

15.0 (HIGH SCHOOL) “RISING TENSIONS OVER THE NILE RIVER BASIN” MINI-UNIT

National Curriculum Alignment:

The following National Curriculum Standards are addressed by completing all of the activities associated with the Rising Tensions over the Nile River Basin mini-unit

NL-ENG.K-12.1

Reading for Perspective: Students read a wide range of print and non-print documents to build an understanding of texts, of themselves, and of the cultures of the United States and the world.

NL-ENG.K-12.3

Evaluation Strategies: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

NL-ENG.K-12.5

Communication Strategies: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

NL-ENG.K-12.6

Applying Knowledge: Students apply knowledge of language structure, language conventions, media techniques, figurative language, and genre to create, critique, and discuss print and non-print texts.

NL-ENG.K-12.7

Evaluating Data: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources to communicate their discoveries in ways that suit their purpose and audience.

Science Grades 6 - 12

NS.9-12.6

Science in Personal and Social Perspectives: Personal health/Populations, resources, and environments/Risks and benefits

Social Sciences Grades 6-12

Geography Grades K - 12

NSS-G.K-12.1

The World in Spatial Terms: Understand how to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.

NSS-G.K-12.2

Places and Regions: Understand the physical and human characteristics of places/ Understand that people create regions to interpret Earth's complexity/ Understand how culture and experience influence people's perceptions of places and regions.

NSS-G.K-12.3

Physical Systems: Understand the physical processes that shape the patterns of Earth's surface/ Understand the characteristics and spatial distribution of ecosystems on Earth's surface.

NSS-G.K-12.4

Human Systems: Understand the characteristics, distribution, and migration of human populations on Earth's surface/ Understand the characteristics, distribution, and complexity of Earth's cultural mosaics/ Understand the patterns and networks of economic interdependence on Earth's surface/ Understand the processes, patterns, and functions of human settlement/ Understand how the forces of cooperation and conflict among people influence the division and control of Earth's surface.

NSS-G.K-12.5

Environment and Society: Understand how human actions modify the physical environment/ Understand how physical systems affect human systems/ Understand the changes that occur in the meaning, use, distribution, and importance of resources.

NSS-G.K-12.6

Uses of Geography: Understand how to apply geography to interpret the present and plan for the future.

Civics Grades 9-12**NSS-C.9-12.1**

Civic Life, Politics, and Government: What is government? Why are government and politics necessary? What purposes should government serve?

NSS-C.9-12.4

Other Nations and World Affairs: What is the Relationship of the United States to Other Nations and to World Affairs?/ How is the world organized politically?/ How has the United States influenced other nations and how have other nations influenced American politics and society?

NSS-C.9-12.5

Roles of the Citizen: What are the responsibilities of citizens?/ How can citizens take part in civic life?

NSS-WH.5-12.1

Era 1: The Beginnings of Human Society

NSS-WH.5-12.2

Era 2: Early Civilizations and the Emergence of Pastoral People

Economics Grades 6-12**NSS-EC.9-12.1**

Productive Resources: Scarcity

NSS-EC.9-12.3

Allocating Goods and Services: Comparing the benefits and costs of different allocation methods in order to choose the method that is most appropriate for some specific problem can result in more effective allocations and a more effective overall allocation system.

NSS-EC.9-12.4

Positive and Negative Incentives: Acting as consumers, producers, workers, savers, investors, and citizens, people respond to incentives in order to allocate their scarce resources in ways that provide the highest possible returns to them. Responses to incentives are predictable because people usually pursue their self-interest/ Changes in incentives cause people to change their behavior in predictable ways/ Incentives can be monetary or non-monetary.

NSS-EC.9-12.6

Gain from Trade: A nation pays for its imports with its exports/When imports are restricted by public policies, consumers pay higher prices and job opportunities and profits in exporting firms decrease.

:: High School

:: Rising Tensions over the Nile River Basin: A Global Commons Case Study

:: Level of difficulty and duration: **

Objective

Students will analyze the concept of a global commons dilemma through an evaluation of a primary source document.

Lesson

Students will read The Middle East Media Research Institute Inquiry and Analysis Series –No. 165 February 27, 2004: Rising Tensions over the Nile River Basin by Dr. Nimrod Raphaeli and respond in writing to the Reading for Comprehension questions that follow.

Materials

The Middle East Media Research Institute article

Post Activities

Reading for Comprehension questions and “Tragedy of the Water Commons” Lesson Plan

The article “Rising Tensions over the Nile River Basin” illustrates a global commons dilemma specifically as it relates to water. The article communicates why several African nations are in conflict regarding the use of the Nile River as a water source. Read the article carefully and complete the Reading for Comprehension questions.

“RISING TENSIONS OVER THE NILE RIVER BASIN”

Source: The Middle East Media Research Institute
Inquiry and Analysis Series - No. 165 February 27, 2004

Introduction

The Nile River is the longest river in the world. From its major source, Lake Victoria in east central Africa, the White Nile flows generally north through Uganda and into Sudan where it meets the Blue Nile in Khartoum, which rises in the Ethiopian highlands. The Nile traverses almost 6,700 kilometers (4,169 miles) from its farthest sources of the headwaters of the Kagera River in Burundi and Rwanda to its delta in Egypt on the Mediterranean Sea. [1]

The Nile is shared by ten countries – Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda – with a combined population of about 300 million, about 160 million of whom live within the boundaries of the Nile Basin. The ten countries that share the Nile waters include some of the world’s poorest, with annual per capital income of less than \$250. [2]

In recent months, tensions have been rising over the waters of the Nile. In preparation for the African summit meeting of African heads of state to be held in Libya next week, the ministers of water representing the riparian countries have decided to put the subject of the 1929 Nile Water Agreement on the summit’s agenda.

President Hosni Mubarak chaired a cabinet meeting in Cairo to discuss the issues. The communiqué issued after the meeting did not say what Egypt would do in the face of a persistent demand for reallocating the Nile waters, and whether Mubarak himself would attend the summit meeting. It vaguely referred to Egypt’s readiness to provide training, technical assistance, “and help in procuring funding for projects that benefit all the countries of the Basin,” in the framework of respecting the shares established by the existing agreement. [3] A couple of days earlier, the Egyptian government daily Al-Gomhouriya wrote that the demands by some of the Nile Basin countries for reallocating water shares is a matter of concern to Egypt which requires quick intervention to kill any initiative that would reduce the water supply to Egypt. [4]

The following is an overview of tensions regarding the Nile River:

The Nile Water Agreement of 1929

The Nile Waters Agreement (NWA) over the allocation of its waters between Egypt and Great Britain (which represented Uganda, Kenya, Tanganyika [now Tanzania] and the Sudan) was concluded on November 7, 1929 in Cairo by an exchange of letters between the Egyptian Prime Minister and the British High Commissioner in Egypt. The agreement allocated 48 billion cubic meters per year to Egypt as its acquired right and 4 billion cubic meters per year to the Sudan. These allocations were later increased to 55.5 billion cu. meters and 18 billion cu., respectively, under a 1959 bilateral agreement between these two countries that allowed for the construction of the Aswan Dam. Apart from Ethiopia, which had a government in place, the NWA was made before the other Nile Basin countries gained their independence.

The agreement stated that no works would be undertaken on the Nile, its tributaries, and the Lake Basin that would reduce the volume of the water reaching Egypt. It also gave Egypt the right to “inspect and investigate” the whole length of the Nile to the remote sources of its tributaries in the Basin.

This right “to inspect and investigate,” which was tantamount to a veto power over any water or power project, has in recent years become moot, as all the former colonies on the Nile Basin have become independent nations and are not likely to readily agree to such encroachment on their sovereignty by Egypt. Indeed, some of them have begun to nibble on the NWA by initiating water projects that threaten to reduce the volume of water available to Egypt. Egypt considers any change in the agreement as a strategic threat and has repeatedly threatened to use all means at its disposal to prevent the violations of the agreement. The other Nile Basin African countries consider the agreement as a relic of a colonial era which no longer reflects their needs and aspirations and hence it should be annulled. Countering this argument, Sherif Al-Mousa, head of the Middle East Program at the American University in Cairo, argues that the Nile water agreement should be treated the same way as the boundaries of most Nile Basin countries which were established by colonial powers, and are recognized under international law. [5]

The Pressures for Change

Population pressures, frequent draughts, and increasing soil salinity have intensified the demands by the Nile Basin countries to renegotiate the 1929 agreement. Not deterred by Egyptian reluctance to negotiate the 1929 agreement, or even Egyptian threats, and constrained by financial hardships, some Nile Basin countries are determined to implement projects that would tap into the sources of the Nile.

The 1959 agreement between Egypt and Sudan, which increased the water allocations to themselves while completely ignoring the interests of the other riparian countries such as Tanzania, Kenya and Ethiopia has, in retrospect, weakened the Egyptian argument about inviolability of the NWA.

The Nile Basin Initiative

To reduce the potential for conflict, and with the help of the World Bank, the Nile Basin Initiative was launched in 1999 as a transitional arrangement until a permanent framework is in place. It is guided by a shared vision “to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.”

The Nile Basin Initiative notwithstanding, member countries are forging ahead with their own projects and challenges. Droughts are difficult to forecast, even in the beginning of the crop season. Building dams to store water is not unlike a bank savings account, to be used at a time of need. While Egypt has secured its agriculture with the building of the Aswan Dam, it has been reluctant, if not belligerent, when other countries on the Nile Basin sought similar solutions.

Ethiopia Asserts Rights to the Blue Nile

The **Ethiopian Minister of Water Resources** announced his country’s intentions to develop close to 200,000 hectares (ha.) of land through irrigation projects and construction of two dams in the Blue Nile Sub-basin. He further stated that these projects would be the first phase of forty-six projects which Ethiopia proposed to execute along with ten joint projects which Egypt and Sudan proposed. The Egyptian Ambassador to Ethiopia confirmed.

Egypt’s commitment is to the utilization of the Nile waters for the benefit of all riparian countries. However, the Egyptian commitment was conditional. All projects must benefit both upstream and downstream countries, provided these projects do not lead to a reduction of the waters reaching Egypt.

The Ethiopian Minister of Water Resources retorted that the agreement to participate in the Nile Basin Initiative reserves Ethiopia’s right to implement any project in the Blue Nile Sub-basin unilaterally, at any given time. He charged that the 1959 agreement between Egypt and Sudan impedes sustainable development in the basin and called for its nullification. [6]

From the Egyptian perspective, any change in the volume of its water could have devastating effects on Egypt. The vast majority of Egyptians live in a valley which is about 4 percent of the Egyptian territory, and 95 percent of Egypt's water resources are derived from the Nile.

Tanzania Challenges Egypt

In early February 2004, Tanzania launched a project to draw water from Lake Victoria to supply the Shinyanga region. The project calls for the construction of about a 100 mile long inland pipeline at an initial cost of \$27.6 million, to be constructed by a Chinese engineering company. To mitigate the anticipated Egyptian reaction, Tanzania announced that the pipeline was designed to provide drinking water to its thirsty population rather than irrigate agricultural land. Tanzania's population of 35 million has suffered from frequent droughts, desertification, and soil erosion. In fact, Tanzania was the first riparian country which, upon its independence in 1961, declared the 1929 agreement invalid. [7]

Nevertheless, Egypt expressed its irritation with the Tanzanian project, arguing that under the 1929 agreement it has the right to veto any project - agricultural, industrial, or power - that could threaten its vital interests in guaranteeing its annual share of the river waters. While Egypt is handling the issue diplomatically, Egyptian officials stressed that "the diplomatic dialogue does not mean that Cairo does not consider any number of other options, if necessary." [8] In diplomatic parlance, "other options" do not exclude the use of force. Tanzania has not budged. The Deputy Permanent Secretary in the Tanzanian Ministry of Water and Livestock Development, Dr. C. Nyamurunda, said that Tanzania's sentiments about the legality of the water agreement are well known. He emphasized that "other countries also believe that the treaties [NWA] were illegal but they are to cooperate in negotiations, although they are not restricted from using the waters of the Nile." [9]

Another Challenge from Kenya

Similarly, in response to a threat from Kenya that it was considering withdrawing from the 1929 agreement, the **Egyptian Minister of Irrigation and Water Resources Mahmoud Abu Zeid** said: "Egypt considers the withdrawal of Kenya from this agreement as tantamount to official declaration of war [emphasis added] and a threat to its vital interests and national security." A Kenyan weekly quoted the Egyptian minister declaring in Addis Ababa that Kenya could be subject to sanctions by Egypt and the other eight members of the Nile River Basin Agreement. He said Kenya's position violates international law and customs "and we will not agree to it." [10]

The **Kenyan deputy foreign minister M. Watangola** repeated his country's demand for a revision of this historic agreement because Kenya was not consulted prior to its being signed. He said eight Kenyan rivers flow into Lake Victoria, which is the main source of the Nile waters. [11]

Water for Oil

A senior Kenyan parliamentarian suggested that the Nile water should be sold to Egypt and Sudan for oil. He said that the time has come to replace the Nile agreement with a new agreement to allow the members to benefit from the Nile's waters. He added: "We have presented our natural resources to Egypt and Sudan free without them doing anything in return. We need to sell to them as they sell to us." The Egyptian treated the idea as "stupid" because the two countries have vested rights, rather than customers who would buy the water. [12]

Egypt Accuses Hidden Fingers

In addition to Tanzania and Kenya, Ethiopia and Uganda are also demanding the abrogation of the 1929 agreement and a bigger share of the Nile waters. Egypt accuses "hidden fingers known to the Egyptian side [which] are openly inciting the traditional allies of Egypt in the Nile Basin to annul the agreement, arguing that it is incompatible with the population and political developments that have transpired in the last 75 years." [13] The anonymous senior Egyptian official who has made the allegation about the "hidden fingers"

stressed that any change in the agreement was inconceivable and warned that “any infringement of the agreement would suggest that the African countries do not respect regional obligations.” [14]

Egypt's Alternatives

To deal with the threat to its vital oil supply Egypt has four alternatives. Some are not mutually exclusive:

- Reduce waste through improved irrigation system.
- Price water at market rates.
- Maintain the status quo as long as feasible.
- Resort to the use of force.

Reduce Waste Through Improved Irrigation System

According to a study by the World Bank, 96.44 per cent of the economically active population in Egypt is engaged in agriculture. It is the highest percentage in the Middle East, with Morocco in second place with 92.61 percent of active population in agriculture. By contrast, the corresponding ratios for Tunisia and Lebanon are 60.87 and 10.35 percent, respectively. As a result, much of the water is used in agriculture, which contributes proportionately a small percentage to GDP. In Egypt, 88% of the water is consumed in agriculture which, as a sector, contributes only 14 percent to GDP, while 8 percent of water used in industry contributes 34 per cent of GDP. The report suggests that “from a narrow macroeconomic perspective, rationale of justifying the allocation of water to agriculture over industrial and other sectors is weak.” [15]

Price Water at Market Rates

While the region remains one of the most water-scarce regions in the world, the cost of water for irrigation is set at below cost recovery levels. Egyptian agriculture is entirely dependent on irrigated land. The government provides irrigation water free, except of cost recovery of on-farm investment projects. Annual irrigation subsidies are estimated at \$5 billion. In Egypt, irrigation subsidies are often rationalized as a means of offsetting low farm prices controlled to keep down urban food prices. [16] Water pricing and subsidies are such that they lead to waste in agriculture and provide little incentive for conservation techniques.

Maintain the Status Quo

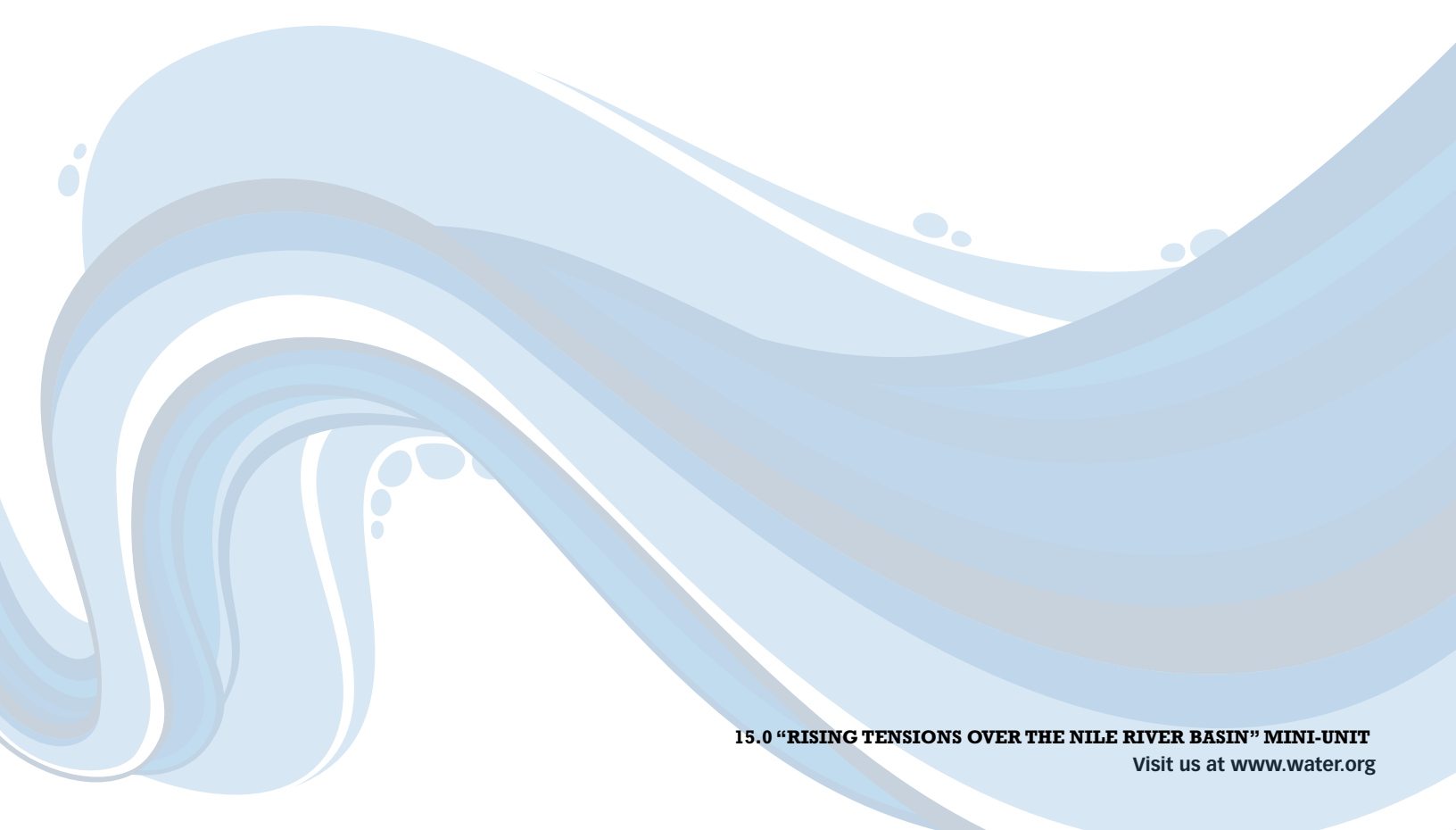
Egypt's third option is to seek a status quo while tolerating some changes on the margin. To do so, Egypt must continue to maintain a pro-American and pro-Western orientation to discourage them and organizations controlled by them, such as the World Bank, from financing costly water projects such as dams or power projects in any of the riparian countries, which they themselves cannot finance through internally-generated resources.

Resort to the Use of Force

The last and least likely alternative is to resort to the use of force to uphold Egypt's right to exercise the veto power on activities that it deems dangerous to its national interests. Egypt's saber rattling cannot be taken too seriously, certainly not by the African countries themselves. Indeed, as one Egypt daily pointed out, “the harsh language adopted by Abou Zeid ... might not be working...” [17] Not only does Egypt lack the military capacity to strike at countries two thousand miles outside its borders, but it will be hard pressed to justify a military action to enforce the provision of a 75-year old agreement concluded to satisfy colonialist considerations and priorities but dissatisfy the needs of the countries upstream. A Kenyan father of two, who owns eight ponds for fish farming, was quoted as saying: “If the Egyptians try to invade Kenya for the sake of its water we are ready to die for our rights. Kenya must forget the Nile agreement and return to the commercial consumption of the Lake Victoria Lake.” [18]

Reading for Comprehension Questions:

- 1:: Which ten African nations share access to the Nile River?
- 2:: What issue, regarding the Nile, was put on the African Summit agenda in February of 2004?
- 3:: In what ways did the Nile Water Agreement of 1929 give Egypt an advantage over other African nations?
- 4:: What pressures intensified the demand for the Nile Basin countries to re-negotiate the 1929 agreement?
- 5:: Identify and explain the four suggested alternatives for Egypt.
- 6:: Why would Egypt been considering or threatening the use of force against other African nations? Why was Egypt's use of force unlikely?
- 7:: Ethiopia and Tanzania announced plans to construct dams and pipelines. According to the article, the Egyptian perspective at that time was, "any change in the volume of its water could have devastating effects on Egypt". Describe the position of the leaders of Ethiopia and Tanzania.
- 8:: If you were an Ethiopian Minister of Water how would you have responded to threats from Egypt designed to prevent you from accessing Nile water?



Answers:

- 1:: Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda**
- 2:: The Nile Water Agreement of 1929**
- 3:: Other countries could not build structures that would reduce the amount of water flowing into Egypt. Also, the agreement gave Egypt the right to “inspect and investigate” the entire river.**
- 4:: Population, frequent droughts and increasing soil salinity**
- 5:: (see article for descriptions/descriptions may vary)**
 - 1. Reduce waste through an improved irrigation system**
 - 2. Begin charging market rates for water**
 - 3. Maintain the status quo**
 - 4. Resort to the use of force**
- 6:: Egypt wanted to maintain the dominant access to the Nile provided by The Nile Water Agreement of 1929. Egypt was unlikely to use force because it did not have the military capability to take on such a large effort and ultimately would not be able to justify the validity of the 1929 agreement.**
- 7:: The Ethiopian Minister of Water Resources stated that Ethiopia has the right to implement any project in the Blue Nile Sub-basin at any time. The Deputy Permanent Secretary in the Tanzanian Ministry of Water and Livestock Development questioned the legality of the water agreement and stated that Tanzania is not restricted from using Nile waters.**
- 8:: Answers will vary.**

:: **High School**
:: **"Tragedy of the Water Commons"**
:: **Difficulty and duration: *****

Objective

Introduce students to the concept of The Tragedy of the Commons and apply the concept to address the global water crisis. Student will gain insight into the global water crisis and interpret information illustrating the lack of access to freshwater in many developing nations.

Lesson

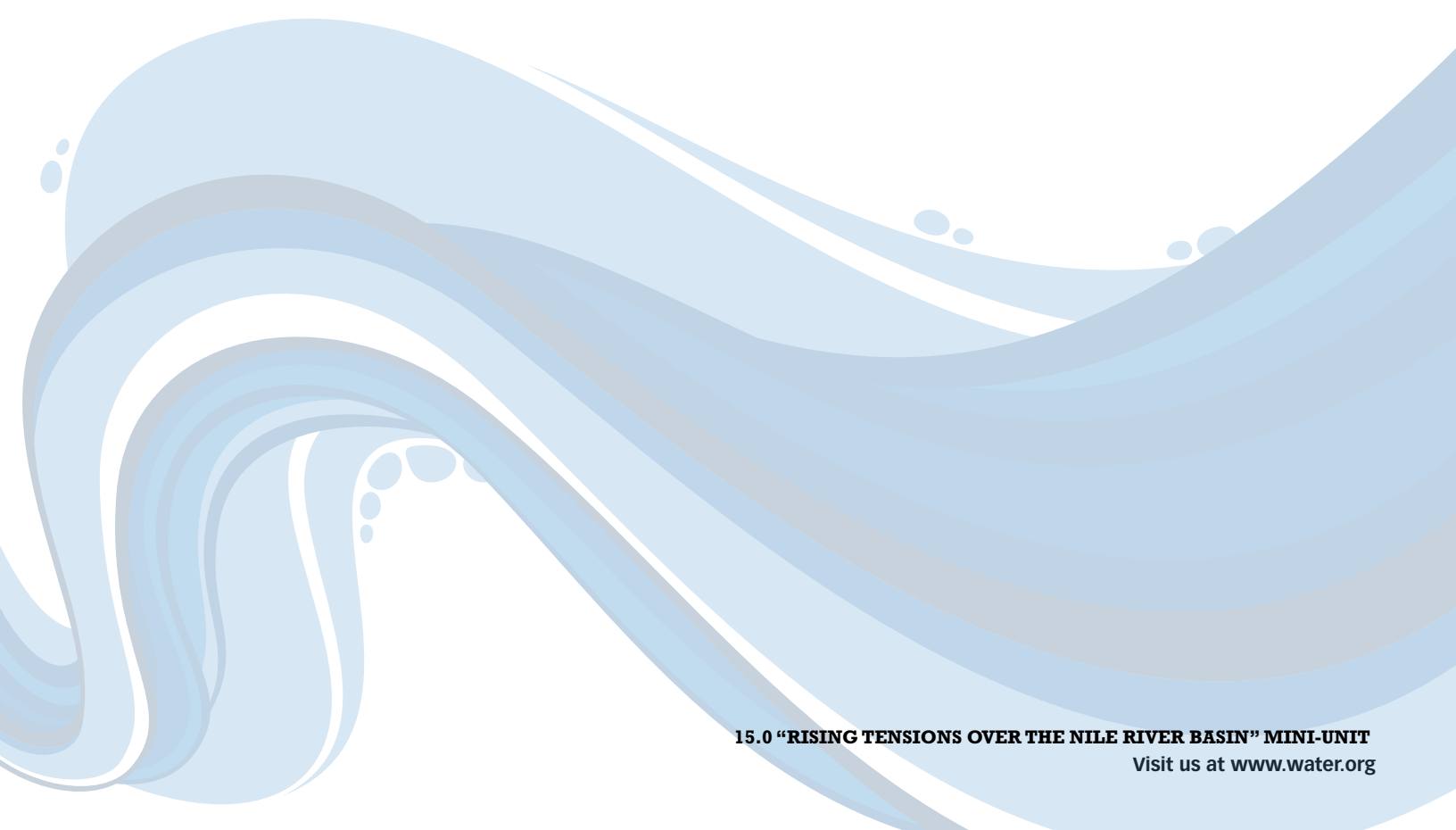
At tables of four, students will review materials that will help them better understand the global water crisis.

Background

In 1968, environmentalists coined a term or concept called the Tragedy of the Commons. The tragedy being the notion that any resource that is open to everyone – such as the air, rivers and lakes, or the ocean – will eventually be destroyed because everyone can use the resource but no one is responsible or fully accountable for preserving it. When people are not compelled to preserve resources for the welfare for future generations, the Tragedy of the Commons occurs.

Materials

Before the activity begins you must set-up the room so that four students can each sit around a table. In the middle of the table, for each group, the teacher will place a dish (this represents the lake) containing varying numbers of orange goldfish crackers. Eighteen crackers are suggested for one of the groups. Sixteen crackers are suggested for two or three of the groups. Ten crackers are suggested for one of the groups. Eight crackers are suggested for one of the groups. Place four sets of chopsticks (they represent the fishing apparatus) at the table.



1:: Read the following to students: Each one of you represents the head of a family that is starving. In order for your family to survive, you must catch enough fish for them to eat. The only food source is a small local lake which can hold up to 16 fish. Each group will be given a pre-determined, differing number of fish to represent access to, or the lack of access, to water as a resource.

Once a “year” you will get a chance to fish and each time you fish you may take 0, 1, 2, 3, or 4 fish from the lake. It is your choice how many fish you take, however, if you only take one fish, your family will starve. If you take more than 2 fish, you can sell them for a profit. The fish in your lake will reproduce once a year. Keep the fish that you “catch” in front of you. (You will be able to eat them later.)

2:: At the end of each year, the teacher will visit each table and add more fish to the lake when they reproduce. They simply double each year. If any family has starved then they obviously cannot fish the next year.

3:: Instruct students not to communicate while fishing

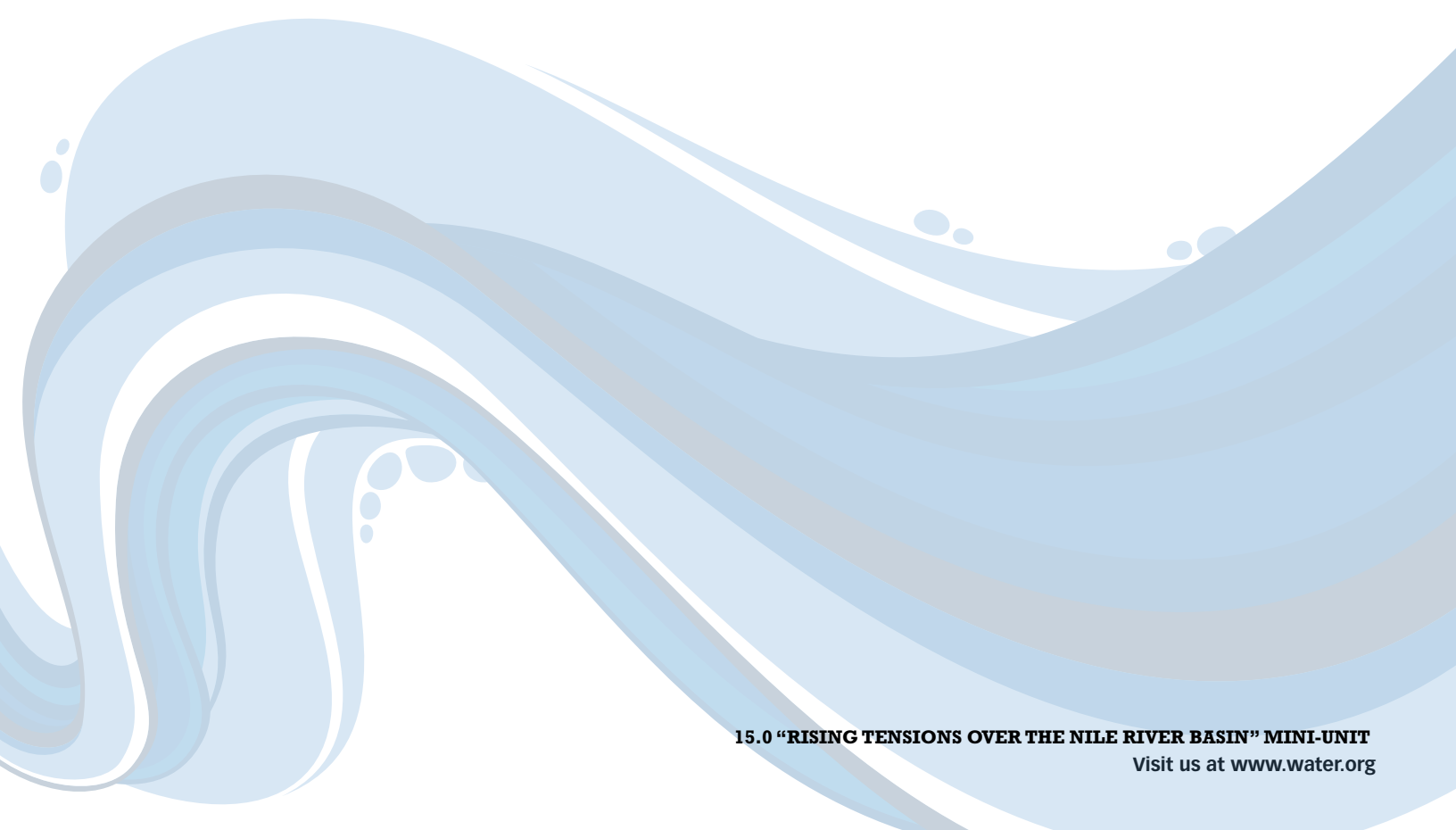
4:: Have the student fish for 5 “years” and make sure that they fill in the Data Table for 1st game after each round. You should control each and every round telling them when to start and stop.

5:: After the first game have students answer questions 1 and 2 in the discussion questions.

6:: The students have still been unable to talk to each other during fishing so now you begin game #2. Remind students not to communicate with each other.

7:: Once the game is complete, have students answer the discussion questions.

8:: Facilitate a class discussion focusing on the questions provided. Extend this to have students look at how the U.S and other countries use water as a global common.



FISH DATA TABLE 1st game

NAME OF LAKE: _____ BEGINNING # OF FISH: _____

	Number of fish in the lake [after reproduction]	Number of fish caught per person	Number of fish caught per year [by everyone]
YEAR ONE			
YEAR TWO			
YEAR THREE			
YEAR FOUR			
YEAR FIVE			
TOTAL			

FISH DATA TABLE

2nd game

NAME OF LAKE: _____ BEGINNING # OF FISH: _____

	Number of fish in the lake [after reproduction]	Number of fish caught per person	Number of fish caught per year [by everyone]
YEAR ONE			
YEAR TWO			
YEAR THREE			
YEAR FOUR			
YEAR FIVE			
TOTAL			

Tragedy of the Water Commons" Discussion Questions

- 1:: Did anyone in your group take too many fish? How did that make you feel? Did everyone try to take as many as possible? Why or Why not? Does society reward those with the "most" or greatest access to resources?
- 2:: Did your group start out at a disadvantage with fewer fish or with an advantage of more fish than other groups? How did the number of fish your group started with affect the team's strategy?
- 3:: How might a lack of access to safe, clean drinking water place individuals and communities at a disadvantage in their daily lives?
- 4:: Is it possible to maximize the number of fish caught/person AND the number of fish remaining in the pond at the same time? Why or Why not?
- 5:: The game is structured to illustrate why many people/corporations/farms/governments, etc. have abused their privilege of access to common natural resources such as freshwater. Does the game successfully demonstrate this principle? Why or why not?
- 6:: In Game two how did your strategy change, if at all? Does it make a difference to know what the rewards are?
- 7:: What can people do to create access to safe, clean drinking water for countries or regions who "begin the game with fewer fish" or are at an apparent disadvantage to other more developed regions?
- 8:: Did anyone sacrifice the # of fish, for the good of the community? Why or why not? Does society ever reward that type of person?
- 9:: What infrastructures are in place to protect water as a global common?
- 10:: How might nations reward one another for protecting water as a valuable global commons resource?

ABOUT WATER.ORG

Water.org is a non-profit organization whose founders have transformed hundreds of communities in Africa, South Asia and Latin America by providing access to safe water and sanitation. Founded by Matt Damon and Gary White, Water.org works with local partners to deliver innovative solutions for long-term success. Its microfinance-based WaterCredit Initiative is pioneering sustainable giving in the sector. Water.org's life-saving work is made possible by the support of its donors, including the Open Square Foundation, the Pepsico Foundation, OnexOne and the Michael & Susan Dell Foundation. To learn more visit www.water.org.



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