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LAST 50 YEAR'S CHRONOLOGY OF WATER RELATED CONFUSIONS AND WARS: EUROPE, ASIA AND THE SITUATION IN TURKEY

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ABSTRACT

Introduction

Water and its sources should be considered as a strategic tool. Therefore it has to be addressed in a context of security. As a matter of fact, water related issues are escalating in the world, especially in the recent decades.

Aim of the study

Water resources, which are one of the most significant key in determining the fate of the human society, cause confusions and wars whilst it becomes a subject of biologic threats. In this study, we aimed to examine these problems and shed light on recent history.

Material and Methods

We searched national and international literatures and news on the internet about water-related disputes and bioterrorist attacks to the water resources in Europe and Asia in the last 50 years. It was also evaluated what has happened in Turkey in the past.

Results

105 facts recorded happened in the last 50 years. 92 facts happened in Asia; 21 facts in Europe (The countries that land on two continents like Turkey and Russia were counted on both). Turkey is mentioned 5 times in the all facts.

Conclusions

The facts that Turkey is also in the region need to be analyzed well.

Key words: Water wars, bioterrorism, water crisis, confusion, conflict

INTRODUCTION

There are roughly 6 billion people in the world. This population uses 54% of renewable surface and groundwater resources. Considering the current circumstances just because of the population increase in 2025 this ratio would be 70%. Adding unconscious consumption of these natural resources to the increasing population can make it possible to say that there would be no water for ecological and environmental functions (1, 2). There are 1.4 billion people in the world devoid of hygienic water (3, 4). For centuries, the water, which is one of the key factors in determining the fate of societies was considered infinite in classical growth theory. But the contamination of natural resources and danger of extinction arise the result of urbanization and industrialization. Therefore, it also discussed the sustainability of policies about water (5). Increase of water-related issues show that water as a strategic tool that more need to be addressed in the security context. "Water wars" phenomenon has emerged because of water especially in some regions is a source of instability and causing tension (6). Experts predict the wars for oil in 20th century would be made for the water in 21st century (7). The USA's weekly news magazine 'U.S. News & World Report' in 2013 February report claims that the water war could be made in the manner of surprise. According to the article posted on AL Jazeera in 2012 strategy experts report that conflicts could arise due to water-related disputes from Israel to Central Asia (8).

To use of water resources as a tool and a goal in war and terrorism has a long past. Drinking water poisoning may occur and damage the population on downstream by demolished to dams. Attacks on water resources started 4500 years ago. The King of Lagash diverted water in the region to the boundary canals, drying up boundary ditches to deprive to city state of Umma. Another example of biologic war (or bioterrorism depends on understanding of "states" and "governments") is Solon the Athenian to poison to city of Kirra's drinking water in 600 BC (9). In this research, we shed light on recent history in order to examine water resources which are one of the most important factors in determining the fate of societies, causes confusions, wars and biologic threats. Because of the strategic importance of water resources, and its increasing inadequacy drawn attention to potential problems and results.

MATERIALS AND METHODS

In this study, we searched water-related conflicts and bioterrorist attacks to water resources in Europe and Asia occurred within the last 50 years. The global water crisis on two continents where our country also in (2), water importance within the scope of environmental security (6), water-borne wars, conflicts and terrorist attacks (7, 8, 9, 10, 11, 12) were listed in chronological order. We examined national and international literature and the news (14, 15) in the internet with the Google search engine. It has also evaluated what has happened in the Turkey's side in the past (10, 13). Events that arise results of water-related disputes classified and discussed in terms of "military tool", "political tool", "military target", "development dispute" and "terrorist and bioterrorist attacks".

RESULTS

105 events recorded of last 50 years. 92 of them happened in Asia, 21 of them in European countries (the countries that land on two continents like Turkey and Russia were counted on both). 7 of recorded events are military tool, 4 of them political tool, 29 of them development dispute, 11 of them military target, 22 of them terrorism and the rest of the events has done or attempt to intend of 2 or 3 of them. 20 of the events in Europe, 71 in Asia –considering the countries that their lands in both of Europe and Asia- 83 of them resulted in violence. 13 events that 1 of them in Europe and 13 of them in Asia, not resulted in violence or in the context of any conflict. 6 threatening events (4 in Europe, 4 in Asia) was recorded. Turkey repeated 5 times in all recorded events (10).

We examine events about Turkey in the literature. In 1990 when Atatürk Dam is completed Syria and Iraq protesting that give reason to Turkey has a weapon of war. In the middle of the 1990's at

that time President Turgut Ozal threatened them about restrict the flow of water if they do not stop supporting Kurdish rebels (11, 12). In 1991 the United Nations discuss with Iraq about cut off the flow of the Euphrates. This discussion remained a threat only but not resulted as an action (11). In 1992 it was reported that it was observed a lethal concentration of potassium cyanide in the Turkish Air Force's water tanks. The terrorist organization PKK undertook this attack (13). In April 2016 terrorist organization PKK terrorists bombing attack on drinking water line to 3 different regions in Mardin. As a result of that drinking water line has damaged (14). In November 2016 the terrorist organization PKK attacked in the drinking water catchment in Hatay and drinking water line has damaged (15).

Table 1. Water-related conflict that occurred between 1965-2016

Date-Place	Description	Basis of Conflict
1965-1966 Israel, Syria	To open fire on Jordan's water resources.	Military tool; Development dispute
1967 Israel, Syria	Israel occupied the West Bank and the Golan Heights.	Military target; military tool
1969 Israel, Jordan	Israel had a secret meeting with the USA when suspect that Jordan would raid.	Military target; Military tool
1970 China	Conflict took place because of water shortage.	Development dispute
1972 North Korea	The USA bombed the Red Delta.	Military target
1973 Germany	German biologist contaminated with anthrax bacilli to water resources.	Terrorism
1974 Iraq, Syria	Iraq threatened because of claiming that Tabka Dam reduce the water flow to Euphrates.	Military target; Military tool; Development dispute
1976 China	The tension about Euphrates continued.	Development dispute
1994 Iraq, Syria	There was a water shortage for many years because of the dam on Zhang River.	Development dispute; Military tool
1980-1988 Iran, Iraq	Iran flood inundated to Iraqi defense line by changing the riverbed that streaming from Iraq.	Military tool
1981 Iran, Iraq	Iran accused by bombing of the hydroelectric plant in Kurdistan.	Military target; Military tool
1982 Israel, Lebanon, Syria	During the siege Israel cut off the water supply in Beirut.	Military tool
1983 Lebanon	A shed was blown with placing the explosives in the water distribution vehicle.	Terrorism
1983 Israel	The government of Israel reported that poisoned the water in Galilee.	Terrorism
1986 North Korea, South Korea	They concern about that the Han River Dam could be used as a tool for ecological destruction or war.	Military tool
1990 Iraq, Syria, Turkey	Turkey threatened to Syria for supporting to Kurdish rebels.	Development dispute; Military tool

1991 Iraq, Kuwait, USA	Iraq destroyed to Kuwait's desalination capacity.	Military target
1991 Iraq, Turkey, UN	UN met with Turkey about the Euphrates for cutting off the flow to Iraq.	Military tool
1991 Iraq, Kuwait, USA	Coalition forces harm to water resources in Baghdad.	Military target
1991 Chine	A mortar attacked on new water facilities.	Development dispute
1991-2001 USA, Iraq	The USA operates a policy of destroy deliberately to Iraq's water systems.	Military target; Military tool
1991-2007 India	A court established for the irrigation right on Kaveri River.	Development dispute
1992 Turkey	Potassium cyanide found in the Turkish Air Force's water tank.	Terrorism
1992 Bosnia, Bosnian Serbs	Serbs cut off the water resources in Bosnia.	Military tool
1992 Chine	Canal of Zhang River has bombed.	Development dispute
1992 Moldova, Russia	Attacked on the turbines in hydroelectric power plants.	Military target
1993 Iran	Iran proposed to poison the water resources for to respond to possible west attack.	Terrorism
1993 Yugoslavia	Serbian/Yugoslav military forces bombed the Cetina River Dam.	Military target; Military tool
1993-2003 Iraq	Iraq poisoned to Shiite Muslims' water resources.	Military tool
1994 Moldova, Russia	Moldova accused to contaminated Russian water resources.	Terrorism
1997 Singapore, Malaysia	Malaysia threatened to Singapore to cut off the water resources.	Political tool
1998 Tajikistan	Tajik guerrilla commander threatened to bombed to the Karakum Canal unless his political demands are met.	Terrorism; Political tool
1998-1999 Kosovar	Serbs polluted water resources.	Terrorism; Political tool
1999 Yugoslavia	Belgrade reported that NATO planes targeted a hydroelectric plant during the Kosovo operation.	Military target
1999 Bangladesh	People who were protesting electricity and water cuts got hurt.	Development dispute; Political tool
1999 Yugoslavia	NATO cut off Belgrade's water resources.	Military target
1999 Yugoslavia	Yugoslavia refused to clean up the wreckage of the war unless financial aid for reconstruction has provided.	Political tool

1999 Kosovar	Serbs' engineers closed the water system in Pristina.	Political tool; Development dispute; Terrorism
1999 Chine	Conflict occurred because of the limited water resources.	
1999 East Timor	Militia killed the independence supporters and threw the water wells.	Military target; Terrorism
1999 Yemen	Conflict occurred between the villages about the right to use water resources.	Development dispute
2000 Kyrgyzstan, Kyrgyzstan, Uzbekistan	Kyrgyzstan cut the Kazakhstan's water due to Uzbekistan's unpaid debts until the coal delivery.	Development dispute
2000 France, Belgium, Holland	Chemical factory employees poured 5 thousand liters sulfuric acid on to Maas River.	Terrorism
2000 Afghanistan	Water resources exploded with violent conflicts.	Development dispute
2000 India	To enter into an armed fight with the protesters for change the direction of the water in Kankavati Dam.	Development dispute
2000 Chine	Authorized cut off the water resources because of the unrest to use of water.	Development dispute
2001 Israel, Philistine	Palestinians broke the water pipes in the West Bank.	Terrorism; Military target
2001 Pakistan	Mutiny occurred because of the water shortage.	Development dispute; Terrorism
2001 Macedonia	Stopped the water flowing to Kumanova because of the conflict between Albanian and Macedonian forces.	Terrorism; Military target
2001 Chine	Wastewater dam were protested because of the idea about that cause the water pollution.	Development dispute
2001 Philippines	A group in the country threatened to the city that majority were Christian to poison their water resources.	Terrorism
2001 Afghanistan	USA forces bombed to hydropower plant.	Military target
2002 Nepal	Hydroelectric power center exploded and the water resources were destroyed.	Political tool
2002 Italy	Group of people claimed that would contaminate to water resources with cyanide.	Terrorism
2002 India	Conflict took place during the sharing irrigation water.	Development dispute
2002 India	The violence continued about water allocation.	Development dispute
2003 Jordan	Iranian agents were arrested on charges of poisoning the water resources.	Terrorism
2003 Iraq, USA	Water resources destroyed during the USA occupation of Iraq.	Military target

2003 Iraq	Water pipes bombed.	Terrorism
2004 Pakistan	Water wells were damaged and destroyed.	Terrorism
2004 India	Underground water pipes exploded with handmade explosives.	Terrorism
2004 Chine	Farmers conflict with police about dam construction.	Development dispute
2004 Chine, USA	Pentagon claimed that begin to accept military systems which possible to hit the China's important targets.	Military target
2004 Gaza Strip	USA stopped 2 water development projects for punishing to Palestine.	Terrorism; Development dispute
2004 India	Conflict occurred with farmers who protest to allocating irrigation canal.	Development dispute
2005 Ukraine	Kiev was threatened about 40 vehicles loaded with explosives placed on the hydropower station.	Terrorism
2006 Yemen	Conflict occurred with between 2 tribes and the police.	Development dispute
2006 Chine	A person who protested against the Pubugou Dam was executed.	Development dispute
2006 Sri Lanka	Tamil Tiger rebels cut off the water resources.	Military tool; Military target; Terrorism
2006 Israel, Lebanon	Hizbullah struck to wastewater facilities in Israel. Israel destroyed Lebanon's many of water resources.	Military target; Terrorism
2007 India	Thousands of farmers conflict with police because of the Hirakud Dam.	Development dispute
2007 Afghanistan	Conflict occurred between NATO forces and Taliban in the Kajaki Dam.	Military target; Terrorism
2007 Israel, Philistine	Israel imposed sanctions to Palestine about increasing water scarcity.	Development dispute
2008 Chine, Tibet	Chine began to political restriction against Tibet the 'world's water tower'.	Military target; Development dispute
2008 Pakistan	Taliban threatened to blow up the Varsak Dam.	Terrorism
2009 Chine, India	Chine accused to India for under control to part of Tibet.	Development dispute; Military tool
2009 India	A small gang killed a family for draw water from municipal pipe illegally.	Development dispute
2009 India	Conflict occurred between police and a group which protesting the water cut.	Development dispute
2009 North Korea, South Korea	North Korea caused the flood in the Imjin River when released 40 million m ³ water from Hwanggag Dam.	Political tool
2010 Pakistan	Conflict occurred between 2 tribes about irrigation water.	Development dispute; Military tool

2010 Afghanistan	Many people killed because of the explosive that concealed in the water tank.	Terrorism
2010 Pakistan	Conflict occurred in tribe region about water dispute.	Development dispute
2010 India	Violence and conflict occurred because of irregular water supply and water cut.	Development dispute
2010 India	Many people got hurt during the donation of soil and water for power plant.	Development dispute
2011 Yemen	Government military destroyed many of the water resources.	Military target
2011 Israel, Philistine	Israel destroyed 9 water tanks in Palestine.	Development dispute; Military target
2011 Israel, Philistine	Israel destroyed the water wells.	Development dispute; Military target
2011-2012 Syria	Political conflicts have worsened because of years of drought.	Development dispute; Military target
2012 Libya	Kaddafi, cut off the water resources of the capital.	Military tool
2012 Afghanistan	Deliberate attack occurred to a school's water supply.	Terrorism
2012 Afghanistan	Freshwater resources bombed.	Terrorism
2012 Afghanistan	Militia members who defending the Machalgho Dam were executed.	Military target; Terrorism
2012 India	Tried to prevent water release from 2 dams in Kaveri River.	Development dispute
2012 India	Conflict occurred for water and surrounded water tanks during the summer.	Development dispute
2012 India, Pakistan	Pakistani militants attacked to the water systems.	Development dispute; Military target
2012 Tajikistan, Uzbekistan	Uzbek stopped the gas supply in response to a hydroelectric dam that it would destroy the water resources.	Development dispute
2012 Kirgizstan, Tajikistan, Uzbekistan, Turkmenistan, Kazakhstan	Tension rise with the thought that the dams flow could affect water resources.	Development dispute
2012 Syria	The main pipeline which providing water to Aleppo was damaged during the civil war.	Military target
2012 Syria	Rebels surrounded the hydroelectric dams in Tishrin.	Military target
2012 Indonesia	Conflict occurred between 2 villages because of a water resource.	Development dispute

2015 France	Security in water systems improved for a result of the terror attacks in Paris.	Terrorism
2016 Turkey	Terrorist attacked to drinking water catchment in Hatay.	Terrorism
2016 Turkey	Mardin's drinking water line bombed by terrorists.	Terrorism

DISCUSSION

Water is an important part of industrial development, health, disposal to waste, transport, energy and food production, agricultural development, ecological and social activities (6). Water has a big importance in agricultural production and required to maintain the life. Because of that it's the main element of the policy. 2 states have gotten into fight for water sharing in Mesopotamia 4500 years ago. It shows how important water-related policies are (16). Water has become inadequate because of the factors such as increasing population, pollution and global warming. Therefore the water becomes an environmental security issue. States, which realized the importance of water, have begun to search to take or control the water resources (6). Disputes over to own and control the water supplies, different specifications of water basins, different significance due to the owner country geopolitical location, cause sharing issues between the owner countries. Because of these problems, countries set on agreements for trans boundary waters, today (17).

Water-related violence has a long past. Water continues to be regional and global problem. At the beginning and the middle of the twentieth century in the reported cases water become associated with local disputes, terrorism, and local violence (18). Today is less of the available water resources and these resources also increasingly diminishing. It becomes a reason that violence policies are carried out in water sharing. Water-related conflicts occurred especially in the Middle East. Conflicts occur between the countries of this region owning the water resources and with impact the other reasons. As we establish in this study, 34 events of water-related conflicts and wars occurred in the Middle East in the last 50 years. Looking at this entire picture, make it easy to predict that the first region where water wars would happen is going to be in the Middle East (16).

Most of the events in Turkey occurred for the purposes of terrorism (3 out of 5). Especially in recent years, the effect of increased terrorist activities in this situation is enormous. Especially in drinking water catchments-related protective measures are taken important for public health.

The importance of water resources at least as great as oil (19). This importance causes of to follow water war policies. In historical process events in the Middle East reveals this situations (20). To prevent this war must be created a water policy war must be created for effective use of water resources and taking the necessary precautions. Otherwise water-related conflicts wouldn't affect only relevant countries in the region but also affect the international community (16). Water becomes a part of the main parameters of causing violence but at the same time it could finish this violence (21). If we do not take precaution about water use more serious problems would arise in the future. Water, which has a great importance of life, would become a source of serious threat for humanity.

CONCLUSIONS

Water is an integral part of life and is an important part of social activities such as development in the field of industry, waste disposal, transport, energy and food production. Besides the fact that it is so important for humanity, it is also quite precious for the security interest of countries, economic development and sustainability of assets. The idea about water cause to wars arose because of limitation of water resources and other water-related issues. Worrying thoughts has increased in the last 20 years about the war would emerge between countries especially take advantage of trans boundary water together. Water is a serious safety element because of the strategic importance. Because of the limited resources, water gets more involved in the states politics. If necessary precautions are not taken, it definitely will become an element of national and international

conflicts. Academic and military scientist should better understand conflicts, which might arise from various resources and environmental problems, and they must take necessary precautions to avoid these conflicts. Protection against biological attack can happen only provision of the necessary preparations against these factors. National and regional control system should be established against the diseases that can occur with like this attacks. And case definitions should be prepared against the potential biological agents.

At this stage, Turkey's path should produce a strategy against possible developments from the conflicts of the past, and manage to forward-looking approaches with new geopolitical developments. It seems to be the most accurate approach is to try to resolve water-borne problems, before they become crisis when military precautions with diplomatic activities are taken. When procure the regional cooperation with necessary precautions are taken, it will reduce the risks of possible conflicts. If we think about the present strategic importance of water then future importance of it will increase even further, events must be analyzed well where they happen in the geography, including Turkey. This situation will contribute more accurately to perform of government's forward-looking policies about the water resources.

Competing Interests

All authors hereby have declared that no competing interests exist.

Authors Participations

The literature reviews, writing and spell-check parts were made on the common basis by the authors, and were read and approved at the final stage.

Literature review, writing and control parts have been done by the all authors together, and they read and approved the final manuscript.

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