

Thesis of the Ph.D dissertation
Ph.D School of Earth Studies

THE CENTRAL ASIAN INTEGRATION AND THE REGION'S WATER
MANAGEMENT PROBLEM

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University of Pécs
Pécs, 2007

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I. INTRODUCTION

After the dissolution of the Soviet Union new systems of security policy and new blocks came about in different regions of the world that inherited very severe conflicts in many cases with blood letting, with chaotic orientations as for foreign policy. Parallel with the various disintegration processes swift integration processes appeared beside the already existing integrations. These got interwoven with the expectations of global challenges that are modernisation and the need for taking part in world economy. Now it is fairly obvious that participate in the main international processes is impossible without regional stabilization and co-operation. Just as well it became obvious that the states left without any frame due to the disappearance of the bipolar world cannot ensure their economic development, competitiveness and security by separating themselves from world economy. The global world-powers such as the USA, China and Russia or the European Union realized that situation very quickly and launched more or less successful integration processes. However some regions of the new national states for example the Caucasian ones, partly the new states of former Yugoslavia and the newly formed Central-Asian states was left absolutely on their own with their regional, ethnical, religious and interstate tensions being cut off from the main integration processes. According to Barry Buzan, a well known expert on security policy the chief victim in the cold war is the Middle-Asian region. From a political point of view Central-Asia as a definition of place is an amorphous notion, which has been re-named and its reference revised during the changes of the historical and political contexts. Due to the Russian conquest this region got the name *Srednaya Azia* that is Middle-Asia of which the most appropriate Hungarian translation would be In-Between-Asia but this term is not in use in the Hungarian political-geography. After the dissolution of the Soviet Union with the appearance of the ex-Soviet Central-Asian national states: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan a new name came about to define the whole region. That name was the Russian *Centralnaja-Azia* and the English Central-Asia (Middle-Asia) which was used by the political and intellectual elite of these states to symbolize independence and the end of the colonial situation. Therefore because my thesis is written in Russian in the currently discussed subjects I am using the *Srednaya* and the *Centralnaja-Azia* terminology according to the aforementioned chronology referring to the states east of the Caspian Sea.

In his books *Breaking Nations* Robert Cooper states that there are several dangers to our world today and there will be even more in the near future. However the present conflicts may cause incredibly huge damages. Consequently the basic interest of today's world is to solve the conflicts as soon as possible, to create these regions' security and integration and to bring about some kind of global partnership.

Several institutionalized regional initiatives were launched for the integration of the Central-Asian states but their results were far less effective although there are excellent conditions for co-operation in the region. These are the close geographical arrangement, historic past in common, the 'brother'-nations being overwhelmingly Turk and bearing that language too (except for Tajik which is of Persian origin). The interwoven infrastructure of Soviet heritage would provide a strong base for the regional co-operation but these advantages have hardly been made use of so far.

It is important to note here that nearly at the same time with the independence of these states global and regional world-powers appeared out of strategic interests. Today probably Russia as a mother-country can play an important role because of her interests in representation of the Russian population, sustaining the asymmetric economic superiority and the yield, transport and trade of the energy sources. This has become the biggest weapon of the Kremlin's foreign policy even in asserting its interests in the other regions of the world. Russia is also watching out very closely that the temporary power gap in the region should not be filled with any other global or regional power. The other regional power is the neighbouring China. Its interests are once again various here: tries to satisfy its rapidly increasing need for energy and energy sources, important trading partner, and tries to neutralize the Xinjiang Autonomous Region's effort for independence by the partnership of the Central Asian states. Right after the dissolution of the Soviet Union the USA came into the picture here whose interests lay in the energy sector, just as well its strategic role is important. The United States tries to weaken the Russian and Chinese influence for its main purpose is to cut down the opportunities of joining of the big, potentially rival economies. In addition to this we could mention the foreign political operations of Turkey, Iran or the EU; however we can state that they play a sort of world-power role side by side rather than giving impulses to the regional co-operation, what is more according to some these powers actually block the first steps of integration.

In Central-Asia to create regional security, which is clearly the base of integration, has several obstacles. In local level the ethnical, religious and social oppositions work as strong

destabilizing forces, there is separatism and extremism based on religious and historical roots – especially in the Fergana Valley –, there are rivals and conflicts among the heads of the strongly presidential and dictatorial states to attain leadership, drug, gun and human trafficking and Afghanistan being so close. The similar situation of the national states that is lacking in raw material production and processing industry worsens the chances for co-operation. Besides all these the biggest conflict potential between the Middle-Asian states is the problem of sweet water distribution. This in a desert and semi-desert environment cannot be neglected and left unresolved by the states being aware of its ecological, economical and social importance.

With the end of the cold war the non-traditional problems of security policy mean the biggest challenge and danger to the peaceful symbiosis among these states more or less overshadowing the oppositions in military security policy. These states often define their security policy tasks in the reflection of their political, economic, social and ecological endangerment.

More and more political conflicts are caused by the devastation of the environment, the lack of raw materials and energy sources. Similar problems also occur more frequently in the field of water-management of international rivers. There have been several examples to that in history such as Babylon, but the big political oppositions in modern history are also filled with the strategic role and conflict source of sweet water. We can see that in the conflicts between Israel-Palestine, Turkey-Syria, Syria-Israel, in Kashmir and in Central-Asia and the conflicts among the states along the Nile. Sweet water is a basic need, it unites the ecological, economical and social activities including food production, energy-management, transport, waste-management, industrial functions and health care issues. In certain regions the political and social instability has a lot to do with the irrational water management on international rivers which lead to the high rate degradation of the environment. Its consequence can be a possible international conflict. Among the experts on strategy it is a common pursuit to prove that the main cause of the conflicts in connection with nature and nature-management is the fight for the ownership of the gradually decreasing natural sources. In this many global phenomenon have important roles such as the global need for economic growth, the increasing number of inhabitants in the world, the climate change which results in global warming and partly desertification. Water as a natural source and the basic need for any life has pressure on by the growing population especially because this phenomenon is difficult to control both politically and culturally. The clear consequence of the growing

population is the danger of food security and the increasing need for economic development. The economic growth of a nation can alter the number of inhabitants in a special and controversial way but it always means growing demand for water. Economic growth is made even more difficult by the fact that from the point of view of water use agriculture is playing an important role in the process. This economic sector is the biggest user of the stock of water in the world. Here again a political factor is present for the state tries to provide a minimum food security and social security which obviously involves growing demand for water. This fact often risks the co-operations on international rivers.

With the collapse of the Soviet Union the already entirely irrational water-management - controlled by Moscow - on the rivers of Amu Darja and Sir Darja come to an end and the institutionalization of water management of these two international rivers was left to the newly independent states. This, even if it was carried out theoretically, for example according to World Bank experts the theoretical system seemed all right, in reality it caused several conflicts and the problem of water sharing will probably mean more and more difficulties in the peaceful symbiosis among the Central-Asian states.

As it is known, most of Central-Asia lies in a semi-desert and desert zone where cultivation of plants cannot be possible without artificial water supply that is irrigation. Quite a huge proportion of the population (chart 1) is employed in agriculture and this number is growing with the growing of population and the migration from the towns due to the closing down of the Soviet-type factories. There is a strong pressure on water use by the fact that quite a big part of these states' GDP is realised by agriculture, mainly by growing cotton which are produced on more and more land year by year to satisfy the greater demands. Actually, the effect of this increasing water use can be seen in this region that is the world biggest natural disaster caused by humans: the nearly entire dry-up of the Aral Sea.

There is another important economic significance of water use: the electricity production of which potentials among the countries along the coastline are not equally shared. In fact these two sectors, the agricultural need and the electricity production mean possible political conflicts. Rivers are supplied mainly from the glaciers thaw which comes about in summer. The source-countries of Amu Darja and Sir Darja are Kyrgyzstan and Tajikistan where there is not much energy source, so for their winter energy demand during the summer they collect the water in huge reservoirs which causes water shortage in rice and cotton fields in Uzbekistan, Kazakhstan and Turkmenistan. The aspects of security policy of this have been mentioned above.

The challenges of this region's security policy in connection with water sharing can deteriorate even more in the future. It can be foreseen that the concentration and rapid growth of population will flourish mainly in the fertile areas with lots of water (primarily the Fergana Valley) and the environment's quick degradation and the increasing requirements on agriculture and electricity sector will result in the rise of sweet water use. The potential conflicts among various spheres of interest are burdened with the fact that the majority of the poor (chart 1) make a living from agriculture and if agricultural activities begin to fail that will lead to a more severe impoverishment of the population. This has an already proved effect that is the radicalization and the existing social, ethnical and religious oppositions are expected to be intensified. So we can state that the irrational water sharing and water use in the region can result in a severe social, economical and ecological degradation which potentially means a local and/or interstate conflict.

1. Table. Some important economic social statistical data of the states of Central Asia

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Population (mill.)	14.862 [6]	4.92	6.09	4.74	24.88
Population in towns (%)	56	34	28	45	37
Population on the country side (%) [1]	44	66	72	55	63
Poverty data- 1996-1999 [1] 4,3 US doll/day	31	84	96	34	No data
Pop. Ratio on the country side	57	90	78	81	No data
Expected pop. by 2025 [2]	17,1	5.9	8.3	7.3	33.8
GDP growth (%)	9.4	6.2	10.6	8.0	7.0
GDP from the agriculture (%)	7	46	24.3	26	24
GDP from the industry (%) [3]	37	27	24	32	16
Employed in agriculture sector (%)	16,5[6]	31[4]	65[1]	34[5]	34[3]
Ration of the irrigated plantation in the agricultural GDP (%) [1]	81	90	85	91	91

Resources:

1. Water resources in the Europe and the Central Asia region. Volume II. Issues and strategic directions 2003 IBRD/ WB Washington USA
2. UNESCO Water related Aral Sea basin vision. For the year 2025. Draft of 31 October 1999 By the UNESCO Division of water Sciences with the cooperation of the scientific advisory board for the Aral Sea basin. Vision draft: 31. Oct. 1999.
3. EIU Country Report of Economic Intelligence Unit Kazakhstan, Kyrgyzstan Tajikistan, Turkmenistan, Uzbekistan. 2005.
4. www.fao.org/countries
5. www.icg.org ICG The course of cotton: Central Asia Destructive monoculture Asia report № 93. с. 11. 2005 28 Febr.
6. Сельское лесное и рыбное хозяйство в 2003 году. Статистический сборник. Агенство Республики Казастана по статистике. Алматы 2004.

II. PURPOSES OF THE DISSERTATION

The Object of my research is the relation of integrational and desintegrational processes among the Central Asian states on water sharing issues in the region and its political, economic, ecological, social security consequences. The aim of the research is to show up the conflict potential of the water sharing of the region which is interwoven organically with other security issues like migration, poverty, border disputes, and causes other socio-cultural stresses. Further on I am going to prove that all these processes how influence the integrational and desintegrational developments among the Central Asian states. For the realization of the aim of the dissertation I prepared the following topics:

1. Introduction of the historical evolution of the present situation of the water management, focusing on the reasons of the conflict potentials of the unsustainable water management. The following chronology was used in this issue:

- Shariat; the period characterized by the ancient water management in the region distinguished by the Islamic law until the Russian occupation.
- Territorial and administrative border draws within the Soviet Union. Ethnical and social aspects and its influences and consequences on the water management.
- The characterization of the water management from the 30-ies until the collapse of the USSR focused on the mismanagement political, social, ecological aspects.

2. The introduction of the researching methodological base of the dissertation. I used up the next theories in the following logical units in the discussion of the issue:

- The introduction of the modern Neorealist security policies by the Copenhagen school. Structures and functions of the security policy.
- Structures and functions in the water management on international rivers.
- To prove the water management on international river basin and its potential conflicts how related to the security policy of a country. Author intends to prove that the countries of Central Asia belong to one security complex even party Afghanistan as well, because of the river basin network.

3. The perspectives of the Central Asian integration

- The introduction of the water juridical normative within the countries, the international water management institutions, bi- and multilateral agreements.
- To introduce what kind of contradictions are there among the countries' interests of Central Asia in the international water management on the river of Amu-Darya and Syr-Darya.
- Introduction how representing the hostile and mistrustful of each other relations among the states how reflected in water management in Central Asia, and are the political, social, economic and ecological consequences of it on regional and local levels.
- Introduction how the international organizations like UN and other donors take part in the water management of Central Asia.
- To prove that an effective and sustainable water management in the region is unavoidable and the harmonization of the ecological, political, and economic and social security is a possible base of integration in the Central Asian security complex.

III. RESEARCHING METHODS

During the discussion of the researching methods I would like to show up what kind of resources I used up in the fulfilment of my work as in the theoretical and also in the regional part of the dissertation. Then, I would like to mention except of the academic resources, how, and what kind of information I could get during my 4 year local researching in Central Asia.

The processed resources are the next: the most important group is the international agreements and contracts related materials, because these documents introduce the juridical normative and the most of the time the deviation from these laws cause the security issues among the countries. Without the demand of the completeness these are like the agreement and protocols signed by the USSR and Afghanistan and the agreements of the Central Asian newly independent states on the water management issues etc.

I find very important to be acquainted with the materials of the library of Intergovernmental Water Management Coordination Institution, governmental archives, conference materials of the international organizations like UN (Rio de Janeiro, Kyoto, Johannesburg, etc.). The knowledge of the constitutions, water laws of the Central Asian states were indispensable during my work because often the origin of the conflicts are from the domestically consumption of the water. Watching the Central Asian media let me follow the Central Asian countries' interior and foreign policy, and let me know the up-to-date political life during my staying there.

Unfortunately there are so many obstacles to know the region's ecological conditions, and my experience is that the glasnost' from the ecological point of view has not fulfilled yet.

To get rid of this problem helped me the environmental reports of international organizations and banks. Especially active in this issue the Asian Development Bank, the World Bank, EBRD, UNEP, UNDP, USAID, GRID, OSCE. I had similar problems in collection statistical data. Fortunately I could use the material of the Central European University, there I could find one of the most reliable reports from The Economist Intelligence Unit in 2006, this is why hardly I had to use the local statistics there was one exception among the Central Asian statistical offices this is the Kazakh Governmental Statistical Office. I got further useful information from the office of FAO and World Bank. My widest scale of information resource is probable the materials of the local and international newspaper and journals. Luckily, I could attend the local strategic institutions in Bishkek and Almaty so during my staying in Central Asia I could use the issues of them. I could usually read the Kazakh and Russian daily newspapers such as Kazahsztanskaya

Pravda, Panorama etc. Beside these I could get in the Hungarian libraries the world wide well-known political journals like Foreign Affairs, Journal of Peace Research, and Post-Soviet Geography etc. I could read meaningful printed material related to Central Asian political and security issues in Stockholm in the Strategic Institution of Sweden (SIPRI) also.

The world-famous security political centres and universities' issues helped me a lot in the working up procedures of the topic. The Copenhagen security policy school especially Barry Buzan's, Ole Wever's works were milestone and determinative during my work. The materials of the University of Ottawa, the Strategic Institution of Zurich and Oslo personally the works of Thomas Homer-Dixon were very influential in my theoretical approaches of the environmental conflicts. Works related to the regional issues have to be distinguished by local and foreigner authors, because my experience is that the different socialized authors can touch the problem differently and from other political point of view. I would mention from the foreign researchers Peter Gleason, Philip Micklin, Roy Oliver, Erika Weinthal, Sara O'Hara, Shirin Akiner, Stuart Horseman and Deane K. McKinney's name. Among the local researchers I would mention Igor Zonn, Aleksey Malashenko, L. Lipovski, V. A. Duhovni, and Murat Laumullin whose works were very valuable for me. The local experience helped me a lot in deeper understanding the in Central Asian conflict resolution methods, further on I got a lot of useful information during the conversations with the experts working in the region.

IV. SUMMARY OF THE RESULTS

1. The tragedy of the present water management in Central-Asia is no doubt rooted in the former irrational environmental management. Due to the Russian colonization the water use working according to Shariat being in harmony with the environment came to an end because the Russian foreign trade was heavily depending on American cotton. The situation became worst in the last years of the civil war causing a fall in the amount of cotton in the world market and a rise in its price. Actually this situation gave the Tsar the idea of creating a Central-Asian cotton-belt which was the foundation of the present crisis. After the establishing the Soviet Union the Central-Asian rivers played important roles in drawing the borders of the member states. As for the location of the ethnic groups the region is like a mosaic so this border-drawing method could not be (and still cannot be) entirely consequent. However, there was another important principle that should have dominated when dividing the area that is the creation of logical economic units. In such a desert and semi-desert zone where the cotton production based on irrigation is of utmost importance the location of the rivers had great influence on the borders of the member states.

After the world wars as a result of the huge plans of geographic alterations from the Stalin and Khrushchev era and the pressure of the great expectations of the planned economy the economic situation was degrading fast especially the quality of agricultural lands. Besides, extending the cotton fields – that is the irrigated lands – less and less water reached the Aral Sea which has resulted in the disappearance of the lake. The idea of diverting the Siberian Rivers came about in this period to ease the Central-Asian water-shortage.

After the dissolution of the Soviet Union and the centralised water-management, the development of the newly independent states with different interests the crisis of secure policy now demands a co-operative solution.

This paper's theoretical aspect is focusing on the fact that an intensive collective water-management on a given international river is an important interstate question of secure policy. This is so especially in the case of a desert, semi-desert zone where the social, ecological and economical role of the river is of vital importance. For the real political situation of this region I took the theories of the Copenhagen school – one of the most modern schools on security policy. I would like to put emphasis on security policy complex as a base term for this phrase can have several interpretations; on the other hand I want to look at how

this definition can be understood in the case of a catchment area. Security policy in a classic sense defines a complex according to the military relations of allies and foes. This definition cannot be formulated since such a complex can exist even today; this is called one sided complex. When there are different questions and contra-interests we talk about a multi-sided security policy complex. Consequently it is quite clear that a certain catchment area is a security policy complex where various interests are connected to the use of the river from ecological, economical, political and social points of view as well. Obviously then Central Asia is a security policy complex where there are contra-interests as for the river, and the solution needs interaction and co-operation. Afghanistan is also included in this system for 8% of the water resource area of the river Amu Darja is in North-Afghanistan and there are more and more irrigated lands depending on this area in this stabilizing country and that can cause water problems in the countries further down. To avoid conflicts and to achieve the aims in common the Central-Asian countries – including Afghanistan - have to co-operate with the classical integration mechanisms that is mutual confidence building, openness and information exchange. Just as well they have to work with the collective economic co-operation that can give further impulses to broaden the integration and to stabilize the region.

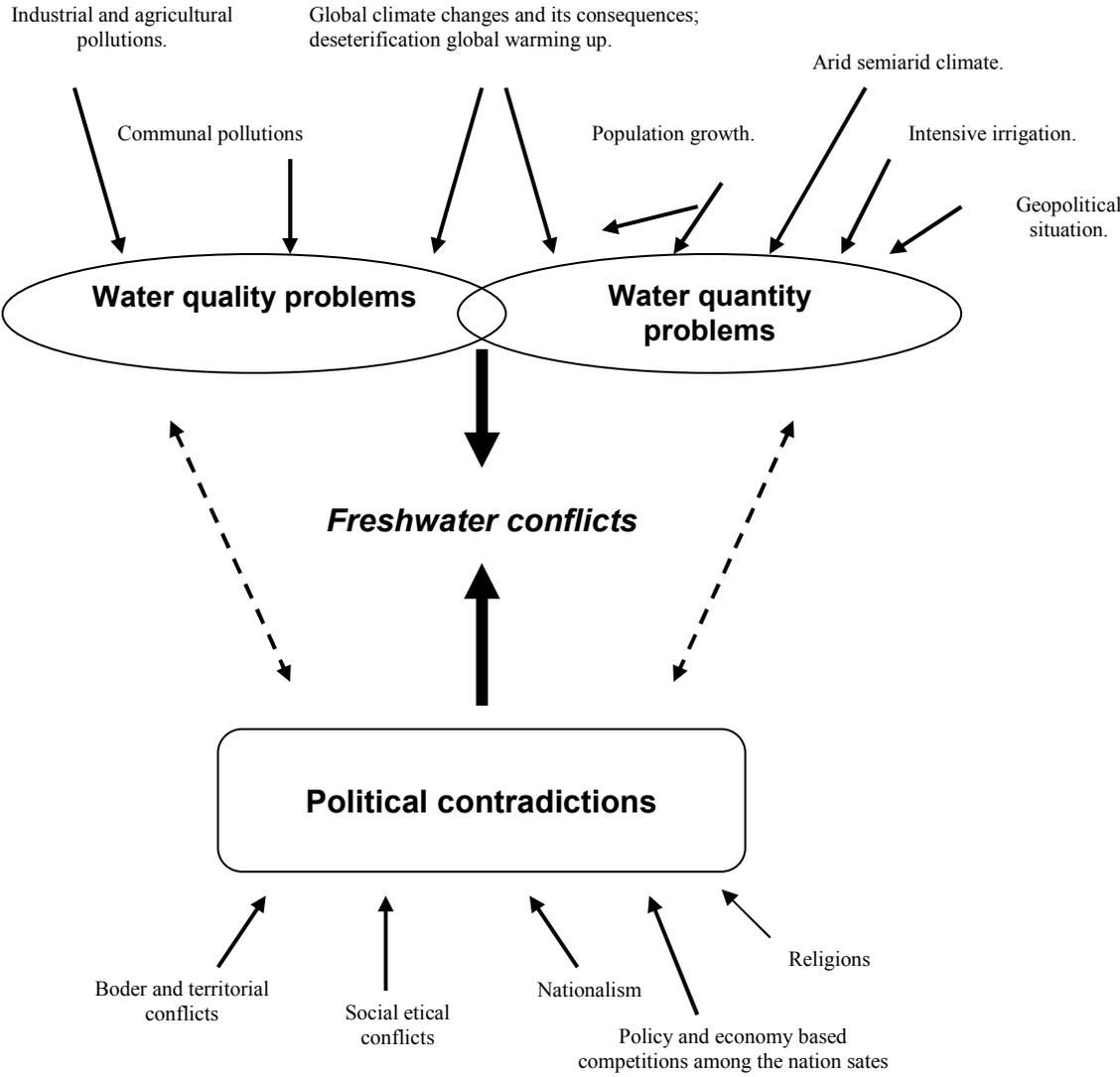
Having examined the mechanism of an effective water-management system we can separate political, technical, legal and institutional functions. In political function we differentiate ecological, economical and social processes which are important in this paper for the legal and institutional ones cannot show up due to the real political situation. The technical processes are rather just pillars for the two main processes and their analysis is not the aim of my study.

2. For the theoretical base I needed to make it clear what are the most frequent reasons for conflicts within the role of security policy and water-management, that is, in the economical, social and ecological functions.

Conflict as a social phenomenon can only be defined by social scientific premises and cannot be explained as a natural phenomenon (Libiszewski S.). This requires a deeper and more complex analysis which pays attention to the human nature with cultural features. This suggests that the natural effects cannot cause conflicts directly but they have a constant and increasing influence on the society. The reaction of the society to the natural effects can cause environmental conflicts. Beside the definition we have to mention the scarcity or the lack of natural sources. We talk about lack of natural sources when a given source is available only in

very limited amounts. The other conflict source is the problem of quality. Samson and Charrier organize the causes of water-conflicts in the following chart:

2. Table



Source: Samson P. and Charrier, B.: International Freshwater Conflict: Issues and Prevention Strategies. Green Cross International. Water and Conflict prevention.

<http://www.gci.ch/greenCrossPrograms/waterres/gcwater/study.html>

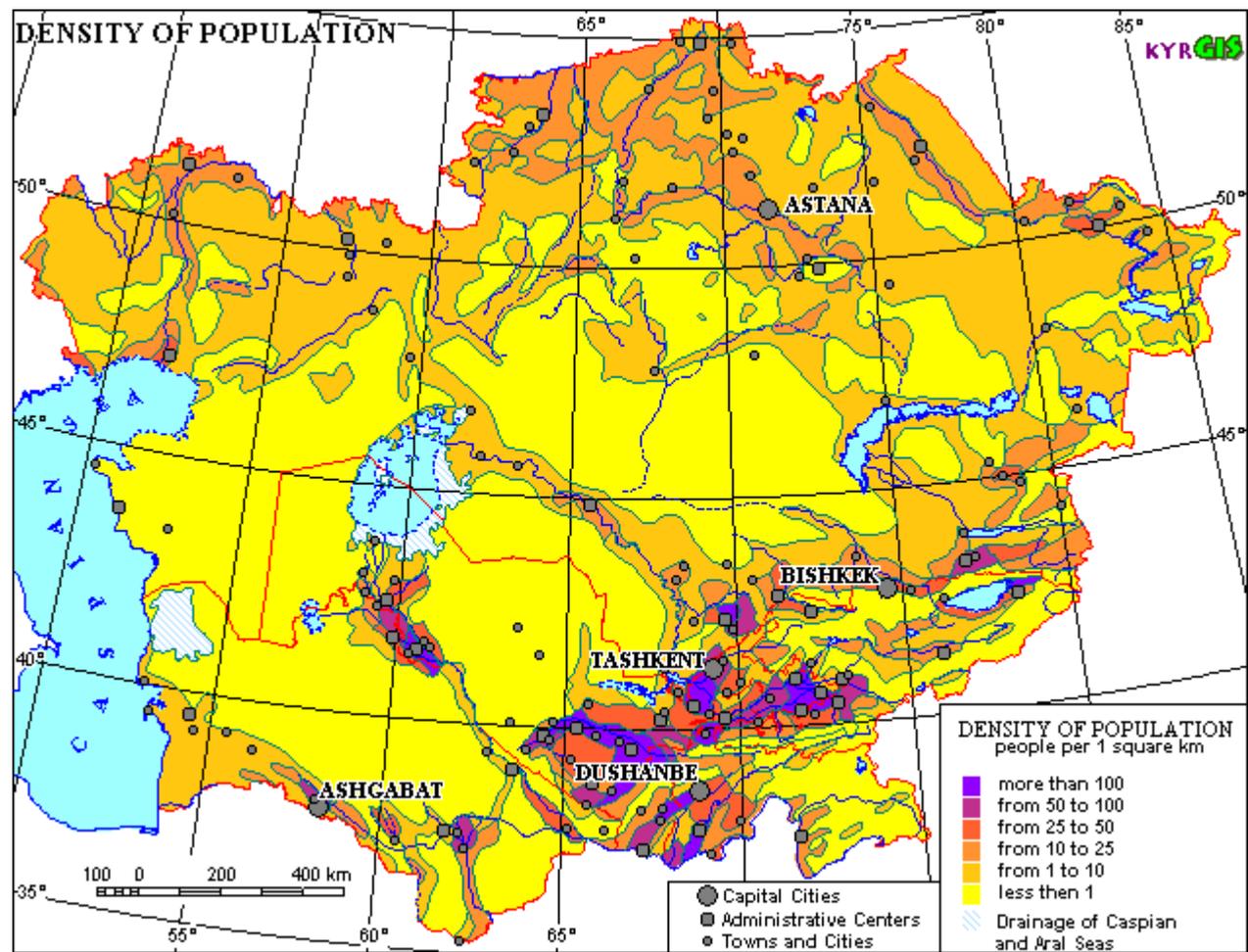
The countries of a given catchment area can be characterised as members of an imaginary group. The formations of their relations are illustrated with models by Frederic W. Frey, and he underlines the factors bearing roles in the development of the relation-network that can lead to conflicts in a catchment area of a certain river. With his models he emphasises the importance of water from the point of view of one performer and he calls it the most incomprehensible factor. This statement is true in Central-Asia too, because after the end of the Soviet Union the relative appreciation of water did happen for its role grew significantly. Another important factor mentioned by the political scientist is the geographical location of a given nation along the river which actually shows the main geo-political location as well. Accordingly a country can lie along the source area or the upper-reach of a river, in the middle or at the lower reach. The one lying along the upper reach has advantage that is priority; those along the upper reach are the last ones which is the less fortunate according to geo-political terms. The situation is the most stable when the nation in the upper part is the most powerful in military sense and hardly has interest in water management. The situation is the least stable when it is the other way round, when the nation in the lower part is the most powerful and has great demand for water but at the same time the nations further up along the river also use a great deal of water. The Central-Asian water-management is an excellent example for the least stable situation where the independent states try to use more and more of their stock of water available in the summer. Countries along the upper reach (Tajikistan, Kyrgyzstan) use their rivers for producing water-energy; winter is the best time for that. They made reservoirs on the rivers that are supplied by glacier-thaw and use them in the winter while countries in the lower part bearing bigger military forces (Turkmenistan, Kazakhstan, and Uzbekistan) have severe water shortage in their cotton fields in the summer. So the conflicts in connection with international rivers occur in the shadow of other problems such as usual interstate treaties, oppositions, trust or mistrust and hostility. It is even worse when the water is used as a political tool, no matter whether it is a normal or any kind of political dispute if a another problem gets interwoven with the water questions it will generate more conflicts. This political mentality is not unfamiliar to the Central-Asian leaders where there is constant mutual mistrust filled with the pursuit of creating regional hegemony.

3. I started the processing of the topic with the examination of the social and economic aspects of the water management of the mentioned countries. The examined aspects are the

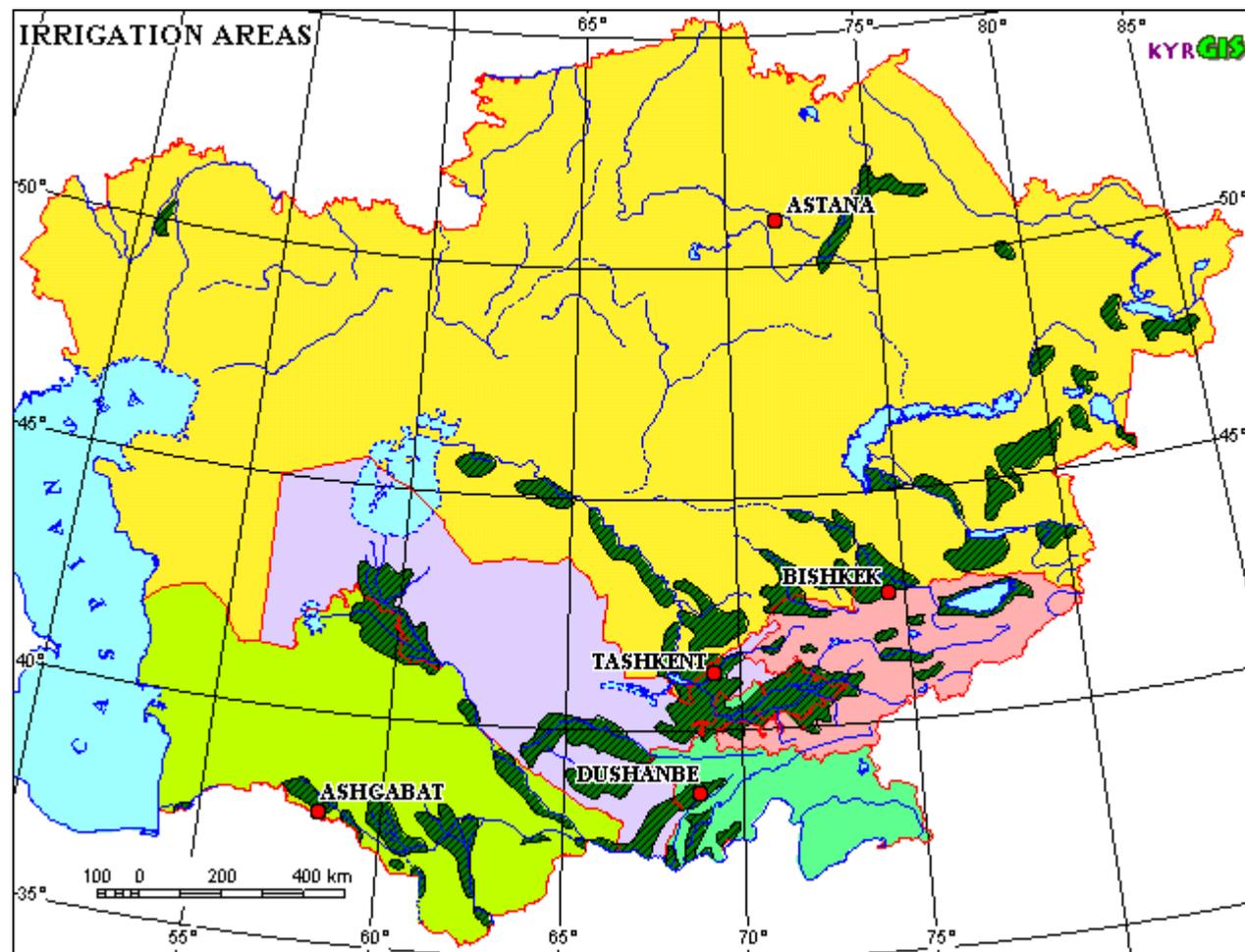
portion of the employed in the agricultural sector, the national income from the cotton sector and hydro energy. It was important to touch the governmental water laws, because in many cases their fiasco is the reason of the international conflicts. Further on I mention what kind of ecological disasters and dangers exist in the Central Asian states. From these points of view easily can be proved the water management and related social, ecological and economic developments are very important national security issues.

The examination of the institutional water management structure and the juridical normative concluded in that the theoretical system of the water management is absolutely useless without decision ability on the high policy level and if in the region competition, confrontation suspicion of each other and the superficial conversations among the political decision makers is typical. The theoretically examined conflict resources can be found in the real life in Central Asia, so there are conflicts caused by competition between the economy sectors like agriculture and water energy nexus, but beside this, we can mention the fishery and cotton developments' contradictions as well. Further on there are allocational conflicts also inasmuch as the upstream countries are the decision makers in water management primarily who can use the water for energy production in winter and the downstream countries for irrigation in summer, but these developments are obviously incompatible with each others in seasons.

To resolve the problem the Central Asian states created an energy consortium which is based on the trade with water and energy. A working consortium could give more possibilities to cooperate to the Central Asian states. First of all, if the states would agree in that the water is an economic value, an item, which value is distinguished by its scarcity or abundance. Secondary, the countries which suffer from water scarcity are rich in energy - Uzbekistan and Kazakhstan are among to the richest countries in hydrocarbon resources on the Earth – than Tajikistan and Kyrgyzstan are rich in water but they have not got traditional energy resources at all. Accordingly, on these two ways the Central Asian could create a base of effective regional cooperation. Unfortunately, the reality shows absolute different picture. The hostile and mistrustful attitude representing of each other relations between the Central Asian states, the incompatibility of centralized and opened economies of the countries, the lack of the free flow and exchange of information, striving for the regional hegemony hardly can show the sign of the regional cooperation and the water management remains as a serious conflict potential of the region. My choice for the discussion of the local conflicts is the problem of the Fergana valley which I explain with the compare of two thematical maps.



Resource: <http://enrin.grida.no/aral/aralsea/english/general/map1.htm>



Resource: <http://enrin.grida.no/aral/aralsea/english/land/map2.htm>

The two maps illustrate well that the most densely populated and the most irrigated area in Central Asia is the Fergana valley. The coincidence carries the conflict potential in itself even that case the region is full of many other originated stresses as well. Worsens the situation the fact there works the separatist Uzbek Islamic Movement (IMU) which strives to recreate the independent Khanate of Kokand. Here are border disputes among Kyrgyzstan, Uzbekistan and Tajikistan, to which real reason gives the ownership of the arable lands. The strategically meaningful rivers and channels crosses the border sometimes 3 times in 10km, which fact is more important in the local conflicts, because the upper groups to the origin of the streams can close the water, and the irrigation possibilities from the downer located. The ethno-cultural conflicts even worsen the situation. The main reason of the bloody conflicts in the Fergana valley that here living pastoral Kyrgyz nomads keeping cattle, can not be live together with the settled down Tajiks' and Uzbeks' way of life. This basic situation creates the most classical water conflict, in which the water can be the reason and the instrument also. Even though, the all existing contradictions can spill over in the issue, and can generate more deep and serious contradictions. This happened several times in the Fergana valley.

The world's biggest ecological disaster related to the fiasco of the Central Asian water management. My dissertation hardly touches the problems of the Aral Sea, because, most of the experts, the international organizations and the states themselves show absolute uninterested in the save of the lake. Very sadly, but we must constant the probable drying out of the Aral Sea would not generate any kind international conflicts. We can sum up that the disaster of the lake is the symbol of the fiasco of the regional international cooperation. Ignoring all these negative tendencies new reservoirs, dams are built up and created the ideas and plans how to substitute the water in the Aral Sea basin.

Parts of them seem to be realized slowly, for example the Golden Century Lake in Turkmenistan with 3500-4000 km³ water capacity there is a new renaissance of the conversion Siberian Rivers to Central Asia and this plan enjoys a huge political support as well from the Russian side. I concerned the real solution on the water management is not the new engineer wanders, but it could be the regional harmonized cooperation. Several international donor organizations appeared on the field of water management of the region. First of all we have to mention of the development of the World Bank, UN and its departments like UNEP, UNDP, ESCAP, UNESCO, also plays very important role the USAID, and the EU with its special programs like WARMAP and WARMIS. NGOs could

have play very important role as well on this field of water management, but unfortunately most of the experts are unsatisfied with theirs results which they explain with the poititians' decision making mechanism.

V. POSSIBILITIES OF THE USE OF THE RESULTS

The interwoven and built to each other functions and structures of the water management and the security policy brilliantly illustrate the inter-disciplinary direction of the improvement and approaches of the contemporary sciences. The process of the problematic is based on the system on organically, logically built on each other security policy aspects. I think this methodology is perfectly suitable for analyse of water management or environmental management on regional or on international level also.

Nowadays it is obvious the reducing measure of freshwater causing a global issue, which appears in the water management of the desert and semi desert areas, this is why I convinced, there can be used this kind of environmental conflict potential analyse.

My main aim was to process of the water management problems in Central Asia; this is why I find the results of my research there could be the most usable in practise.

PUBLICATIONS BASED ON THE TOPIC OF THE DISSERTATION

PUBLICATIONS ISSUED ABROAD

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