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THESIS

**ENVIRONMENTAL SECURITY IN A POST SOVIET
EUROPE**

by

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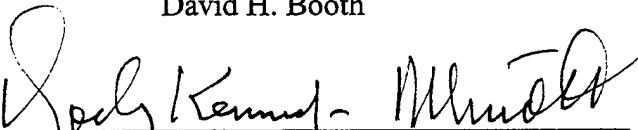
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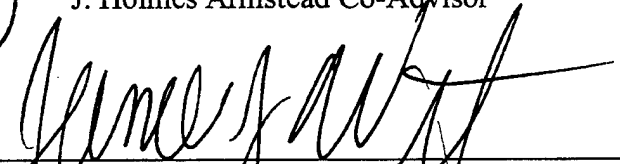
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ABSTRACT

In 1997 the Czechoslovakian and Hungarian governments entered into a Treaty that called for a joint project to build two dams on the Danube river, one in Gabčíkovo, Czechoslovakia and one in Nagymaros, Hungary. The original intent of the project was to provide a system of canals, reservoirs and locks to improve transportation on the river. The Czechoslovakians blocked and diverted the Danube River at Cunovo, Czechoslovakia causing an immediate negative environmental impact. The largest fresh water aquifer in the region lost more than two thirds of its water. The ground water level dropped over 12 feet, contributing to the desertification of the region. The river flow was slowed, and in some areas stopped altogether, creating stagnate pools which were breeding grounds for disease. The natural filtration and cleansing capability of the river was harmed, increasing the level of pollution in both the river and the aquifer. Continued construction of the dams could have caused lasting negative effects to the ecosystem in the region.

The Hungarians ceased construction in 1989 sighting environmental degradation as their reason for discontinuing their part of the project. The Slovakian government subsequently took the Hungarians to court to resolve the issue.

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EXECUTIVE SUMMARY

In 1977 the Czechoslovakian and Hungarian governments entered into a Treaty that called for a joint project to build two dams on the Danube river, one in Gabčíkovo, Czechoslovakia and one in Nagymaros, Hungary. The original intent of the project was to provide a system of canals, reservoirs and locks to improve transportation on the river. As a result of the Hungarians canceling their portion of the project and the Czechoslovakians trying to achieve the main aim of the joint project the Czechoslovakians blocked and diverted the Danube River at Cunovo, Czechoslovakia. The blocking of the Danube at Cunovo violated the terms of the 1977 Treaty and caused an immediate environmental impact. The largest fresh water aquifer in the region lost more than two thirds of its water. The ground water level dropped by over 12 feet, contributing to the desertification of the region. The river flow was slowed, and in some areas stopped altogether, creating stagnate pools which were breeding grounds for disease and allowed the toxic chemicals to settle on the river bottom and seep into the aquifer. The natural filtration and cleansing capability of the river was harmed, increasing the level of pollution in both the river and aquifer. The over 400 species of animal and plant life that exist in the Danube River basin are threatened by the project. The Danube River basin is home to more than two million people from thirteen countries. Much of the regions agricultural production comes from the river basin and relies on its waters for irrigation.

Continued construction of the dams could have had lasting negative effects on the ecosystem in the region, not to mention geopolitical and transboundary implications if Slovakia and Hungary cannot come to a mutual agreement.

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Most importantly I would like to thank my wife Dani and our teenage children, Brandon and Kiersten, for supporting me through this endeavor. Any success I enjoy can be directly attributed to their love and support. I would especially like to thank my wife for her patience and understanding, she had to listen to me while I explained my ideas and beliefs with regards to the natural environment.

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I. INTRODUCTION

A. BACKGROUND

There is a new and different threat to our national security emerging - the destruction of our environments. I believe that one of our key national security objectives must be to reverse the accelerating pace of environmental destruction around the globe.

- Senator Sam Nunn, Chairman, Senate Armed Services Committee, 1990

“Environmental abuse is not only about how humans treat the nonhuman world but also about how they treat each other. Whether referring to climate change, threats to biological diversity, nuclear waste, or depleted fish stocks, some people benefit from the environmental abuse, while other disproportionately suffer from the consequences.”¹

- Paul Wapner, 2000

The collapse of the Soviet Empire and the end of the Cold War has presented Europe with new challenges that affect the entire region. Countries that were members of the former Soviet Union and Warsaw Pact now enjoy independence. They are now free from Soviet policy and domination and free to make choices that provide for economic growth and prosperity.

Today Europe appears much different. New countries have emerged with varying degrees of economic health seeking to join Western economic, political and military

¹ Paul Wapner, People, Nature, and Ethics, (Current History, November, 2000)

partnerships, to transform their societies and economies into systems capable of self reliance and prosperity. Many of these emerging democratic countries face migration and immigration challenges that threaten to deplete precious resources. A few former bloc countries have emerged strong and capable of sustaining their transition to democracy while others are froth with corruption and despair.

Prior to the collapse of the Soviet Empire little was known about the environmental impact of Soviet industrialization on the region. In the Western industrialized nations, air, water and land pollution caused by uncontrolled dumping, pumping and spilling of numerous industrial by-products was having devastating effects on the environment. It was not until 1971 that the west realized something had to be done about the environmental destruction caused by the uncontrolled polluting that had gone on for the previous twenty years. In some areas of East Europe the environmental damage would take decades or even centuries to repair. It was not until around 1989, with the pending collapse of the Soviet Empire, that an assessment of the environmental damage inflicted by Soviet industrialization could be conducted. Forty years of Soviet centralized industrialization had produced devastating effects on the environment. The Soviet government had a total disregard for the long term health and well being of its people, or the environment with its life sustaining gifts.

B. IMPORTANCE OF THE TOPIC

Many regional conflicts have started over natural resources, water and fossil fuels are just some recent catalysts.² As John Cooley, a former U.S. State Department official stated in 1984, "Long after oil runs out, water is likely to cause wars, cement peace, and make and break empires and alliances in the region, just as it has done for thousands of years." The 1991-1992 Gulf War commenced because Iraq wanted not only the oil rights in parts of Kuwait but also the right of way to use the port in northern Kuwait for shipping of its oil through the Persian Gulf.

Water is scarce in many parts of the world; it is important for the sustainment of life through drinking and irrigation of crops that feed the inhabitants, livestock and indigenous wildlife near the water source.³ Rivers provide much of the water needed for drinking and irrigation. They also provide industrial plants and factories cooling water for processing and manufacturing and transportation avenues. Conversely they also have provided a means for dumping the waste generated by industrial manufacturing. Additionally, human waste has also been dumped uncontrolled in the Danube River region for centuries, heavily contributing to the high coliform levels in the river around inhabited areas. Most factories and plants have been built along rivers and streams to aid in the use of the water source. The degeneration of the Danube River in Europe is a

² Norman Myers, Ultimate Security, (Island Press, 1996) 7.

³ Myers, 53.

prime example of the misuse of a river producing devastating ecological, economic and political effects in central and south-central Europe.

The potential for transboundary conflict in the region of the Danube River thus is fairly significant. Although the potential for military conflict may be minimal, political and economic conflict is likely. Recently, a gold mine in Romania was caught illegally dumping cyanide into the Tisza River, but was punished with a \$800 fine, less than a slap on the wrist.⁴ The cyanide flowed into Hungary causing an immediate political reaction from the Hungarian government. The Romanian Environmental Ministry general manager stated the cyanide levels in the river were 700 times the normal level.⁵

Water related diseases, such as malaria, diarrhea, cholera and yellow fever contribute significantly to the mortality rate in many developing countries. Consumption of contaminated drinking water and diseased fish also contribute to the morbidity and mortality rates. The Romanian cyanide spill has been linked to a number of deaths in the region resulting from the consumption of contaminated fish. The demand for water is only going to increase in the future. Climate changes brought on by global warming, depletion of the ozone layer, increased greenhouse gases, and the natural aging process of the earth will all effect the availability of water, making it a highly sought commodity worth fighting over. As the availability of natural resources in an area dry up, the

⁴ Alexandru Alexe, Cyanide was Dumped Intentionally, (Associated Press, February 15, 2000).

⁵ Michael Roddy, Cyanide spill pollutes Romania, Hungary, (Environmental New Network, February 9, 2000)

indigenous population will seek to migrate towards alternate sources, sometimes across borders. These immigrants are not always welcomed by the local inhabitants.

In 1977 Ethiopia and Somalia went to war because of mass migration. The highland region of Ethiopia, long known for fertile land that produced the majority of the nations crops, had dried up from over use. Peasants who made their living tending those crops left the highlands for the Ogaden lowlands in search of jobs. The Ogaden is located in close proximity to the border between Ethiopia and Somalia. Somalia was experiencing an economic crisis due to a sharp increase in population that put a strain on a already fragile economy. Somalis also migrated toward the Ogaden region. The mass migration of Ethiopians and Somalis to the Ogaden threatened the stability of the region and later resulted in war between both countries.⁶ Transboundary migration born of environmental degeneration can be a major destabilizing factor in a region.

The world community is a collection of some 200 nations that have collectively spent in excess of one trillion dollars fighting one another or preparing to engage in battle. These conflicts have resulted in over three hundred thousand deaths during 1995 alone. Many of these conflicts have an environmental source.⁷ There are approximately 200 major rivers in the world of which around 150 are shared between two countries and 50 are shared by more than three. These 200 or so rivers supply more than 40 percent of the worlds fresh water for domestic use. The world's population is only expected to

⁶ Myers, 60.

⁷ Myers, 7.

increase in the future and the water supply is expected to diminish at a faster rate due to over consumption and mismanagement.⁸

The international community has been engaged with identifying, regulating and policing global environmental issues since 1971. Maurice Strong was tasked by U Thant, Secretary General, United Nations, to hold a conference to study the relationship between development and the environment. He invited twenty-seven renowned experts to attend the conference. It was the precursor to the first global conference on the environment which was held in 1972⁹. In the Danube River Basin the European Union is engaged in repairing the damage to the environment inflicted by the former Soviet Bloc countries.¹⁰ It is a time consuming endeavor, and has taken the free world thirty years to recognize the enormity of the task. It took years to clean up the Mississippi and the Columbia Rivers in the United States, two of the largest rivers in the world, once it was determined something had to be done in order to save those rivers and the population relying on them. In his book, *International Organizations*, A. Leroy Bennett states "Gradually the realization has spread that major environmental problems require international attention in order to anticipate and forestall the various forms of ecocatastrophe that could overtake humankind."¹¹

⁸ Myers, 18.

⁹ A. Leroy Bennett, *International Organizations*, (Prentice Hall, 1995), 334.

¹⁰ John Van Oudenaren, *Uniting Europe*, (Roman & Littlefield, 2000), 155-159.

¹¹ Bennett, 333.

C. METHODOLOGY

This thesis will present the issue of environmental security in post Soviet Europe from a transboundary threat perspective. Chapter II will set the scene through a brief description of the area along the Danube River Basin. Chapter III will present a case study of the Gabcikovo-Nagymaros Dam project, a joint project between Czechoslovakia and Hungary to build two dams along the Danube River. Chapter IV will describe the legal implications and International Court of Justice (ICJ) findings of the law suit brought against Hungary by Slovakia who inherited the project after the split from Czechoslovakia. Chapter V will present some conclusions and observations for possible solutions to prevent future conflict arising from environmental issues.

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II. HISTORICAL SNAPSHOT

A. DANUBE RIVER

The Danube River flows through Germany, Austria, Slovakia, Hungary, Serbia, Montenegro, Croatia, Bosnia, Herzegovina, Slovenia, Bulgaria, Romania and the Ukraine. During the 1950s, the Soviets undertook mass industrialization. Politics influenced the location of industrial centers and factories, a majority located within close proximity to rivers and streams.

The Danube River was formed in the 3rd Century AD and is the second longest river in Europe spanning over 1700 miles. It is the only major European river that flows west to east. It begins underground in the Black Forest region of Germany and travels over 100 miles before it surfaces. The Danube passes through more countries than any other river on earth and forms the borders between Slovakia and Hungary, and Bulgaria and Romania. Additionally it passes through four nations' capitals: Vienna, Austria; Bratislava, Slovakia; Budapest, Hungary and Bucharest, Romania. The Danube also is the recipient of more than eight percent of the regions runoff from more than 300 tributaries, of which 60 are navigable by river craft. The river serves as the only water access to the North and Black Seas for Austria, the Czech Republic, Slovakia and Hungary. A canal built in 1832 links the Danube with the Main and Rhine rivers providing passage for commercial river craft from the Black Sea to the North Sea.¹²

¹² Collier's Encyclopedia, (P.F. Collier Inc, 1990), Volume 7, 712.

The Danube river basin spans more than 300,000 square miles and runs through mountainous as well as fertile areas. There are currently 47 dams on the Danube providing hydroelectric power and fresh water reservoirs for the approximately 100 million inhabitants of the Danube River Basin.

The Danube River has been the location of centuries of conflict. In the recent past it has been the location of two world wars and the Cold War and was a key objective of Nazi Germany during World War II. During the Cold War, the Soviet Union controlled more than two thirds of the river's length. Soviet domestic policy did not include concern for the impact on the environment or human life that these factories and industrial plants would have. These factories and industrial plants poured tons of industrial waste and toxic pollution into the Danube River and its tributaries unregulated and unsupervised by communist governments. Nuclear waste from the power plants, super heated water and radioactive materials have all been dumped into the Danube.

Beginning in 1856 with the Treaty of Paris, a number of European Commissions have been established in order to control jointly the Danube River and its tributaries. During World War II, Nazi Germany abolished the commissions and controlled the entire river during 1940 to 1944.¹³

¹³ Danube, Microsoft Encarta 98 Encyclopedia

B. BIRTH OF ENVIRONMENTALISM

In 1971 the first Conference on the Environment was held near Geneva Switzerland. The meeting was attended by twenty-seven international experts at the invitation of Maurice Strong, United Nations Undersecretary General in charge of the Secretariat Staff, who was appointed by Secretary General U Thant as the conference's Secretary General. These experts were assembled to study the relationship between development and the environment. This conference was the precursor to the first United Nations, World Conference on the Human Environment held in 1972 in Stockholm Sweden. In total, delegates from 113 countries attended the conference along with representatives from nearly 200 Non Governmental Organizations (NGO). The conference, however, was not attended by the Soviet Block countries. The outcome of the conference raised international concern for the world environment and was the impetus for the formation of the United Nations Environmental Secretariat which was headed by Maurice Strong. Funding for United Nations environmental programs was provided voluntarily by its members. Although a step in the right direction, the Environmental Secretariat had no coercive powers or enforcement means.¹⁴

During the 1980s, environmental concern and awareness accelerated throughout the world. A number of conferences and meetings were held with the world environment as the agenda. In 1987 the Bruntland Report, headed by Gro Harlem Bruntland, Norway's Prime Minister, was submitted to the United Nations General Assembly. The

¹⁴ Bennett, 335.

Bruntland Report was a 374 page document representing the findings of a three year study on the global environment which called for “sustainable development in which environmental concerns are paramount.”

By 1988 political parties, called Greens, in western Europe began to emerge with the environment and environmental policy as their cornerstone. West Germany was the first country to experience environmentalism with the formation of the “Ark Green Movement.” Simultaneously, Soviet block countries were experiencing resistance to the lack of environmental policy. Some say the fall of communist legitimacy in Eastern Europe began with environmental concern by its younger generation. According to R.J. Crampton, “Environmental degradation was a product of the communist system and that the ultimate answer to the question of the ecology, as to many others, was to escape from that system.”¹⁵

The Chernobyl accident served as the one major event that raised the social consciousness of the younger generation in the Soviet Block countries. Chernobyl arguably the most devastating example of environmental disaster was but one of many environmental “accidents” in the region that had contributed to the “greening” of political activism in Eastern Europe. Today a heated debate is ongoing in Russia over the proposal to accept nuclear waste from abroad for reprocessing or burial. An overwhelming number of Russians oppose the proposal even though the government would receive compensation from those countries who would send their nuclear waste to

¹⁵ R. J. Crampton, Eastern Europe in the Twentieth Century, (Routledge, 1997) 413.

Russia.¹⁶ Equally devastating, is the shrinking of the Aral Sea in the region of the former central Asian republics of the Soviet Union.¹⁷ It was once the world's fourth largest lake. Between 1960 and 1990 it shrunk by almost half making it the sixth largest lake and one of the most troubled. The Aral Sea has all but dried up due to the uncontrolled and excessive use of the lake's water for irrigation of cotton fields. According to Norman Myers, "Local scientists view it as an environmental catastrophe to rival Chernobyl."¹⁸ Recognized by the European Union and the United States as a potentially destabilizing problem, efforts are underway to replenish and rejuvenate the lake. The United States has built a reverse osmosis plant in Dashhowuz, Turkmenistan and constructed chlorination facilities in several cities along the Amu Darya delta. The United States opened an environmental office in Tashkent, Uzbekistan to better coordinate their efforts to reverse the desiccation of the region. These are but a few examples of the end result of environmental indifference by the Soviets.

¹⁶ Interfax, March 2001.

¹⁷ Erika Weinthal, Central Asia: Aral Sea Problem, (Foreign Policy, March 2000) Volume 5, Number 6.

¹⁸ Meyers, 53

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III. GABCIKOVO – NAGYMAROS DAM PROJECT

A. PROJECT INITIATION

Fifteen years ago, the idea of improving mother nature was in vogue in Communist Europe. Former Soviet leader Leonid Brezhnev, for example, championed the idea of irrigating the deserts of Soviet Asian territories by reversing the course of Siberia's three great rivers.¹⁹ Although Brezhnev's idea was never realized, it did serve as the impetus for the Gabcikovo–Nagymaros Dam project. The Dam building project was pushed to reality by 4 events: the catastrophic 1954 floods in Hungary, the 1965 floods in Czechoslovakia, the recommendation made by the Danube Commission for improving the Danubian waterway between Bratislava and Budapest, and the oil crisis of 1973. An underlying but more important reason for building the dams was its strategic importance to the Soviet government. By improving the trafficability of the Danube it opened access to Austria and Germany to the Soviet Navy.

After intensive studies, none concerning the environmental impact of the project, and many design recommendations, a joint design was agreed upon by both governments. On May 6, 1976 the Czechoslovakian and Hungarian governments signed the *Joint Agreed Plan*, which called for the building of two dams on the Danube and diverting the main river bed into a canal that would provide hydroelectric power, reroute international

¹⁹ TED Case Studies, [Hungary Dam](http://www.american.edu), www.american.edu

economic river traffic, create a reservoir and aid the economic development of the two countries (see Figure 1). The "Treaty Concerning the Construction and Operation of the Gabčíkovo System of Locks" was signed and ratified by both governments in September 1977.²⁰ The treaty was unilaterally unrevokable since the majority of the affected area between Gabčíkovo and Nagymaros was within Czechoslovak territory. The project involved no change to the border between the two countries and the cost of the project was to be split evenly. It was thought that by altering the shallow reach of the Danube between Bratislava, Czechoslovakia and Győr, Hungary it would open up the use of the Danube-Main-Rhine waterway for commerce. The Soviet government supported this endeavor since it shipped large quantities of goods via the river.

The construction of the Dam at Gabčíkovo began in 1978 and was to be completed in July 1986. The entire Gabčíkovo-Nagymaros project was to be completed by the end of 1990. By the early 1980s Hungary, like much of the rest of eastern Europe, was experiencing a significant economic crisis. No longer able to afford the project, Hungary negotiated a temporary project suspension with Czechoslovakia and signed an

²⁰ Steven R. Hearne, Environmental Security in the Danube River Basin, (Army Environmental Policy Institute) 79.

amendment to the 1977 Treaty extending the project completion schedule by four years.

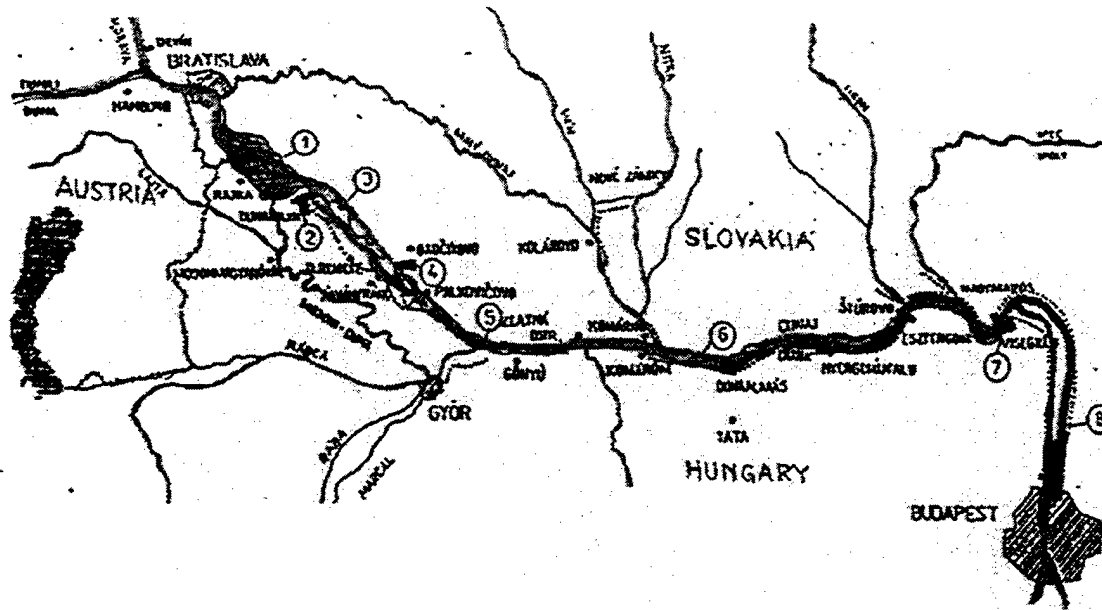


Figure 1. Gabčíkovo-Nagymaros Dam Project

- (1) Reservoir
- (2) Gabčíkovo Dam
- (3) Power generating canal
- (4) Gabčíkovo power station
- (5) Deepening of the Danube riverbed
- (6) Flood protection measures
- (7) Nagymaros Dam
- (8) Deepening of the Danube riverbed

In an effort to alleviate the economic hardship that slowed the project, a joint agreement between Hungary and Austria was signed, whereby Austria would contribute funds to the dam in exchange for power generated by the Gabčíkovo hydroelectric plant. By mid 1989, months before the fall of the Berlin Wall, Hungary was already on the road to democratization. To gain needed popular support, the reformists in the Hungarian

Parliament used the Gabčíkovo-Nagymaros Dam project as a political tool. On the strength of the reformist movement and findings that ecological and technical evaluations were insufficient prior to the start of the project, the Hungarian government permanently suspended the Nagymaros project on 13 May 1989.²¹

As a direct result of the lack of environmental policy, no environmental impact study was conducted prior to beginning construction of the Gabčíkovo and Nagymaros dams in the early 1980s. It was not until after the end of the Cold War that environmental assessments were conducted to ascertain the extent of the damage to the ecosystem in the Danube River Basin, and in the area of the Gabčíkovo-Nagymaros project. These studies revealed that damage to the ecosystem had gone unchecked for fifty years and had done irreparable damage along the river to the Black Sea. The Gabčíkovo-Nagymaros project contributed significantly to the depletion of the drinking water aquifers and the ground water table. It could be years before the impact of Soviet industrialization and domestic policy on the Danube and its terminus, the Black Sea is fully apparent.

²¹ Miroslav Liska, Development of the Slovak-Hungarian section of the Danube, (Gabčíkovo Website, August 2000)

B. PROJECT CONSEQUENCES

Decision makers often privilege the lives of current generations over future ones, and this constitutes a moral failing.²² The Soviet sponsored Gabcikovo-Nagymaros Dam projects had immediate environmental impact in and around the construction sites. The main riverbed was diverted at the Gabcikovo site affecting the down stream characteristics. Damage to the surrounding forest, floodplain, agricultural land, wetlands and wildlife habitats was extensive.²³ The water levels in certain parts of the riverbed dropped six feet while other areas dried up altogether (see Figure 2). The ground water level dropped to twelve feet below the surface soil virtually eliminating available water causing the desertification of the once fertile area. Drinking water in the Szigetkoz underground reservoir dropped by over two-thirds. One of the largest aquifers in Europe, it is replenished through the natural filtering system of the several hundred-meter deep gravel sediment layer of the Danube riverbed. This source of drinking water supplies Hungary and Slovakia with one million and 2.3 million cubic meters of drinking water, respectively.²⁴ As a result of the construction of the Gabcikovo Dam and the diverting of the main Danube River from its natural route, the Szigetkoz reservoir has been compromised, depleting supplies of fresh water that would take years to replace. The smaller aquifers in the region that supply much of the potable water in the area are heavily contaminated with heavy metals, nitrates and organochlorines. Elevated levels of

²² Wapner, 356.

²³ Save the Danube Wetlands, (July 31, 2000), 5.

²⁴ TED Case Studies, Hungary Dam, (July 31, 2000), 11.

nutrients, nitrogen and phosphorus also are present; significantly higher concentrations than normally found in similar farming areas. Over fertilization is a major concern due to the increased demand for crops and produce necessary to feed the population. The fertilizer finds its way into the underground water sources through runoff and erosion of the topsoil containing the pesticides, fertilizers and other toxic chemicals.

In addition to rerouting the main channel, dredging the riverbed and excavating at the Gabcikovo Dam site has slowed the flow and created significant problems. The World Wildlife Fund (WWF) estimates that two thirds of the riverbed erosion has been caused by excavation and dredging operations necessary to build the dams.²⁵ Prior to the dam construction and river diversion the river flowed at 2000 m³/sec. After the project began the river slowed to 400 m³/sec. Retarding the flow has hindered the self-cleansing ability of the river. Pollutants, toxicants and contaminated sediments are settling on the

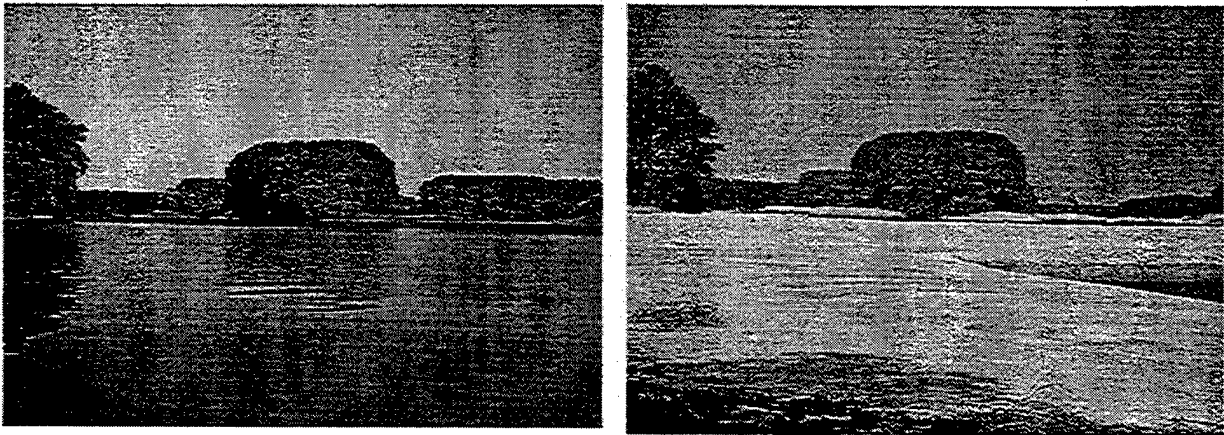


Figure 2. Before and After

²⁵ Ibid. 11

riverbed and seeping into the aquifer contaminating a significant fresh water source. Sludge and heavy clay also are settling on the river bottom preventing the river water from seeping in and replenishing the aquifer altogether. Percolation and natural filtration that occurs in the upper level of the riverbed is severely hindered, allowing, pollutants to seep into the ground water and pollute surface waters that carry the pollution further downstream spreading it all the way to the Black Sea.

Much of the Black Sea region where the Danube flows is currently dead. No fish or plant life exists; the dead area is growing, threatening the natural life of the Black Sea. Oxygenation of the river is reduced through pooling and slower flow rates, causing the growth of oxygen robbing algae and disease producing bacteria. The algae kills plant life, suffocates fish and contributes to the growth of disease in the animals that drink the stagnate water and eat the fish living there. Additionally, the slowing of the rivers flow threatens the fish population by interrupting or preventing spawning activities.²⁶ Young fish are stifled by the sediment and flow fluctuations caused by the dredging and inconsistent depth changes. Spawning pools are polluted, killing adult fish as well as the fry. Those that do survive are contaminated and diseased, contributing further to disease and bacteria growth once dead. The two intentional cyanide spills by Romania killed countless fish causing illness and a number of deaths amongst the local populace living down stream from the spill who unknowingly ate the fish.²⁷

²⁶ *ibid.* 11

²⁷ Alexandru Alexe, Cyanide dumped intentionally, Associated Press (January 23, 2001)

Seventeen protected areas and four nature reserves are threatened by the Gabčíkovo-Nagymaros project. These preserves and surrounding areas between Gabčíkovo and Nagymaros are home to over 400 species of animal and plant life.²⁸ Continued construction of the dams and diversion of the river could have endangered 130 species of birds; 54 percent of the regions aviary population is found in this area. Thirty mammal, eight reptile and six amphibian species also call this region home. In addition, over 30 fish species, 12 of which are protected, are found in the waters of the Danube and its tributaries. Due to the slowing of the flow rate of the river a 66 percent reduction in the fish stock is anticipated. This will have a significant negative impact to the local populace that relies on the fish for food.

The extreme change in flow rate, water level and water quality has already damaged the regions resources. According to the environmental estimates provided by Non governmental organizations, such as the WWF and World Bank, irreparable damage to the areas forests, fertile land and wildlife habitats will be caused by the continued construction of the dams and diversion of the river.²⁹ Some delicate species of plant and animal life could face extinction resulting from changing predatory practices and water quality changes. Some of these species are found nowhere else in the world and are unique to this region.

Many cities and villages along the Danube and its tributaries are threatened. The slowing flow rate of the river allows the pollution and toxic waste that has been dumped

²⁸ TED Case Studies, Hungary Dam, (July 31, 2000), 11.

²⁹ *ibid.*

in the river to settle on its banks. Stagnate pools are formed providing a breeding ground for disease. Children playing near or in the water and the animals that drink the water are at risk from life threatening disease. Availability of water for farmland irrigation is at risk due to the low water levels and high contamination. Water levels are too low for shipping and fishing boat traffic which interrupts commerce. Some of these villages that relied on the river for farming and as a food source were forced either to move or to find other more costly ways of sustaining the communities.

The Hungarians and Slovaks disagree on the environmental impact of the Gabčíkovo-Nagymaros project. The Hungarians believe the project will cause long lasting, irreparable damage to the ecosystem in the project areas and further down stream. The Slovaks maintain that the Gabčíkovo project is environmentally beneficial and is reviving previously desiccated wetlands.³⁰ The Slovak government acknowledges the project will have an adverse impact on the areas ecosystem, but will not have lasting effects. They maintain that once the dam is completed and water is returned to the branches of the Danube River, at lower levels than prior to the project, the flora and fauna, wildlife and forests will return. Since the building of the Gabčíkovo Dam the Danube wetlands do show some evidence of revival.³¹ The Szigetkoz underground reservoir does show signs of being replenished, however the WWF and other environmental advocacy groups maintain that despite this evidence the overall damage done is irreversible. According to Paul Wapner, "Human beings draw resources from the

³⁰ Hearne, 50-51.

³¹ TED Case Studies, Hungary Dam, (July 31, 2000), 7.

earth to provide energy, food and other materials for life. They rarely do so, however, at a rate at which the natural environment can replenish itself.”³²

³² Paul Wapner, 357

IV. A LEGAL SOLUTION

A. BACKGROUND

By the late 1980s Hungary had serious misgivings about the construction of the Nagymaros Dam. Czechoslovakia had diverted the river effectively altering the border between Hungary and Czechoslovakia. This action was contrary to the 1977 Treaty that stipulated that the path of the original riverbed would delineate the border between the two countries.³³ The treaty also stipulated that the water of the Danube was not to be impaired as a result of the construction; protection of the environment was to be insured and the old riverbed was to be maintained. All three stipulations were effectively ignored and violated by construction of the Gabčíkovo Dam. Had the construction of the Nagymaros Dam been completed, the border issue would have been moot since it followed the stipulations in the Treaty. The Hungarians ceased construction of the Nagymaros Dam in 1981 when economic crisis overtook the country. The Hungarians signed an agreement with Czechoslovakia that allowed for a delay in the completion of the Nagymaros Dam in 1994. The delay allowed a stronger opposition to form which called for an ecological and environmental impact study to be done before continued construction. On May 13, 1989 construction of the Nagymaros Dam was permanently suspended and plans to demolish the Dam and return the region to its original state were proposed.

³³ Save the Danube Wetlands, The Danube Lawsuit, (July 31, 2000), 1.

By late 1989 the communist governments of Czechoslovakia and Hungary were collapsing. Slovakia, seceded from the Czech Republic and inherited the Gabčíkovo Dam project. Slovakia, under the leadership of Vaclav Havel, agreed to conduct a comprehensive environmental impact study to help soften the dispute. This study revealed that with modifications and additional facilities along the disputed area, the Gabčíkovo-Nagymaros Dam project would benefit the environment. Negotiations continued between Slovakia and Hungary to resolve the dispute but yielded no amenable solutions.

B. SLOVAKIA AND HUNGARY GO TO COURT

The European Community (EC) got involved in April 1992 to try and solve the dispute peacefully. The Commission of the EC offered to form a trilateral committee to hear the dispute hoping the panel of experts could help settle it. The offer came with two conditions the Slovaks and Hungarians would have to agree to: (1) the findings of the committee would have to be accepted; and (2) the committee would be allowed to operate without interference from either side.³⁴ The first condition found agreement by both sides but condition two was disputed by the Hungarians. The Hungarians believed that by agreeing to condition two, the construction of the dams could continue; the Hungarians wanted construction to cease during the committee's investigation. The Slovaks argued that continuing construction would be too costly to Slovakia in lost hydroelectric power generation. By late 1992 no agreement or settlement had been

³⁴ Summary of Judgment, International Criminal Court of Justice, (August 13, 2000)

reached. In October 1992, the case was referred to the International Court of Justice (ICJ) in the Hague.

The ICJ was presented four basic questions to consider: (1) was Hungary entitled to suspend and subsequently abandon the Nagymaros Dam Project; (2) was Czechoslovakia entitled to continue the Gabčíkovo Dam Project despite the abandonment of the Nagymaros Dam Project; (3) could Hungary legally renege on the 1977 Treaty with Czechoslovakia; and (4) what legal actions, if any, should be recommended?³⁵

C. ICJ RULING

On 3 March 1997, the ICJ began hearings on the Gabčíkovo-Nagymaros Dam Project at the Hague. At the request of both countries the Court visited the project area during 1-4 April 1997. The ICJ sent down its non-appealable ruling on 25 September 1997, stating the blocking and rerouting of the Danube at the Gabčíkovo Dam was illegal because it violated the terms of the 1977 Treaty which stated the border between Slovakia and Hungary would follow the original riverbed. The ruling also stated the 1977 Treaty, although agreed to by governments no longer in power, was still in effect. This implied the construction projects, the dams, canals and reservoirs were all legal. It was only the blocking and diversion of the main riverbed that was illegal because it altered the border between Slovakia and Hungary. Additionally, the ICJ ruling stated that each party must compensate the other for damage caused by the projects. This in effect changed nothing

³⁵ *ibid.*

in the original 1977 Treaty which stated both Slovakia and Hungary would split the cost in half. Slovakia would be financially responsible for the project at Gabčíkovo and Hungary would be responsible for the project at Nagymaros. Hungary, however, incurred the additional cost of demolishing the Nagymaros Dam, which began in December 1994 and was completed in late 1996. The ICJ ruling found both Slovakia and Hungary to be responsible and ordered them to renegotiate the original project taking the environmental impact into account before proceeding.³⁶

To date, the Gabčíkovo Dam has been completed and is in operation supplying approximately two percent of Slovakia's power requirements. Much of the water diverted from the main riverbed has been returned which has had a rejuvenating effect on the local environment and the environment down river.³⁷ With the rising cost of energy from fossil fuels and the negative impact of nuclear power, alternatives such as hydroelectric power will become more and more attractive. Bilateral negotiations are ongoing and involve not only the Slovakian and Hungarian governments but also a number of Non Governmental Organizations interested in not only the environmental impact of projects like Gabčíkovo-Nagymaros but how these projects can be undertaken with reduced environmental impact. To date however, no final resolution has been achieved. Slovakia wants a return on its investment and Hungary wants nothing more to do with the Soviet inspired project.

³⁶ *ibid.*

³⁷ TED Case Studies, Hungary Dam, (July 31, 2000), 7.

V. CONCLUSION

The Gabčíkovo-Nagymaros Dam Project encompasses several of the defining issues of the emerging topic of environmental security. In particular, conflicts over resource use, values, and international influence define the dispute and have defined resolution in the current political environment. As this case study has shown the ineffectiveness of environmental policy and international organizations involvement in dealing with them has left Slovakia and Hungary to act unilaterally and solely in their own interest rather than in a collaborative effort. Such a collaborative effort could be bilateral or involve third parties, but as of now no real progress has been made to work toward the common good.

One promising proposal has been put forth by a number of interested Non Governmental Organizations led by the WWF. The WWF has sought to protect the Danube environment while still allowing Slovakia to operate the hydroelectric plant at Gabčíkovo. This plan introduces venturi-like constrictions and building up the river bed south of Cunovo to raise the water level and increase the flow rate. The WWF contends that such a setup would provide the requisite water for Slovakia to operate the Gabčíkovo Dam while maintaining the necessary flow rate through the diverted portion of the natural river. This is one of the few proposals which seeks to address the concerns of both parties, and does not begin and end with the concept of zero-sum gain.

Both Slovakia and Hungary have legitimate arguments in their favor. Slovakia has invested too much money in the Gabčíkovo Dam project to cease construction. The power the project could generate is vital to Slovakia's energy policies. Hungary has

documented evidence of environmental degradation caused by the project, and a real concern about the efficacy of a Soviet inspired dam. Nevertheless, this case is a clear example of a shared resource that must be managed jointly. Slovakia's diversion of the river and altering the border between herself and Hungary violates such a partnership as well as does Hungary's intransigence. Unless a viable agreement can be made between the two countries the dispute will continue and potentially escalate. A solution to the dispute requires the leadership of both countries to move beyond Soviet era leadership and Cold War politics. Additionally it must involve the European Union of which Slovakia and Hungary may someday become members. This dispute may provide the European Union a dose of legitimacy given a successful resolution to the dispute.

Environmental security is not only a political issue but a military one as well. The Gulf War was a prime example of how the environment can be used as a military tool. When Iraq torched oil wells and dumped countless gallons of crude oil into the Arabian Gulf they effectively used the environment as a weapon. The devastating effects on the environment were obvious and the cost of cleaning up and repairing the damage immense. Damming a river upstream from a highly populated area cuts off that population from not only the drinking water it provides but also the transportation artery, as well as the source of water for manufacturing and power production. The Gabcikovo-Nagymaros Dam project is but one example of how altering the natural environment can lead to conflict. Had the Soviet Empire not been crumbling at the time of the dispute the use of force by the Soviet Union against Hungary to comply with the Treaty would have been likely.

With the changed political and economic landscape of Europe, international or regional organizations such as the United Nations and the European Union must be engaged with environmental security to maintain peace, order and prosperity in the region. The damage done by more than forty years of uncontrolled and unregulated polluting and altering of the environment can be undone. Today there are many governments and non-governmental organizations as well as industry leaders that are making a concerted effort to repair the damage done and prevent further damage by adopting environmentally friendly policies, regulations and procedures. However, unless the international community can agree on a set of laws that are enforceable by an international body, such as the ICJ, there will be no deterrent. The fine levied against Romania for illegally dumping cyanide serves little deterrence. The monetary cost of the fine to Romania was insignificant when compared to the savings incurred by the plant by not having to dispose of the cyanide properly.

This thesis has briefly described how the misuse or altering the environment can lead to transboundary conflict. It also describes how the proper use of international organizations can resolve or prevent further conflict. Environmental security is a global concern that requires global activism by the global community.

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