation in the


\(^{15}\) Annin, P. (2006) p. 33
Central Asian Republics. In addition, it will explore whether ‘New Security Threats’ or ‘Grey Phenomena Area’ threats\textsuperscript{16} have the potential to escalate into a water crisis.

The first section of this paper will provide empirical geographical data from Central Asia in order to express adequately the degree to which the region has changed as a direct effect of poor water management. It will then become evident that rivalries over the finite fresh water resource will continue to mount, escalating the potential for eco-political, military and/or asymmetrical conflict to arise amongst the ‘Stans’. The following section will explore three case studies: ‘Kazakhstan—means of cooperation’; ‘Uzbekistan – the potential for conflict’; and ‘Afghanistan – furthering withdrawal of water from the Amu Darya in the quest of state building’. These will in turn exemplify the very real threat that permeates the issue of water security and on a grander scale, the issues posed by environmental insecurity. The third section of the paper will look at the theoretical backdrop of ‘water wars’ and the relevance of the concept to the crisis in Central Asia. Through thorough analysis and a comparison of the similarities and differences in the above case studies, this paper will argue that in the longer term water conflict is the most likely scenario to prevail in Central Asia.

**CONFLICT OR COOPERATION? AN ANALYSIS**

This section will analyse the ‘water wars’ theory and its relevance in the contemporary Central Asian geo-political environment. By evaluating the adequacy of international institutions in the region, conclusions will draw out that conflict rather than cooperation is the most likely scenario to prevail in ‘the Stans’.

\textsuperscript{16} A ‘Grey Area Phenomena’ threat is an interchangeable term to a ‘New Security Threat’ that has been described in Footnote 6.
THE ‘WATER WARS’ HYPOTHESIS

The view that water will prove to be a major catalyst for conflict has presented itself as an issue of considerable concern in arid regions for decades, particularly in the Middle East. This has been clearly demonstrated by several confrontational situations and/or by suggestive speeches made by regional heads of state. For example, prior to the Six Day War in 1967, Prime Minister Levi Eshkol stated that “water is a question of survival for Israel… Israel will use all means necessary to secure [and ensure that] water continues to flow”\(^\text{17}\). In 1975 Iraq had mobilised troops on the Syrian border in response to Damascus’ reluctance to release additional water into the Euphrates River. By 1979 Egypt’s President Anwar Sadat announced that the only reason that may prompt Egypt to go to war again, would be in the case of water\(^\text{18}\). Similarly, in the early 1990s, King Hussain of Jordan made parallel war-like declarations with respect to Israel’s use of the Jordan River. Evidently the Middle East has had a longer history of dry and drought like conditions and thus serves as an exemplar of behavioural traits that maybe undertaken by regions that are rapidly desertifying.

Consequently, as in the words of India’s prominent environmental activist and writer, Vandana Shiva, the regions that are currently water abundant will shortly become water scarce, and those regions that are already prone to scarcity will soon be experiencing a water famine\(^\text{19}\). This analogy is backed by a study for the International Water Management Institute, conducted by Seckler, Molden and Barker (1998) who estimate that, “slightly more than one billion people live in arid

regions that will face absolute scarcity by 2025.” Considering that 70% of our planet is water, of which 97% is undrinkable, 2% of that is in polar icecaps, the remaining 1% is available for human use, and yet over 0.5% is polluted, leaving us with a mere 0.5% of the world’s water available for consumption.

In regards to the matter of pollution, Central Asia has a high density of nuclear facilities within close proximity to regional waterways. Additionally the overuse of fertilizers, herbicides, and pesticides along with radio-active waste prevalent around the test sites as well as high dust storm activity, all combine to generate a number of poisoning catalysts. The increase in “throat and lung cancers, kidney disease, hepatitis, asthma, bronchitis, gastro-intestinal ailments, infant mortality, birth defects, tuberculosis [and] anaemia” in recent decades and is testimony to the human cost of devastatingly poor environmental management. All states (regardless of its political philosophical mandate) need to assure safety and security for their citizens. Having half of its population debilitated with preventable diseases decreases the potential labour force, puts a strain on healthcare establishments and undermines political legitimacy. Dissatisfaction with the state may in turn contribute to an escalation in protest movements and to some degree can even fuel riots. The politics of anger and of rioting is springing up sporadically around the world. Groups of people are uniting to and rioting in response to ineffective state management and social

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22 Please refer to ‘Appendix 2a. Radioactive, chemical and biological hazards in Central Asia’
suppression. Consequently, “cultures built on anger cannot survive.”\textsuperscript{25} Under the watchful eye of the global media, desperate people living under the most authoritarian of regimes may be willing to risk their lives in the hope of change.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{causal_pathway.png}
\caption{Causal pathway of conflict over natural resources}
\end{figure}

\textbf{Source:} De Martino, L. (2005) Central Asia: Fergana Valley / Osh / Khujand area\textsuperscript{26}

\textsuperscript{25} Sacks, J. (2005, 12/11/2005). "We are in danger of forgetting that waiting comes before wanting." Retrieved 15/10/08, 2008, from \url{http://www.timesonline.co.uk/tol/comment/faith/article589183.ece}.

### Fig. 4 - Table 1 – Populous Indicators (Central Asia)

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Population growth rate (%)</th>
<th>Death rate (per 1,000)</th>
<th>Net migration rate (per 1,000)</th>
<th>Infant mortality (total deaths/1,000 live births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAZAKHSTAN</td>
<td>15,340,533</td>
<td>0.374</td>
<td>9.39</td>
<td>-3.31</td>
<td>26.56</td>
</tr>
<tr>
<td>KYRGYZSTAN</td>
<td>5,356,869</td>
<td>1.380</td>
<td>6.97</td>
<td>-2.55</td>
<td>32.30</td>
</tr>
<tr>
<td>TAJIKISTAN</td>
<td>7,211,844</td>
<td>1.893</td>
<td>6.94</td>
<td>-1.31</td>
<td>42.31</td>
</tr>
<tr>
<td>TURKMENISTAN</td>
<td>5,179,571</td>
<td>1.596</td>
<td>6.11</td>
<td>- 3.00</td>
<td>51.81</td>
</tr>
<tr>
<td>UZBEKISTAN</td>
<td>27,345,026</td>
<td>0.965</td>
<td>5.3</td>
<td>-3.04</td>
<td>24.23</td>
</tr>
</tbody>
</table>


Figure 3 demonstrates a number of interactions between human beings and the environment which have the potential to erupt into an ‘environmentally induced conflict’. In the ‘Stans’ as generally everywhere else in the world, regional populations are growing despite of high mortality and emigration rates. By addressing the ‘causal pathway of conflict over natural resources’ diagram, one can conclude that rising population growth impacts substantially on environmental instability. In combination with the other factors outlined in the model, such as ‘environmental scarcity’, ‘environmental discrimination’, ‘migration of affected peoples’, and the ‘segmentation of society’ among others, applying these prevalent vulnerabilities within and throughout Central Asian Republics exhibits the wider regional incohesiveness, which almost certainly will prompt conflict. The destruction of regional eco-systems, the exponential growth of desertified areas in addition to a continual mismanagement of the two main river systems, leaves Central Asia increasingly prone to natural disasters and extreme weather fluctuations, resulting from climate change.

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Boesen and Ravnborg (2003) suggest that globally “the danger of ‘wars’ appears more remote, and ‘riots’ more threatening”\textsuperscript{29}. The basis of this assumption is reliant upon current evidence of downstream-upstream / upstream-downstream river interaction. In most cases, upstream states tend to be wealthier and to withhold a greater share of influence over the allocation of water resources. However, the relative power nexus is broken when the downstream country believes that it is militarily stronger than the upstream state\textsuperscript{30}. As mentioned, the current situation in Central Asia represents this power nexus. Uzbekistan is in the position to use force to guarantee its water supply. Whether or not this would be utilised in a conventional conflict form or as a sanctioning force holding Kyrgyzstan and Tajikistan hostage, it nonetheless adds to regional tensions where the upstream states fail to receive the same degree of respect as other regional players. The frustrations of upstream states may resonate into steps toward self-reliance and an abandonment of the water utilisation regime, which may lead to the adoption of unconventional means to stand their ground.

Basing his analysis on the work of Gleick, Dinar\textsuperscript{31} outlines the following as the most likely sources of strategic rivalry between water sharing states: (1) level of scarcity, mismanagement, or misallocation of water resources among the riparians (states that share a river system). He states that as scarcity reaches dire levels, particularly more so in one of the riparian states, the drive toward securing resources may heighten, leading to greater strategic tension amongst the neighbouring states; (2) degree of interdependence among the states regarding the water resources that they share. This point asserts that strategic rivalry has a greater probability of

\textsuperscript{29} Boesen, J. and H. M. Ravnborg (2003). From Water ‘Wars’ to Water ‘Riots’? - Summary of Conference Discussions and Conclusions. FROM WATER ‘WARS’ TO WATER ‘RIOTS’? - LESSONS FROM TRANSBOUNDARY WATER MANAGEMENT, Copenhagen, Denmark, Danish Institute for International Studies, DIIS. p. 102
\textsuperscript{31} Dinar, S. (2007). p. 23
occurring between riparian states that are both (if not more) greatly dependent on the river/sea. The higher the intensity of dependency, the greater the potential for conflict; (3) geographic and historic criteria of water ownership ‘vis-à-vis’ states. Here Dinar alludes to the changes in demarcation of ownership that may have occurred during colonisation, or as in the Central Asian example, as a ramification of Soviet era boundaries\textsuperscript{32}. Indigenous populations may dispute ownership of water with the regional governmental bodies, or on a macro scale, the independent states may themselves become entrenched in a battle over their historical/geographical water rights; (4) relative power of parties. This is a pivotal point in the water conflict/cooperation debate. The economic and political strength of riparian states should ideally be of equal measure for cooperation amongst water using states to prevail. When one or more states in a shared river basin is economically or geo-strategically more powerful, the relatively weaker state would be inclined to succumb under the manipulative arm of their more powerful counterpart. Means of conflict may arise either from the more powerful aggressor or as a rebellious response from the geo-strategically weaker state. A Central Asian example might be a potential Uzbek aggression against a weaker Kyrgyzstan; (5) whether a protracted conflict underlies a water dispute. Further strategic rivalry may arise from a failure of reconciling an ongoing conflicting water-related issue as in the case of Central Asia\textsuperscript{33}; and (6) an ambiguous property right allocation regime. Disputable or unclear property right allocation regimes may be viewed by some parties as a source of bias, therefore stemming dissatisfaction and ultimately conflictual relations among riparians. In short, Dinar presents a number of scenarios which heighten strategic rivalries and therefore contribute to tense relationships amongst the river sharing states and by so doing he offers a useful way of


measuring the interactions currently evolving in ‘the Stans’. Using his criteria it becomes evident that water related conflict is a distinct possibility amongst Central Asia’s republics34.

This paper has so far placed considerable value on to the degree of scarcity of water resource, the extent to which the interdependence between the ‘Stans’ exist upon the access to water as well as the relative power of all parties involved. Added to this are the geographical characteristics of the conflict zone, which refer to whether the disputed river is a “through-border” or a “border-creator”35. Disagreements are more likely to occur between upstream-downstream riparians than over a territorial demarcating river. This is because with ‘border-creator’ rivers it is easier to monitor rights to use. The Amu Darya runs along a great proportion of the Tajik-Afghan border, and as discussed it provides opportunities for states such as Afghanistan to extract water from the river. In other cases, the downstream states are suspicious of upstream riparians polluting waterways in areas outside of their capacity to monitor activities.

In conjunction with a protracted conflict underlying the water dispute, in the case of Central Asian Republics, access to and the use and distribution of water resources has rendered states more inclined towards conflictual rather than cooperative responses. The unfair conditions under which the current water allocation regime functions also widen cracks in a fragile system that seeks to ensure cooperation amongst its member parties. Bribery, in the form of “side payments”36 is common on a governmental level but no longer sufficient. Simply, the Kyrgyz Republic is not in the

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34 For further insight please refer to ‘Appendix 2b. Table 1: Water Event Intensity Scale 1948-2005’ and ‘Appendix 2c. Table 2: Water-related conflicts in the Aral Sea basin’
36 Ibid., p. 35
financial position to maintain the Toktogul Water Reservoir upon which the down-stream states rely upon so heavily, and requires a substantial financial assistance from all regional riparian states.

Critics of the ‘water wars’ thesis claim that the tendency of water disputes continues to coincide with cooperation rather than conflict. Many scholars argue that, regardless of the “sensationalist appeal of the ‘water wars’ thesis, the history of hydropolitics, has been rather one of water negotiation”\(^\text{37}\). Therefore many authors argue that “the world is facing a water governance crisis rather than a water [availability] crisis”\(^\text{38}\). Shifting the emphasis toward the role of responsible international/regional institutions is therefore a prime element of their argument. There is a “perceived need for water-related international agreements”\(^\text{39}\), agreements and institutional bodies which will set out provisions for national and regional water use. Although multilateral agreements are preferable to individual state agendas, the effectiveness of multi-party treaties is yet to be proven as affective.

**THE ROLE OF INSTITUTIONS**

There are a number of environmentally focussed institutions that function in Central Asia. There are also several more treaties that have been proposed by external organisations seeking to expel water and energy competition in the region. In 1997, the United Nations passed a UN Resolution on an *International Watercourses Law*. The main proposals to come out of this treaty emphasised: regular consultation and exchanges of information; peaceful means of dispute resolution; explicit principles for dispute resolution; eco-system preservation; and the prevention, reduction and

\(^{37}\) Ibid., p. 21

\(^{38}\) Boesen and Ravnborg (2003). p. 154

control of pollution\textsuperscript{40}. Article five of the convention calls for the ‘equitable and reasonable utilization and participation’\textsuperscript{41} amongst watercourse users, effectively favouring upstream users under international law and in turn encouraging them to develop along their ‘fair share’ of the river. Alternatively, article seven advocates an “obligation not to cause significant harm”\textsuperscript{42} to fellow watercourse states, declaring that if ‘harm’ is experienced, compensation is necessary. This article favours downstream users, in turn presenting a paradox within the convention by offering a competing party to article five, an opportunity at validating its objectives. Such paradigms are typical of some international agreements that seek to be unbiased, recognising that states can be both up-stream and down-stream riparians of the various rivers running within its borders. Depending on the dispute, either an upstream or downstream state can appeal their case to the International Court of Justice (ICJ) applying the International Watercourses Law (either article five or seven) and potentially winning. When an international piece of legislation can be adapted to one scenario and then juxtaposed by another scenario, overlapping ICJ judgements present confusion and a perception of this type of treaty as an incompetent tool of water conflict resolution.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) became an active participant in the Aral Sea Basin (ASB) as early as 1992. By 1998, the Aral Sea Basin Initiative was introduced with the aim of establishing a network of river basin management systems and forums that aim to, “conceive and implement an innovative strategy in the Aral Sea Basin in order

\textsuperscript{42} Ibid., p. 5
to reduce poverty through the protection and promotion of the natural and cultural heritage.” The attempts made to ensure a participatory approach to conflict resolution in the Aral Sea basin is nominated between “decision makers, scientists, agricultural managers, administrators, farmers and the representatives of all stakeholder groups” through the proposition of various approaches. Projects for addressing the ‘Aral Sea crisis’ are formulated annually by various UN and other agencies. However, it is UNESCO that plays the lead funding role. For 1999 planned activities totalling a sum of US$100,000 were budgeted for. However, it is worth asking whether this money is tokenistic or whether the scientific arm of the world’s largest international institution (the UN) simply fails to understand the ‘real’ effectiveness of a mere US$100,000. For a venture as large as that posed by the Aral Sea crisis, this amount of money is of marginal value. For example, the maintenance cost of just one upstream reservoir is an estimated US$21 million per year.

Surely, seeking to resolve potential crises should involve attempts to ease the financial burden of water treatment and water maintenance. Secondly, how is this money distributed between the five states? Are we to assume an equal distribution for individual projects between ‘the Stans’, or are the states that have greater access to the water resources in a position of privilege?

In 2000 UNESCO published its Water-Related Vision for the Aral Sea Basin for the year 2025 which stated in part,

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45 Ibid.
46 As previously mentioned, the report put out by the International Crisis Group in May of 2002 stated that the Toktogul Reservoir in the mountainous Kyrgyzstan requires somewhere between USD 15 million –USD 27 million annually in maintenance fees; cited in ICG (2002). p. 16
Regional co-operation was needed to restore a basin-wide mechanism and perspective in water and salt management. Following the independence of the Central Asian republics in 1991, Soviet central authority over basin development gave way to that of five sovereign governments acknowledging distinct interests. Management of water resources came to be undertaken according to national perspectives. If the interests of water users were addressed somewhat inefficiently, the interests of the Sea, deltas and wetlands were nearly orphaned. (UNESCO: 19)47

UNESCO followed this up in 2002 with the ‘New Aral Sea Basin Initiative’. Working under the “auspices of the World Water Assessment Programme”48, UNESCO and other agencies sought to conduct further research into the possibilities of conflict or cooperation in Central Asia, building on the back of the UN’s designation of 2003 International Year on Freshwater49. As many as 23 UN sub-committees have contributed in some way or another to the various proposals suggested in the forums and/or workshops. One project that has arisen through this participatory mechanism has been the ‘CCT Poverty Project 04513: Contributing to Poverty Eradication through Sustainable Income Generation in an Ecological Disaster Area’ (2004)50. UNESCO has allocated a total of US $150,00051 with a 2004 allotment of US $75,00052 to this project. The goal of this project is to reinvigorate the tourism industry in Central Asian under the name of ‘Golden Ring of Khorezm’. It is assumed that tourism revenues will provide the financial basis for cultural and environmental preservation. In effect, water pollution will be addressed through funds generated by the tourist flow. The project also seeks to set up a live GIS webpage or in other words a ‘virtual laboratory’53.

49 Ibid.
51 Ibid.
52 Ibid.
53 Ibid.
which will transport research between the project’s partners (Germany, Holland and Kazakhstan) seeking to extract and implement sustainable resource management measures in the Central Asian states. This approach has definite grassroots foundational building-blocks in conjunction to several long-term benefits. Since the first Khorezm Tourism and Culture Festival in June 2005 there have been a number of training/educational programs that have attributed to qualifying professionals in the fields of tourist management, weaving and conservation and the skilling of professionals who are becoming highly dependent on work opportunities that arise from tourism. Although this type of community planning sets an important regional precedent, it is important to note that Central Asia is an area where air and water-borne diseases are highly prevalent. The potential health risks attached to travelling to Karakalpakstan (the poorest region of Uzbekistan which encompasses the area where the ‘Golden Ring of Khorezm’ project is focussed upon) exceed probabilities of safe travel. In 2002 the American RedCross estimated that the infection rate of tuberculosis amongst the local populous was somewhere between 250 and 370 people out of every 100,000. Australia’s Department of Foreign Affairs and Trade (DFAT) advises its citizens to “exercise a high degree of caution” when travelling to Uzbekistan on the grounds of high terrorist alerts in conjunction to indications of high health risk: “Water-borne, food-borne, parasitic and other infectious diseases (including tuberculosis, typhoid, brucellosis, hepatitis and rabies) are prevalent with more serious outbreaks occurring from time to time”. Therefore, the trend toward reinvigorating the local economy which in the long term is aimed at contributing to a more effective means of regional water management through the fostering of a tourist industry

57 Ibid.
seems at first sight to be farfetched. As Western governments (such as Australia) issue warnings to its citizens in travelling to this volatile region, it is worth asking who the Uzbeks and UNESCO are ultimately trying to attract to Karakalpakstan to feed the tourist industry.

At the decree of Central Asia’s five Water Resource Ministers, on February 18, 1992 in Almaty (one of Kazakhstan’s major cities), an “Agreement on cooperation in joint management, use and protection of interstate sources of water resources” was signed. In essence, this agreement acted as a pillar to the establishment of the Interstate Commission for Water Coordination in Central Asia (ICWC), another body set up to deal with the “institutional vacuum” that widened after 1991. As its name suggests, the ICWC is a coordinating body that propagates further agreements and forums for discussing the region’s water allocation and cooperation initiatives. March 1993 saw the establishment of the International Council on the Aral Sea (ICAS) with an Executive and a Secretariat which were designated to serve as advisory agents for the region’s governments. The International Fund for saving the Aral Sea (IFAS) was then founded to finance the activities of the ICAS. Initially, the core mandate of the IFAS was aimed at, “financing and crediting of joint practical actions and perspective programs and projects for the Aral sea saving, ecological rehabilitation of Pryaralye and of the Aral Sea Basin as a whole with account of the interests of all the states of the region”. However, after a few years a merger between the ICAS and the IFAS occurred forming the new IFAS, which is now supported by the deputy heads of regional states. Central Asia is now faced with an intergovernmental institution within which their head’s of state are propagating their own objectives rather than seeking to achieve mutually

60 Ibid.
beneficial solutions. Water continues to be heavily drawn from the two feeding rivers. The wealthier downstream states continue to gain disproportionate benefits from the defective agreements. The neoliberal approach of seeking ‘democratic peace’ by increasing the number of multilateral agreements and/or institutions has proven ineffective in a region that continues to show evidence of authoritarianism, corruption and malfeasance.

The inadequacy of the IFAS can be witnessed through the weak centralised base of the institution, which does not hold sufficient power regionally. On its establishment, the IFAS was to receive its funding from member states equating to 1% of their GNP\textsuperscript{62}. The quota was later reduced to 0.3% for Kazakhstan, Turkmenistan and Uzbekistan, and 0.1% for Kyrgyzstan and Tajikistan\textsuperscript{63}. The weakness of IFAS in ‘the Stans’ foreign policy agenda is illustrated with the ‘Stans’ irregular payments of their annual compulsory fees to IFAS. Additionally, in 1998 it was decided that dealing with the Aral Sea crisis would be pursued on a domestic capacity through domestic IFAS branches, in effect diminishing the central IFAS account\textsuperscript{64}. Dr. Ataniyazova sums up the appeal of international/regional institutions from a local perspective:

“There are so many Aral Sea programmes, organisations and experts around the world; they come regularly, and replace each other, with no real outcomes for the local people. We have become an experimental zone for investigation and model implementation…”\textsuperscript{65}

The table below demonstrates some of the international treaties that the Central Asian states are either signatories of, or partied to. Interestingly, none of the agreements have been ratified.

\begin{table}
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\begin{tabular}{|c|c|}
\hline
Treaty & Signatory States
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Aral Sea Basin Treaty & Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan, Russia
\hline
International Convention for the Protection of the Aral Sea & Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan
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\end{tabular}
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\textsuperscript{63} Ibid.
\textsuperscript{64} Ibid.
Fig. 4 - Table 2 – International Agreement signatories (Central Asia)

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<tr>
<th>International Agreements</th>
<th>Kazakhstan</th>
<th>Kyrgyzstan</th>
<th>Tajikistan</th>
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<td>Climate Change</td>
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<td>Desertification</td>
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<td>Environmental Modification</td>
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<td>Interstate Commission for Water Coordination in Central Asia (ICWC)</td>
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<td>Ship Pollution</td>
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<td>USAID (1998) Program</td>
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<tr>
<td>Wetlands</td>
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| **KEY:** Party to – P Ratified – R Signatory [without ratification] – S |


Although an international institutionalised approach is preferable, the state-centric structure of the current international system makes it extremely difficult to enforce mutually beneficial environmental strategies. Hence, having explored some of the main institutions and regional treaties, it is evident that although the mechanisms of multipartite cooperation are prevalent, their effectiveness is marginal. Participatory institutional interaction represents democratic ideals; however the condition of the Aral Sea today is almost irreversible and therefore requires immediate action under a regulatory system which overrides the sovereignty of regional nation states.

The main assertion made by scholars who argue against the probability of ‘water wars’ is the need for the prevalence of a solid, cooperative, institutional structure that will coordinate the allocations, use and provision of water resources. Unfortunately, as illustrated, Central Asia lacks an institution of such capacity. An early 21st century report compiled by the U.S. National Intelligence Council signifies that the likelihood of interstate conflict will increase during the next 15 years "as countries

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press against the limits of available water.” Emergence of water conflict in Central Asia may arise from continual social and political instability that underpins the regional fabric. Dismissing the inevitable is what is alarming, rather than labelling the high probabilities as alarmist.

Fig. 5 – Up for Grabs: Water Basins at Risk

GEO-POLITICAL BACKGROUND OF THE REGION

Central Asia covers 4 million squared km and is home to over 61 million people, approximately half of whom reside in Uzbekistan. The region is home to four major lakes and river basin...

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68 Please take the time to study ‘Fig. 5 – Up for Grabs: Water Basins at Risk’.
72 Please refer to the CIA World Factbook – Uzbekistan statistics from https://www.cia.gov/library/publications/the-world-factbook/geos/uz.html which outline that the population in Uzbekistan currently stands at 28,268,440 (July 2008 est.)
systems, providing the necessary water to the populace as well as to water dependent industries such as cotton and rice production. Essentially the Aral Sea Basin is the key source of economic and social stability in the ‘Stans’. However, the Caspian Sea, Lake Balkash (within Kazakhstan’s borders) and Lake Issyk Kul (located in Kyrgyzstan) as well as several other smaller lakes also have significant roles to play in the distribution of water resources in the region. With empirical evidence this section will demonstrate the degree to which Central Asia has been transformed as a result of unsustainable resource management and how these practises have unleashed troublesome dynamics which raise the possibilities of struggle between sovereign states to secure their perceived share of diminishing water resources.

ARAL SEA BASIN

The Syr Darya and the Amu Darya are the main two river systems which fed the Aral Sea. Syr Darya is 2,220 km in length. It originates in northern Kyrgyzstan, crosses into Uzbekistan, and then flows into Tajikistan, before re-entering Uzbekistan. After crossing southern Kazakhstan, it flows into the northern part of the Aral Sea. This river had (and continues to have) a lower volume to that of its sister river; nonetheless, regionally it is considered to be the more important of the two. The Amu Darya however is the longer river, with a total length of approximately 2,540 km

ending near the town of Nukus. The river previously emptied into the southern part of the endorheic Aral Sea, which is no longer the case as the river and its tributaries have receded as far as 100 km south. In the past, the Amu Darya was known as the Oxus River and was documented extensively by Alexander the Great during his journeys to the region.

![Fig. 6 – Syr Darya and Amu Darya Rivers making up the Aral Sea Basin](source)

In the 1950s, the Aral Sea comprised an “area of 68,300 km², including a water surface area of 66,100 km² and islands of 2,200 km². The volume of seawater amounted to 1,066 km³.” The region was flourishing with fisheries, producing somewhere next to 50,000 tonnes of output.

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annually. Its local residents were occupied with orientating their livelihoods around, what it seemed like at the time, an infinite resource.

In recent history the Aral Sea basin was extensively exploited for the purposes of Soviet industrialisation. Soviet leadership in the years of the Cold War endeavoured to achieve total self-sufficiency within the borders of its communist bloc. In its attempt to accomplish this, the Central Communist Party (CCP) initiated river irrigation and river re-diversion schemes which were designed to feed the newly established mass cotton and rice industries. The first major construction projects began in the late 1950s. Stalin was confident that re-engineering the courses of the feeding rivers would “make the desert bloom”\(^{80}\). Instead this vision was short-lived for by 1982-83 approximately 40,000-60,000\(^{81}\) fishermen had lost their livelihoods when commercial fishing ceased to be viable. Although the cotton and rice industries continued to grow, the economies of the region which were previously versatile became almost unilaterally cotton-intensive. Consequently, the region began to experience an influx in internal migrants mainly by Tajiks, Uzbeks and Kazakh’s who swelled major towns. This phenomenon has fostered ethnic tensions in provincial towns and larger cities between Kazakhs, Uzbeks and Tajiks, as well as altering the lifestyles of the region’s people to a greater extent\(^{82}\).

The irrigation canals that were installed were of poor quality (70% of which were “unlined” \(^{83}\)) and failed to account for evaporation and other inefficiencies. Further, it is estimated that “half of the

\(^{80}\) Annin, P. (2006) p. 36
\(^{82}\) Please refer to ‘Appendix 3a. The Shrinking of the Aral Sea: Socio-Economic Impacts’ for a visual overview of how the depletion of water resources in the Aral Sea Basin has contributed to the regional socio-economic situation as well as to ‘Appendix 3b. Distribution of Population Groups in Central Asia’ to visualise the distribution of ethnic diversity.
\(^{83}\) Ibid. p. ix
Irrigated land was at one time served by open and sub-surface drains. The escalation of water wastage has grown over the decades. The upstream states, Kyrgyzstan and Tajikistan, are not in the financial position to maintain their reservoirs. Toktogul Reservoir in Kyrgyzstan for example presents itself as the most controversial. The annual costs of maintaining this reservoir range from US$15 million to US$27 million. These costs are unsustainable for the Kyrgyz government and the unwillingness of downstream states to offer financial concessions is fostering friction.

Fig. 7 - Irrigated Areas of Central Asia

Ibid.


Figures 1 through to 8, illustrate the dependency on water in the region as well as the extent to which the Aral Sea has shrunk. These maps give an overview of what has happened in the decades leading up to the current crisis. The former senior manager within the USSR’s Water Affairs Ministry once suggested that the “Aral Sea must die like a soldier in battle!” Unfortunately, this statement has proved tragically prescient. Today, in an era of an independent Central Asia, entrenched tendencies towards a destructive, water-intensive monoculture persist, particularly in Uzbekistan, Turkmenistan and Tajikistan. Additionally, in the absence of a


centralised powerbroker (a position previously held by Moscow), the ‘Stan’ states are finding collaboration on water management issues significantly difficult to sustain. The politicised water relations between the Central Asian states will be explored in greater detail shortly.

THE CASPIAN SEA, LAKE BALKASH & LAKE ISSYK KUL’

The Caspian “is exceptional by many standards”\textsuperscript{89}. It remains the largest\textsuperscript{90} inland lake in the world. It is vastly rich in mineral resources such as natural gas and petroleum. Just like the Aral, the Caspian Sea is endoreic and thus depends on the inflow of rivers to maintain its volume. Currently, the surface area of the lake stands at approximately 436,000 km\textsuperscript{2} and maintains a volume of about 78,200 km\textsuperscript{3}\textsuperscript{91}. The Caspian Sea, although considered by most commentators to be within the Caucuses region, nonetheless has a coastline that is bordered by Azerbaijan, Iran, Kazakhstan, the Russian Federation and Turkmenistan\textsuperscript{92}; and is geo-strategically significant to countries in the Greater Central Asian Region\textsuperscript{93}, as well as to the great powers, as the Caspian Sea contains an abundant supply of oil and natural gas resources\textsuperscript{94}.

The decision to let the Aral Sea ‘die’ came as a repercussion of a scientific assessment made to assure the survival of the Great Caspian Sea, which was foreseen to be of greater strategic importance. Throughout the 1970s, the Caspian Sea was too declining in volume. Drastic measures were suggested by the Soviet Command. Some of the senior bureaucrats proposed re-


\textsuperscript{90} Ibid.


\textsuperscript{92} Please refer to ‘Appendix 3c. Caspian Sea Region’

\textsuperscript{93} ‘Greater Central Asian Region’ – as defined by the UNESCO map in Fig. 1b.

diverting the Siberian north flowing rivers in a “grandiose engineering scheme”\(^{95}\) designed to “feed the Kama and Volga Rivers”\(^{96}\) which empty into the Caspian. Fifteen years of planning this re-diversion scheme was readily abandoned in the early 1980s once the Caspian Sea began to show signs of replenishment. In light of the twenty-first century, the Uzbek government has indicated attempts to revive the grand scheme, by adjusting focus on to the Amu Darya and the Syr Darya Rivers\(^{97}\). The main objectives of replenishing parts of the Aral Sea were to amplify the flow of the two rivers as well as to provide an alternative water supply and thereby decreasing Uzbekistan’s vulnerability to possible interferences and/or withdrawals of water from upstream states. A mandate of this calibre most definitely needs to be open to scrutiny. As Tashkent emphasises the necessity of re-diversion, symbolically, the central government redirects attention from its minimal attempts in the implementation of sustainable water management measures, opting instead to further intensify its cotton production. Considering that the cotton industry contributes to twenty-five per cent of Uzbekistan’s foreign exchange revenues\(^{98}\), government interests in advocating for further environmentally-detrimental strategies (which would have negative global consequences) make no rational sense. If the scheme were to be adopted, the total fresh water flow to the Arctic will be reduced by eight per cent\(^{99}\), leading to dire climate change and significant environmental ramifications.

The regional importance of Lake Balkash is that it comprises its own river basin and more importantly it is within Kazakhstan’s national borders. As the lake is primarily within the territory


\(^{96}\)Ibid., p.114

\(^{97}\)Karaev, Z. (2005). p. 64


boundary of a single state, this allows Astana (Kazakh capital) to have total authority over the resource. Therefore, Kazakhstan can derive extra water resources from Lake Balkash, putting it at an advantage over other states\textsuperscript{100}.

On the other hand, Lake Issyk Kul’ is situated at the base of the Kyrgyzstan’s Tien Shan mountain ranges and is estimated to be the second largest mountain lake amounting to a volume of 1,738km\textsuperscript{3} and a surface area of 6,236km\textsuperscript{2}\textsuperscript{101}. The picturesque waters of the lake contribute to the safeguarding the regional eco-system as well as having further hydrological benefits upon the underground water table\textsuperscript{102}. As depicted in Fig. 4 the northern shoreline of the lake serves irrigational purposes. Interestingly, under the auspices of the current global War on Terror, Russia has undertaken bilateral military ties with Kyrgyzstan (within the Shanghai Cooperation Organization (SCO) framework comprising of ‘the Stans’, Russia and China) which since 2002 has facilitated naval arms testing in the Issyk Kul’ lake area\textsuperscript{103}. These naval exercises will undoubtedly contribute to the pollution of the lake and possibly negatively affect fish stocks and thereby erode local livelihoods.

In conclusion, this section has outlined evidence of the severity of the water crisis in Central Asia. Poor political decision-making has been the most important contributing factor to the depletion of

\begin{footnotesize}
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\textsuperscript{100} & Please refer to ‘Fig. 1. Map of Central Asia’
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\end{footnotesize}
such a vulnerable resource. In particular, it is apparent that the Aral Sea and its two main tributary rivers in particular have been sacrificed for short-term mass cotton production, rice growing and for the preservation of the Caspian, a sea perceived to be of greater ecological, economic and strategic significance\textsuperscript{104}. This data also alludes to the potential for regional tensions arising from competition amongst states in securing future water for industrial use and even self-survival; a theme which will be explored in more detail in latter sections.

\textbf{WATER IN AN ARID REGION – CONTEMPORARY SCENARIO}

During the existence of the U.S.S.R, Moscow hosted the central governing unit responsible for overseeing a water-sharing mechanism in the five ‘Stans’. With the primary intention of expanding agricultural industries in the lowlands of Kazakhstan, Turkmenistan and Uzbekistan, the Soviet government offered the upstream states of Kyrgyzstan and Tajikistan heavily subsidised prices on energy, rice and cotton\textsuperscript{105}. Such incentives were designed mainly to discourage competition amongst states that essentially were autonomous regions of a single national unit. State boundaries were ignored. As Karaev notes, “water reservoirs for irrigation of cotton in Uzbekistan were constructed in Kyrgyzstan, Kyrgyz cotton was ginned in Uzbekistan and the route between them ran through Tajikistan”\textsuperscript{106}. Aside from the significant issue of poor irrigational infrastructure and an absence of a sustainable long term water plan by the central government, regional allocation and distribution patterns were widely accepted and abided by. This situation has changed, after independence and the collapse of the Soviet Union. The ‘water utilisation regime’ continues to be employed by downstream states. However, the exchange of energy for water is

\textsuperscript{104} To visualise the extent to which the Caspian Sea equates to economic and strategic importance, please refer to ‘Appendix 4a. Selected Energy Projects of the Caspian Sea Region’ Map

\textsuperscript{105} Dinar, S. (2007). p. 35

\textsuperscript{106} Karaev, Z. (2005). p. 64
now done at market prices. Compensation has been eliminated. Yet, the expectations of downstream states for unfettered access to water remains similar to that of the Soviet era even though impoverished upstream countries cannot afford to operate as they did in the past. Sustained pressure from Kazakhstan and Uzbekistan ‘not to up the ante’ intimidates the Republics of Kyrgyzstan and Tajikistan, who see their very survival as being at risk. This paper will now evaluate three scenarios where water has been a force of cooperation as well as one of potential conflict.

**KAZAKHSTAN – MEANS FOR COOPERATION**

As 90 percent of Central Asian water resources are concentrated in Kyrgyzstan and Tajikistan, obvious concerns over allocation and sharing mainly occur downstream, where a majority of the water is utilised in the agricultural and energy sectors. Kyrgyzstan and Kazakhstan have had a strenuous relationship since the early 1990s, due to an inability to come to an efficient agreement over water. However, at the beginning of the 21st century, the Republic of Kazakhstan compromised and agreed to comply to some extent with Kyrgyz “Law on the Interstate Use of Water Objects, Water Resources and Water Management Installations” by asserting that: “We should not pay for water but for the services rendered – i.e. for the use of the Kyrgyz water engineering system”. The Kazakhs then showed further compliance by legally agreeing to pay an annual maintenance fee of US$100,000.

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107 ICG FIND PAGE
108 Ibid., p. 36
111 In an interview conducted by the ICG in Almaty on 26 February 2002 cited in Ibid. p. 17
112 ICG interview with Armands Pupols, Economic and Environmental Officer, OSCE, Almaty, 26 February 2002 cited in Ibid.
The following is another example of Kazakhstan confronting the current environmental circumstances and actively cooperating with domestic organisations as well as with international agencies.

**THE SCHEME**

Members of Kazakhstan’s government had been disenchanted over the 1990s with the inadequate mechanisms being injected by international organisations and intergovernmental bodies. It has been suggested by local officials that ‘experts’ have flocked to the region, but on realisation that there is no ‘quick-fix’ solution, they had completed their reports and surveys and simply retreated. Other bodies have worked on declaring the region a disaster zone in dire need of assistance.\(^{113}\)

Yet by delivering immediate relief, international agencies such as the World Bank (WB), the United Nations Environmental Program (UNEP) and the International Fund for the Aral Sea (IFAS), have failed to cohesively amalgamate the two-dozen or so proposed initiatives for the rejuvenation of the Aral Sea Basin in an effective manner.

As Central Asia’s economic powerhouse with key industries in metal production, raw mineral resources, and in oil; Kazakhstan sought to take matters of rejuvenating the Aral Sea into its own hands.\(^{114}\) The Kazakh government developed a plan to build a 13km Kokaral Dam across the newly formed boundary between the North and South Aral Sea through the mobilisation of local man-power to work on the initial stages of the project.\(^{115}\) Knowingly that there would not be enough domestic revenue to fund the proposed scheme, local authorities concentrated on a

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\(^{115}\) Please refer to ‘Appendix 4b. The fragmented Aral Sea’. The project proposed by Kazakhstan is focussing on the ‘Small Aral’ area of the entire sea.
specific area of the dam and dyke construction. As the revenues depleted, the government appealed to the World Bank and the UNEP for a loan seeking to complete the project. Having set a benchmark by investing approximately 20%\textsuperscript{116} of the total costs into the project with its own funding, the Kazakhs effectively demonstrated credible and attainable aims and by June 2001 the World Bank had approved a loan of USD 64.5 million for the \textit{Syr Darya Control and Northern Aral Sea Phase-I Project}\textsuperscript{117}.

The dam and the dykes were completed by late 2005, and water has begun to return to the Aral at a surprising rate. It is estimated that the North Aral Sea has seen its volume increase by 40%\textsuperscript{118}. The sea, which had previously receded 100km from its original shores, was now a mere 25km away. Fishing factories have reopened and Kazakhstan has begun exporting fish regionally and to other countries of the Commonwealth of Independent States (CIS) in places as far away as the Ukraine. People are beginning to regain their identity through their indigenous sources of livelihood – fishing. The climate is also said to have somewhat stabilised. Dust storms have become less frequent and even birds are returning to the coastlines. The barren landscape is slowly but surely developing a green front.

The Kazakh government foresaw that reasoning with its fellow basin-using governments would entail a lengthy and a highly complex process, possibly leading to conflict, or to a lesser degree,

\begin{footnotesize}
\textsuperscript{116} As the article suggests, a total of USD 85 million is being allocated toward the Kokaral Project, yet the World Bank has granted a loan for USD 64.5 million, the difference was provided by the Kazakh government and equated to approximately 20% of the funding.


\end{footnotesize}
friction between the confronting states. Therefore, Kazakhstan’s drive to implement a plan-of-action on the feeding banks of the Syrdarya River, has been successful mainly because of its ability to successfully invite the participation of intergovernmental.

LIMITATIONS AND DRAWBACKS

In order to rejuvenate the Aral Sea parties needed to first express interest in the project. The Kazakh example is concentrated on a small area of sea, yet south of their national border the Uzbek government shows little interest in appropriating schemes which will revive the sea. Unfortunately, neo-Realism becomes a key force for explaining such behaviour. As Uzbekistan is significantly poorer than Kazakhstan (with a GDP [PPP] of USD 62.27 billion\(^{119}\) as opposed to the latter of USD 161.5 billion\(^{120}\) and has an economy which is heavily reliant on cotton production, committing to environmental protocols seems to be out of the state’s national interest, at least in the short term.

Uzbekistan’s president, Islam Karimov, authoritarian in nature, recognises that if he were to promote environmental policy over the monoculture of cotton, his state could fragment into a condition of “political and social instability”\(^{121}\) with ever-growing unemployment numbers. Disturbingly, the Uzbeks are diverting their attention to oil exploration in the dying South Aral Sea. They have captured the attention of five major oil companies\(^{122}\) and are seeking to expand their


\(^{122}\) On August 30, 2006, a consortium comprising of China National Petroleum Corporation (CNPC), Uzbekistan’s Uzbekneftegaz, Russia’s Lukoil, Malaysia’s Petronas and South Korea’s KNOC signed a product-sharing contract on the exploration and development of oil and gas deposits in the Aral Sea. The Aral Sea project covers an exploration
interest-base. Uzbekistan’s belligerent defence of its territorial and political sovereignty militates against compromise. Weinthal advocates that “environmental issues presented an obvious opportunity for U.S. international intervention”\(^{123}\) in conjunction to securing its business and geostrategic interests in the Central Asian region.

In a country such as Uzbekistan, anti-government protestors are shot-dead on the streets. Independent efforts by Kazakhstan are therefore not likely to restore the entire sea. Collaboration is pivotal, even if it is currently a remote possibility because of entrenched political interests. Therefore, the successful rejuvenation of the Aral Sea remains most likely in its northern section, among people and a government that is willing to invest in a sustainable future for its northern tip.

**UZBEKISTAN – THE POTENTIAL FOR CONFLICT**

Those issues most likely to trigger water conflicts in Central Asia can often be traced back to Uzbekistan. Although Uzbekistan has sought isolationism since independence\(^{124}\), Karimov’s government has consistently endeavoured to assert its authority in the region through coercive diplomatic and militarily threatening means. This case study will investigate the variants of potential frictions that could prevail in the coming years, as a result of Uzbek policies and its domestic political circumstances.

Sievers discusses a range of ‘Grey Area Threats’ that are quite likely to arise within the next few decades in Central Asia. Firstly, he claims that the ramifications of the end of the Cold War need to

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\(^{124}\) Karaev, Z. (2005), P. 64
be considered. Under the Soviet Union, Central Asian policies were mostly formulated in Moscow regardless of public knowledge and/or the consent of the locals. There was minimal interaction between the state and the citizen. Although religious practises were discouraged under a communist mandate, Islam continued to play a pivotal role in shaping the cultural practises of many of the region’s people. “Under Soviet rule, Islam was centralized to facilitate state control and supervision”\textsuperscript{125}. In the aftermath of the Soviet collapse, the region is re-Islamising under the directions of the individual governments in order to ensure legitimacy within their electorate while seeking to control the non-secular elements. These developments played a significant role in shaping the domestic and foreign policies of Central Asia’s neighbouring states, such as China, Iran and Russia, who are wary of the volatile nature of politics in the region.

Among the Soviet legacies are the issues surrounding the “successors of the Soviet military industrial complex”\textsuperscript{126}. For example, once a small island in the Aral Sea, by 2001\textsuperscript{127} Vozrozhdeniye (Rebirth) Island, had become connected with the mainland in Karakalpakstan (Uzbekistan’s North-Western semi-autonomous province) because of the shrinking water levels caused by desertification\textsuperscript{128}. Ominously, however, during the Cold War Soviet scientists had utilised the island for biological, chemical and nuclear weapon development and testing. Throughout the 1970s the island was “reputedly used for testing tularaemia, Q-fever, brucellosis, glanders and plague”\textsuperscript{129} and even today is classified as the “world’s largest burial site of weapons-grade
anthrax\(^{130}\). The Island even assumed the nom de plumme ‘Anthrax Island’ and has presented a ‘new security threat’ within the region. This has become a matter of particular concern for Western governments, who fear the potential for these materials and weapons to fall into the hands of opportunists, warlords and/or terrorists. As Karakalpakstan has the poorest population of the region\(^{131}\), and now that there is land access to the island, chemical smuggling is presenting itself as an issue of prime concern for local, regional and international authorities.

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\(^{130}\) Ibid.

Thirdly, the ‘Stans’ geo-strategically divide Europe from what since 1991 has been the “world’s primary opium producing country”\textsuperscript{132} – Afghanistan. Cold War related competition fuelled the establishment of an “illicit drug economy”\textsuperscript{133} controlled by proxy rival factions. The current instability resurging within Afghanistan as a direct consequence of the War on Terror has resulted in a resurgence of opium production. Under the Taliban, Afghanistan was facing international illegitimacy, yet there was a controlled annual opium output. In 2008, the UN Office on Drugs and Crime (UNODC) compiled a report that stated that Afghanistan’s land under poppy cultivation had decreased by 19 percent\textsuperscript{134} over the previous year, primarily due to heavy droughts, although that same report admitted that, “actual production of opium declined only by 6 percent”\textsuperscript{135} in comparison to the year before. Central Asia therefore finds itself in the “narcotics trafficking corridor”\textsuperscript{136}. As the region’s underemployment and unemployment rates continue to rise (in real terms, outside of the official government projections that somewhat understate the real figures), the incentive for illegal ways to earn an income increases. Growing resentment and anger among Central Asia's people could in effect foster the establishment and/or growth of extremist groups and therefore lead to greater hostility in the ‘Stans’. Uzbekistan's Fergana Valley is an example of such a development. Islamism has long played a foundational role within the Fergana Valley which experienced a harsh crack-down by government forces as was witnessed on the 13\textsuperscript{th} of May 2005. Under a decree issued by President Karimov, the Uzbek Army massacred "at least 500"\textsuperscript{137} peaceful protestors

\textsuperscript{133} Ibid. p. 23
\textsuperscript{135} Ibid.
\textsuperscript{136} Sievers (2001-02). p. 356
including ordinary women and children on the streets of Andijan. The mass slaughter is relevant to the regional water issue for it outlines how the autocratic government of Uzbekistan is able and willing to suppress popular movements with military force. The employment of armed forces to deal with issues of concern links the reality to countless high levels of corruption and social oppression. Although the purpose of this paper is not to express a litany of predictions and assumptions, it is nonetheless pivotal to explore conflict scenarios and their relevance to the stability of the region in future decades, as environmental resources become even more scarcely available. Shortage of, and/or an inconsiderate distribution of water in the region, may prompt the execution coercive force by regional aggressors, such as Uzbekistan.

Finally, Sievers describes the region as being “rich in hydrocarbons” which can provide a future alternative to Middle East oil resources. Again, this opens the door to internal turmoil within the region. The extraction of hydrocarbons will further strain the environment while paradoxically providing greater financial incentives to exploit the environment. An excessive amount of water is required to process hydrocarbons, natural gas and crude oil. Additional withdrawal of the ‘blue gold’ will have devastating ramifications on the state of the regional eco-systems and most importantly upon the standards of living of the region’s residents. As the state continues to fail its electorate, its support will crumble (if there was any to begin with). The plight of the marginalised has been continually demonstrated in recent times. Desperation of the disregarded may stir up further internal incohesiveness. The politics of anger may present itself as attempts to secure social change through rioting and revolts.

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138 Sievers (2001-02), p. 356
AFGHANISTAN – FURTHERING WITHDRAWAL OF WATER FROM THE AMU DARYA IN THE QUEST OF STATE BUILDING

Another major threat to the already volatile state of relations between Central Asia’s states, is the potential of Afghanistan (a state within the Aral Sea basin) to increase the rate of water withdrawal from the Amu Darya upstream. A significant number of tributary rivers are formed in the mountainous regions around the Tajik-Afghan border which “contribute[e] to the average annual flow of the Amu Darya is about 15%”. The Amu Darya essentially is the border-making river for much of the Afghan-Tajik border. On recognition of potential disputes, Moscow had signed a transboundary water agreement with Kabul in 1946. The agreement entitled Afghanistan to utilise 9km³ of the Pyanj River, the Amu Darya’s main tributary, yet to date only 2km³ is re-diverted.

According to scientific estimations however, if Afghanistan was to adapt its annual quota in its entirety, this process would “radically change the water flow along the Pyanj and would have a significant impact on the downstream flow regime of the Amu Darya”.

The Afghan integration into the Economic Co-operation Organization (ECO) (whose members include Iran, Turkey, and the former Soviet Central Asian states) and the entitlement to join the India-led South Asia Free Trade Agreement (SAFTA) as of February 2008, will drive the Afghan national economic forces to make use of all its domestic resources with the endeavour to propel its economic development. Unfortunately, the regional ecology will in effect carry the burden of...
further irrigational or hydroelectric development. Pressures and strains downstream may infuriate regional players. Afghanistan’s legitimate plight to increasing water withdrawal are challenged by the overriding “complicated and conflict-ridden water relations of the region”\(^{143}\).

Hence, “secure democratic regimes and regional stability in Central Asia may not be viable possibilities until and unless the states take steps to resolve systematic water problems and, by extension, other pressing environmental issues.”\(^{144}\) Water serves as a “strategic commodity”\(^{145}\) worldwide and Central Asia is by no means an exception. The above case studies have illustrated that institutions and to a greater extent international agreements do shape the state of cooperative relationships between the sovereign governments in the region. However, the potential for conflict countermands the pillars of agreements made between ‘the Stans’. ‘New Security Threats’ open a wider window for escalating violence as “water-related terrorism involves physical attacks on water infrastructure – specifically water-supply dams and pipelines”\(^{146}\). Rivalry between ethnicities and people who are economically marginalised will invoke conflict rather than cooperation.

**CONCLUSIONS**

According to the World Bank’s former President, Ismail Serageldin, water will become the single most important factor within “environmentally induced”\(^{147}\) violent conflict. In context, the ‘water wars’ hypothesis sets out a framework for identifying that where there is a scarcity of shared water

\(^{143}\) Ibid.

\(^{144}\) Sievers (2001-02). p. 358

\(^{145}\) Bajpaee, C. (2006, 13/10/08). "’Asia’s Coming Water Wars’.”


\(^{147}\) Conca, K., F. Wu, et al. (2006). p. 93
resources, countries would be likely to wage war on neighbouring states\textsuperscript{148}. History also shows that the water supply is often the strategic target in war. During these periods, “access to shared water supplies ha[ve] been cut off for political and military reasons”\textsuperscript{149}. Water reservoirs have been poisoned and as a result ordinary people have paid a price for governmental decisions. In turn, the public and “policymakers should be more aware of potential conflicts arising over, or exacerbated by, water issues”\textsuperscript{150}. Although there are numerous factors which may contribute to the eruption of conflict in today’s fragile international environment, there are also more interdependencies prevalent in the contemporary era than ever before. Inequitable access to resources and high unemployment rates in an ethnically diverse Central Asia may contribute to an emergence of ethnic animosities and extremist ideologies.

As the race toward securing resources rages on, states may employ agendas that do not convey the interests stated in international treaties. Recent history has suggested that securing foreign natural resources may be undertaken in the name of democracy or greater international security for example. False reasoning for ground troop invasions may persist. Proxy means of warfare may be employed by militarily strong government’s wishing to ensure their stronghold over contested natural resources, such as regional water supplies (which are essential to the survival of agricultural and some heavy-energy industries) perpetuates. Considering that the Aral Sea was once the world’s fourth largest inland body of water that is now greatly depleted in size due to human mismanagement, one would think that this example would be broadly documented on as a


\textsuperscript{150} Gleick (1993) p. 80
precedent for prevention. The institutions that operate in the region are far too soft and entrenched in bureaucratic demarcations making them ineffective.

Water security underlies all other geo-political concerns. The potential for conflict is escalating as the demand for water continues to rise. Small scale measures are being implemented by regional states such as Kazakhstan, yet a clause within each of ‘the Stans’ constitutions refers to “sovereignty over resources”\(^\text{151}\) and therefore a ‘zero-sum game’\(^\text{152}\). Corruption prevails. Water is tied in with oil, gas and the trade of other natural resources. Therefore, water is foreseen as a tool of economic longevity and therefore is readily sacrificed for the perceived prospering of economic performance. The Uzbek government is an exemplar of a Realist actor in the Central Asian region that is willingly exercising its sovereign rights in the Aral Sea, by seeking to tender out exploration of potential gas and/or oil reserves within its territory of the Sea. Similarly, as Afghanistan pursues to extract upstream water from the Amu Darya, reductions in annual flows and greater change to the regional ecosystem are likely to follow, aggravating water users and governments downstream.

Although conventional wars over water may remain “remote”\(^\text{153}\), scenarios that will lead to conflict, such as riots the use of private armies, by means of ‘coercive diplomacy’ and/or the employment of economic sanctions, are on the increase. Disputes over water in Central Asia can and will “add fuel to the fire of long-standing historical [and political] animosities”\(^\text{154}\); remembering that today, the Aral Sea region is already an “environmental disaster and a humanitarian catastrophe zone”\(^\text{155}\).

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\(^{152}\) ICG (2002). p. ii  
\(^{154}\) Baipeaee, C. (2006, 13/10/08). “‘Asia’s Coming Water Wars’.”  
APPENDICES

Appendix 1a. The Great Silk Road map


Appendix 2a. Radioactive, chemical and biological hazards in Central Asia


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### Appendix 2b. Table 1: WATER EVENT INTENSITY SCALE 1948-2005

<table>
<thead>
<tr>
<th>DESCRIPTION OF CONFLICTIVE EVENTS</th>
<th>SCORE</th>
<th>DESCRIPTION OF COOPERATIVE EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORMAL DECLARATION OF WAR</td>
<td>-7</td>
<td>VOLUNTARY UNIFICATION INTO ONE NATION - Merging voluntarily into one nation (state); forming one nation with one legally binding government.</td>
</tr>
<tr>
<td>EXTENSIVE MILITARY ACTS CAUSING DEATHS, DISLOCATION OR HIGH STRATEGIC COST</td>
<td>-6</td>
<td>INTERNATIONAL FRESHWATER TREATY; MAJOR STRATEGIC ALLIANCE (REGIONAL OR INTERNATIONAL) - Fighting a war jointly; establishing a joint military command or alliance; conducting joint military manoeuvres; establishing economic common market; joining or organizing international alliances; establishing joint program to raise the global quality of life.</td>
</tr>
<tr>
<td>SMALL SCALE MILITARY ACTS - Limited air, sea, or border skirmishes; border police acts; annexing territory already occupied; seizing material of target country; imposing blockades; assassinating leaders of target country; material support of subversive activities against target country.</td>
<td>-5</td>
<td>MILITARY ECONOMIC OR STRATEGIC SUPPORT - Selling nuclear power plants or materials; providing air, naval, or land facilities for bases; giving technical or advisory military assistance; granting military aid; sharing highly advanced technology; intervening with military support at request of government; concluding military agreements; training military personnel; joint programs and plans to initiate and pursue disarmament.</td>
</tr>
<tr>
<td>POLITICAL-MILITARY HOSTILE ACTIONS - Inciting riots or rebellions (training or financial aid for rebellions); encouraging guerrilla activities against target country; limited and sporadic terrorist actions; kidnapping or torturing foreign citizens or prisoners of war; giving sanctuary to terrorists; breaking diplomatic relations; attacking diplomats or embassies; expelling military advisors; executing alleged spies; nationalizing companies without compensation.</td>
<td>-4</td>
<td>NON-MILITARY ECONOMIC, TECHNOLOGICAL OR INDUSTRIAL AGREEMENT - Making economic loans, grants; agreeing to economic pacts; giving industrial, cultural, or educational assistance; conducting trade agreements or granting most favoured nation status; establishing common transportation or communication networks; selling industrial-technological surplus supplies; providing technical expertise; ceasing economic restrictions; repaying debts; selling non-military goods; giving disaster relief. Legal, cooperative actions between nations that are not treaties; cooperative projects for watershed management, irrigation, poverty-alleviation.</td>
</tr>
<tr>
<td>DIPLOMATIC-ECONOMIC HOSTILE ACTIONS - Increasing troop mobilization; boycotts; imposing economic sanctions; hindering movement on land, waterways, or in the air; embargoes; refusing mutual trade rights; closing borders and blocking free communication; manipulating trade or currency to cause economic problems; halting aid; granting sanctuary to opposition leaders; mobilizing hostile demonstrations against target country; refusing to support foreign military allies; recalling ambassador for emergency consultations regarding target country; refusing visas to other nationals or restricting movement in country; expelling or arresting nationals or press; spying on foreign government officials; terminating major agreements. Unilateral construction of water projects against another country’s protests; reducing flow of water to another country; abrogation of a water agreement.</td>
<td>-3</td>
<td>CULTURAL OR SCIENTIFIC AGREEMENT OR SUPPORT (NON-STRATEGIC) - Starting diplomatic relations; establishing technological or scientific communication; proposing or offering economic or military aid; recognizing government; visit by head of state; opening borders; conducting or enacting friendship agreements; conducting cultural or academic agreements or exchanges. Agreements to set up cooperative working groups</td>
</tr>
<tr>
<td>STRONG VERBAL EXPRESSIONS DISPLAYING HOSTILITY IN INTERACTION - Warning retaliation for acts; making threatening demands and accusations; condemning strongly specific actions or policies; denouncing leaders, system, or ideology; postponing heads of state visits; refusing participation in meetings or summits; levelling strong propaganda attacks; denying support; blocking or vetting policy or proposals in the UN or other international bodies. Official interactions only.</td>
<td>-2</td>
<td>OFFICIAL VERBAL SUPPORT OF GOALS, VALUES OR REGIME - Official support of policy; raising legation to embassy; reaffirming friendship; asking for help against third party; apologizing for unfavourable actions or statements; allowing entry of press correspondents; thanking or asking for aid; resuming broken diplomatic or other relations.</td>
</tr>
<tr>
<td>MILD VERBAL EXPRESSIONS DISPLAYING DISCORD IN INTERACTION - Low key objection to policies or behaviour; communicating dissatisfaction through third party; failing to reach an agreement; refusing protest note; denying accusations; objecting to explanation of goals, position, etc.; requesting change in policy. Both unofficial and official, including diplomatic notes of protest.</td>
<td>-1</td>
<td>MINOR OFFICIAL EXCHANGES, TALKS OR POLICY EXPRESSIONS – mild verbal support - Meeting of high officials; conferring on problems of mutual interest; visit by lower officials for talks; issuing joint communiqués; appointing ambassadors; announcing cease-fires; non-governmental exchanges; proposing talks; public or non-governmental support of regime; exchanging prisoners of war; requesting support for policy; stating or explaining policy.</td>
</tr>
<tr>
<td>NEUTRAL OR NON-SIGNIFICANT ACTS FOR THE INTERNATIONAL SITUATION - Rhetorical policy statements; non-consequential news items; non-governmental visitors; indifference statements; compensating for nationalized enterprises or private property; no comment statements.</td>
<td>0</td>
<td>NEUTRAL OR NON-SIGNIFICANT ACTS FOR THE INTERNATIONAL SITUATION – Rhetorical policy statements; non-consequential news items; non-governmental visitors; indifference statements; compensating for nationalized enterprises or private property; no comment statements.</td>
</tr>
</tbody>
</table>

Source: ‘The Water Event Intensity Scale’ has been modified from Azar's COPDAB (Conflict and Peace Data Bank) International Conflict and Cooperation Scale. [http://www.transboundarywaters.orst.edu/projects/events/bar_scale.html](http://www.transboundarywaters.orst.edu/projects/events/bar_scale.html)

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## Appendix 2c. Table 2: Water-related conflicts in the Aral Sea basin (Klotzli, 1994: 43)

<table>
<thead>
<tr>
<th>Hydrological system</th>
<th>Control of sources</th>
<th>Main user(s)</th>
<th>Type of dispute</th>
<th>Related ethno-territorial or sub-national conflicts</th>
<th>Severity of conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naryn and Toktogul resv.</td>
<td>Kyrgyzstan</td>
<td>Kyrgyzstan Uzbekistan</td>
<td>Up-down stream</td>
<td>Ethnic tensions between Uzbek and Kyrgyz population in the Fergana Valley</td>
<td>High</td>
</tr>
<tr>
<td>Kayrakum resv.</td>
<td>Tajikistan</td>
<td>Uzbekistan Tajikistan</td>
<td>Up-down Stream</td>
<td>Transfer of the Tajik section of the Fergana Valley to Uzbekistan</td>
<td>Medium</td>
</tr>
<tr>
<td>Tributaries to Fergana Valley</td>
<td>Kyrgyzstan</td>
<td>Uzbekistan Tajikistan</td>
<td>Shared irrigation system</td>
<td>Ethnic tensions between Uzbek and Tajik population</td>
<td>High</td>
</tr>
<tr>
<td>Chardara resv.</td>
<td>Kazakhstan</td>
<td>Kazakhstan Uzbek minority</td>
<td>Up-down stream; shared irrigation system</td>
<td>Transfer of lands between the Syr Darya and the Arys rivers (province of Chimket) from Kazakhstan to Uzbekistan</td>
<td>Low</td>
</tr>
<tr>
<td>Vakhsh/Pyandsh</td>
<td>Tajikistan</td>
<td>Tajikistan</td>
<td>Up-down stream (potential)</td>
<td>Factional divides long the course of the Amu Darya between Gorno Badakhstan and the region of Kurgan Tyube</td>
<td>High</td>
</tr>
<tr>
<td>Zeravshan</td>
<td>Tajikistan</td>
<td>Uzbekistan</td>
<td>Shared irrigation system; up-down stream</td>
<td>Ethnic tensions between Uzbek and Tajik population; transfer of the upper reaches of the Zeravshan to Uzbekistan</td>
<td>Medium</td>
</tr>
<tr>
<td>Lower Amu Darya</td>
<td>Turkmenistan Uzbekistan</td>
<td>Turkmenistan Uzbekistan</td>
<td>Shared irrigation system; up-down stream</td>
<td>Territorial claims concerning parts of the Tazhaus Oasis, the Khorezm province, and Cardzhou at the middle Amu Darya</td>
<td>Medium</td>
</tr>
<tr>
<td>Kara Kum canal</td>
<td>Turkmenistan</td>
<td>Turkmenistan</td>
<td>Transbasin</td>
<td>Inter-republican significance, repercussions fro downstream users</td>
<td>Medium</td>
</tr>
<tr>
<td>Aral Sea</td>
<td>Kazakhstan Uzbekistan</td>
<td>Karakalpakia, Turkmenistan, Kazakhstan, international</td>
<td>Regional, common/sacrifice area</td>
<td>Low potential for a secession of Karakalpakia from Uzbekistan; over-regional conflict</td>
<td>Low</td>
</tr>
</tbody>
</table>

Source: Allouche, J. (2006) CIMERA

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Appendix 3a. The Shrinking of the Aral Sea: Socio-Economic Impacts

The Shrinking of the Aral Sea: Socio-Economic Impacts


Appendix 3b. 'Distribution of Population Groups in Central Asia'


160 Masters of International Relations
Faculty of Arts, School of Political and Social Inquiry
Appendix 3c. Caspian Sea Region

Source: Cornell University (2008)\textsuperscript{161}


Appendix 4a. ‘Selected Energy Projects of the Caspian Sea Region’

Selected Energy Projects of the Caspian Sea Region

Source: EIA (2007). Department of Energy, Washington D.C.\textsuperscript{162}

Appendix 4b. The fragmented Aral Sea

Source: AVISO (2007)

BIBLIOGRAPHY


