

Turkey's Need for Dams

OVERVIEW & OBJECTIVES	GRADES	
<p>This inquiry lesson asks students to determine if Turkey's dam building is beneficial or harmful. Students investigate the question through readings, videos, pictures, and a webquest using an online lesson from WeExplore and conclude by completing a RAFT assignment. The teacher may choose to reduce the extent of this comprehensive lesson by eliminating the number of resources and handouts that students access and complete.</p>	8 th & 9 th	
<p>This lesson is based on a two-week study tour of Turkey. My goal was to analyze the importance of dams for Turkey's growing economy and population. Dams are crucial to Turkey's agricultural production, allowing dry regions to produce a great variety of crops through irrigation. They are also important for hydroelectric power and to aid the country's economic development. Prime Minister Erdogan recently set a national goal for Turkey to be one of the world's top 10 economies by 2023, the 100th anniversary of the Republic of Turkey. Turkey is currently ranked 17th, and dam creation and operation will play a vital role in the country's economic success.</p>	<th>TIME</th>	TIME
<p>The online tool, WeExplore, provides an avenue for the teacher or students to construct a personalized investigation to share with others. All of the pictures, except the satellite images and the picture of Ataturk Dam, were taken during the tour of Turkey.</p>	3 classes	
<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Identify the physical and human characteristics of Turkey on a map. • Describe the government of Turkey's goals in relation to dam construction and use. • Effectively use geospatial technology tools to analyze data from a variety of resources. • Explain the impact of dams on irrigation, power, and flood control. • Examine the importance of dams to a country's development. • Compare and contrast the advantages and disadvantages of dam construction and use. • Determine whether building dams in Turkey is more beneficial or more harmful. • Describe how the distribution and use of water in the Middle East affects a country using Turkey as an example. 	<th>REQUIRED MATERIALS</th> <ul style="list-style-type: none"> ✓ Computer Internet access with projector ✓ Computer Internet access for students ✓ Online Lesson: "Experiences Into the Classroom" from WeExplore http://www.we-explore.com/entry/?teamId=547 ✓ Atlas ✓ Handouts: "Pre- and Post-Assessment"; "Turkey's Need for Dams: WeExplore Graphic Organizer"; "DSI Web Quest"; "Picture Analysis"; "Ilisu Dam Project: Readings and Video"; "To Build or Not to Build: Pro and Con"; "RAFT Summative Assessment" ✓ Teacher <u>Guides: "Key: Turkey's Need for Dams: WeExplore Graphic Organizer"; "Key: DSI Web Quest"</u> 	REQUIRED MATERIALS

MINNESOTA SOCIAL STUDIES STANDARDS & BENCHMARKS

8th GRADE

Standard 1 People use geographic representations and geospatial technologies to acquire, process and report information within a spatial context.

8.3.1.1.1 Obtain and analyze geographic information from a variety of print and electronic sources to investigate places or answer specific geographic questions; provide rationale for its use.

Standard 2 Geographic inquiry is a process in which people ask geographic questions and gather, organize and analyze information to solve problems and plan for the future.

8.3.1.2.1 Formulate questions about topics in geography; pose possible answers; use geospatial technology to analyze problems and make decisions within a spatial context.

Standard 4 The meaning, use, distribution and importance of resources changes over time.

8.3.4.10.5 Describe how the distribution and development of oil and water resources influence the economy and societies of Southwest Asia and North Africa.

Standard 6 Geographic factors influence the distribution, functions, growth and patterns of cities and human settlements.

8.3.3.6.4 Describe how the physical and environmental features of Southwest Asia and North Africa affect human activity and settlement.

9th GRADE

Standard 1 People use geographic representations and geospatial technologies to acquire, process and report information within a spatial context.

9.3.1.1.2 Apply geographic information from a variety of print and electronic sources to interpret the past and present and plan for the future; provide rationale for using specific technologies for each application.

Standard 2 Geographic inquiry is a process in which people ask geographic questions and gather, organize and analyze information to solve problems and plan for the future.

9.3.1.2.2 Use geospatial technologies to develop plans for analyzing and solving local and regional problems that have spatial dimensions.

Standard 9. The environment influences human actions; and humans both adapt to and change, the environment.

9.3.4.9.1 Analyze the interconnectedness of the environment and human activities (including the use of technology), and the impact of one upon the other.

SUGGESTED PROCEDURE

Opening

The teacher may begin with a pre-assessment of students' understanding by administering the Agree/Disagree Pre-Assessment.

Development

Begin the lesson with an orientation to Turkey and its need for dams by examining a map of Turkey in an atlas or creating a map of Turkey, with its major physical features identified and climate noted. Students should also identify where major cities are located as well as Turkey's neighbors. Then, using the atlas or created map, answer questions including:

- Where is the capital located?
- Where is the largest city located?
- Where are the 5 largest cities located?
- Where are major population areas located?
- Who are Turkey's neighbors?
- Turkey is located on what 2 continents?
- Turkey is mainly a peninsula surrounded by what water bodies?
- Is Turkey considered more rugged or flat? Where is it rugged and where is it flat?
- Where is the Anatolia Plateau?
- Two of the world's major rivers begin in Turkey, the Tigris & Euphrates. Where are they located?
- What is the major climate of Turkey?

Ask: Why are dams being constructed? Why are dams constructed in those regions? Students examine a map of Turkey's current and proposed dams comparing it with the map located in an atlas from "Turkish Dam Boom Threatens Anatolian Rivers" at International Rivers <http://www.internationalrivers.org/resources/turkish-dam-boom-threatens-anatolian-rivers-7502>. Click on the map for proposed and existing dams to understand Turkey's drive to construct over 1000 dams in ten years. You may also choose to identify the dams by regions at http://en.wikipedia.org/wiki/List_of_dams_in_Turkey

This lesson is designed so that students may independently go through the WeExplore slides individually, with a partner, or in small groups while completing the handouts (choice A). Alternatively, students may investigate Turkey's need for dams as a class and complete each handout working individually, with a partner, or in small groups (choice B). Both choices include all the resources and handouts of readings, videos, pictures, and webquest.

A.

If students work independently, all questions with website links are provided on the handout, "Turkey's Need for Dams: WeExplore Graphic Organizer". Students begin by going directly to "Expedition Overview" (slides #7-9) from WeExplore at <http://www.we-explore.com/entry/?teamId=547>. (Note: Zoom Out to read the text below the photos.) When this handout is complete, students complete "DSI Web Quest", "Picture Analysis", "Ilisu Dam Project: Readings and Video", "To Build or Not to Build: Pro and Con", and the "RAFT Summative Assessment" to fully complete this inquiry lesson.

B.

If the class is completing the lesson together, then use the directions below. If the teacher places students in groups, then each group would have different portions of the handouts and groups would jigsaw their results. (Students may address all or some of the elements of Turkey's need for dams including readings, videos, picture analysis and the webquest.)

1. Begin at "Expedition Overview", slides #7-9, of WeExplore at <http://www.we-explore.com/entry/?teamId=547> and answer the first 3 questions on the primary handout, "Turkey's Need for Dams: WeExplore Graphic Organizer".
2. Video. Show the video "Turkey's Present Economy (2013)" and have the students record facts on the handout, "Turkey's Need for Dams". This video (6:31) is a montage of great photos; it summarizes the country's economy and presents opportunities for foreign investment. The link is also on slide #10 of WeExplore.
3. Students answer the next question on the handout, "Turkey's Need for Dams" describing Turkey's policies on water issues using slide #11 of WeExplore.
4. Students explain the purpose and importance of dams on the handout, "Turkey's Need for Dams" using slides #12-14 of WeExplore.

5. Map. Students examine the map on slide #15 and explain that Turkey has many streams and rivers that arise from its rugged terrain.
6. Students read about the “Southeastern Anatolia Project” (GAP) at slide #16 and answer the question on the handout, “Turkey’s Need for Dams”.
7. Video. The “Deriner Dam Overview” video (1:44) is a brief, non-narrated video that highlights the dam’s energy production with powerful images linked at slide #17. Students answer the questions about the dam using the handout, “Turkey’s Need for Dams”.
8. Video. Students watch the first 5 minutes of the video, “Deriner Baraji-Artvin”, at slide #18 to answer the questions on the handout, “Turkey’s Need for Dams”. The teacher may choose to show the entire video (43:34) from the Discovery Channel’s Build It Bigger Series to understand dam construction details.
9. Satellite Photos. Students examine the Harran Plains satellite photos shown on slide #19 and answer the comparison question on the handout, “Turkey’s Need for Dams”.
10. Pictures. Next, students examine the sequence of pictures of the Ataturk Dam, Turkey’s largest dam, as shown on slide #20 and answer the question on the handout, “Turkey’s Need for Dams”.
11. Webquest. At this point, students may complete the “DSI Webquest”, which will aid their understanding of Turkey’s physical geography, need for dams, and the Turkish government’s goals in building dams.
12. Photographs. Irrigation is vitally important to Turkey’s agricultural production and several pictures show examples of irrigated crops (16 slides). Students complete the “Picture Analysis” handout.
13. Readings and Video. The next 3 slides provide links to the Ilisu Dam readings and the video. Students also access these resources via the handout, “Ilisu Dam Project: Readings and Video”. The first brief reading presents the pro side to build the dam; the second brief reading presents the con side to build the dam; the video (4:55) presents both sides to build the dam.
14. Video. The class views the video, “Turkey: More Than You Know” at <https://www.youtube.com/watch?v=abpHbceT9sM> (5:23) linked at the end of WeExplore. The video highlights turkey’s economy in a montage of video clips with text.
15. Students complete the handout, “To Build or Not to Build: Pro and Con” in preparation for the RAFT summative assessment.
16. Students complete the RAFT summative assessment, which individually asks students to take a role, consider the audience, use the identified format, and address the topic to present the pro or con side to build dams in Turkey.

By the end of this lesson, students will be able to thoughtfully address the following questions: Are dams crucial to Turkey’s growing economy? Is dam building critical to develop energy independence, agricultural production, expand agribusiness, control flooding, maintain consistent water sources, and create skilled jobs? Are dam building and their benefit greater than the loss of towns, agricultural lands, and ancient artifacts and damage to the environment? Does dam building ignore the needs and concerns of neighboring countries, particularly Iraq and Syria?

Closing

1. Students share their RAFT assignment with the class or in small groups.
2. The teacher administers the post-assessment of students’ understanding using the Agree/Disagree Post-Assessment.

Extensions

1. Students do online research to answer the following questions:
 - What is the most up-to-date status you can get on the Ilisu Dam project?

- How are the people who were forced to move dealing with the change?
- What is your stance on controversial construction projects such as this?
- What should be the deciding factor(s) when developing the environment?

2. Students examine the proposed Bosphorus Canal, which would alleviate traffic on the Bosphorus Strait by providing another access route.

- What is it?
- Draw a map of it.
- What are the pros and cons to the Project?

3. Alakpru Dam is a project that would bring water from Turkey to Cyprus.

- What is it?
- Draw a map of it.
- What are the pros and cons to the Project?

4. Students construct their own online experience to assess the strengths and weaknesses of Turkey's need for dams or of a particular project in Turkey to meet Prime Minister Erdogan's goals. Students may also construct an online experience detailing Turkey's role as a bridge to Europe and the Middle East. Students may access the template for "Experiences Into the Classroom" from WeExplore at <http://we-explore.com/>

5. Introduce Turkey's human and physical characteristics by showing brief explanatory videos (4:00 each) for students who struggle. Consider showing "The Landscape" and "The Seas" for information about the country's location, major cities, seas and mountains. Go to "Discovering Turkey: Experiencing Turkey" and click "Teens" from the Turkish Embassy in Washington, D.C. at <http://kids.mfa.gov.tr/>

Assessment

Pre-Assessment

"Turkey's Need for Dams: WeExplore Graphic Organizer" Handout

Class discussion

"DSI Web Quest" Handout

"Picture Analysis" Handout

"Ilisu Dam Project: Readings and Video" Handout

"To Build or Not to Build: Pro and Con" Handout

"RAFT Summative Assessment" Handout

Post-Assessment

WEBSITE RESOURCES

"Turkey's Need for Dams" at WeExplore

<http://www.we-explore.com/entry/?teamId=547>

This online lesson provides links to the readings, videos, pictures and resources for the lesson. WeExplore is an online tool that personalizes information and resources on a topic.

"Deriner Dam" from DSI (General Directorate of State Hydraulic Works) at YouTube (1:44)

<https://www.youtube.com/watch?v=F6WbHZ5t9vk>

This brief, non-narrated video highlights the dam's energy production.

"Deriner Baraji-Artvin" from Build It Bigger series at Discovery Channel (43:34)

<http://player.vimeo.com/video/58613786>

This lengthy video explains the building of the Deriner Dam including construction details.

“DSI Webquest” from “Land and Water Resources” at DSI: General Directorate of State Hydraulic Works

<http://www2.dsi.gov.tr/english/topraksue.htm>

This link from DSI summarizes Turkey’s topography and the importance of dam construction and utilization. Students answer questions by reviewing the web page.

“Harran Plains” from “Just Add Water: A Modern Agricultural Revolution in the Fertile Crescent” at Earth Observatory

<http://earthobservatory.nasa.gov/Features/HarranPlains/>

This link has before and after satellite imagery of the Harran Plains as a result of dam building.

“Flooding of Land in Turkey: View From the Ground” from Lecture at University of Georgia

<http://www.gly.uga.edu/railsback/CTW2.html>

This link at bottom of the page contains satellite images and photos of the Ataturk Dam.

“Mission and Duties” at DSI: General Directorate of State Hydraulic Works

<http://www2.dsi.gov.tr/english/about/goreve.htm>

This link summarizes the role and responsibilities of the organization.

Ilisu Dam Reading #1: “Ilisu Dam” from Republic of Turkey Ministry of Foreign Affairs

<http://www.mfa.gov.tr/ilisu-dam.en.mfa>

This article provides the “pro” side to the Ilisu Dam building.

Ilisu Dam Reading #2: “New Dam in Turkey Threatens to Flood Ancient Archeological Sites” from National Geographic News

<http://news.nationalgeographic.com/news/2014/02/140221-tigris-river-dam-hasankeyf-turkey-iraq-water/>

This article provides the “con” side to the Ilisu Dam building. It includes a map, pictures, and the Ilisu Dam Project video.

Ilisu Dam Project Video: “Turkish Dam Will Submerge 12,000-Year-Old City” from National Geographic at YouTube (4:55)

<http://www.youtube.com/embed/XNQoRyAoZx4>

This video presents both sides of the Ilisu Dam Project, including the effect on Iraq.

“Turkey’s Present Economy (2013)” sponsored by the Republic of Turkey Prime Ministry of Investment Support and Promotion Agency at YouTube (6:31)

<http://www.youtube.com/embed/tj5sP3xSuZM>

This video is a montage of great photos of Turkey and summarizes the country’s economy and presents opportunities for foreign investment.

“Turkey: More Than You Know” from UK Trade & Investment at YouTube (5:23)

<https://www.youtube.com/watch?v=abpHbceT9sM>

This video is a montage of video clips with brief text summarizing Turkey’s economic leadership.

Turkish Cultural Foundation

<http://www.turkishculturalfoundation.org/pages.php?ID=1>

This is the home page of the Turkish Cultural Foundation.

“Turkey’s Policy on Water Issues” at Republic of Turkey Ministry of Foreign Affairs

http://www.mfa.gov.tr/turkey_s-policy-on-water-issues.en.mfa

This link is the official response to Turkey’s policies on water issues and its impact on neighbors.

“Dams and Development” at Republic of Turkey Ministry of Foreign Affairs

<http://www.mfa.gov.tr/dams-and-development.en.mfa>

This link summarizes the purpose and importance of dams.

Turkish Dam Boom Threatens Anatolian Rivers” from International Rivers

<http://www.internationalrivers.org/resources/turkish-dam-boom-threatens-anatolian-rivers-7502>

This website has a map of current and proposed dams in Turkey.

“List of Dams in Turkey” from Wikipedia

http://en.wikipedia.org/wiki/List_of_dams_in_Turkey

This link lists dams in each region of Turkey.

Additional Website Resources

“Experiences Into the Classroom” from WeExplore

<http://we-explore.com/>

This is the central template for WeExplore that the teacher or students can use to construct their own online document with text, videos, maps, pictures, and links to other resources.

“Facts and Figures” from Invest in Turkey

<http://www.invest.gov.tr/en-US/turkey/factsandfigures/Pages/TRSnapshot.aspx>

This link provides a summary of Turkey’s information and an interactive map.

“Turkey” from CIA World Factbook

<https://www.cia.gov/library/publications/the-world-factbook/geos/tu.html>

This website provides overview information about Turkey.

“Dams and Politics in Turkey: Utilizing Water, Developing Conflict” at Middle East Policy Council

<http://mepc.org/journal/middle-east-policy-archives/dams-and-politics-turkey-utilizing-water-developing-conflict>

This article from Spring 2010 discusses the potential problem of Turkey’s control of the Tigris and Euphrates Rivers leading to conflict with Iraq and Syria by providing a scenario and background information.

“Southeastern Anatolia Project (GAP), Turkey” at Environmental Justice Atlas

<http://www.ejatl.org/conflict/southeastern-anatolia-project-gap-turkey>

This link provides a succinct explanation of the project, outcomes and impact of GAP, as well as other environmental issues.

“Ataturk Dam (GAP)” at All About Turkey

http://www.adiyamanli.org/ataturk_dam.htm

This website provides information about GAP.

Pre- and Post-Assessment

Directions: Check Agree if you agree with the statement. Check Disagree if you disagree with the statement.

Agree	Disagree	Statement	Agree	Disagree
		Oil is the central resource that shapes the Middle East.		
		Iraq has more oil reserves than Saudi Arabia.		
		Water has been the main cause of conflict in the Middle East.		
		Today, current events in the Middle East focus more on oil than water.		
		Wars in the future will be fought over water, not oil.		
		Early civilizations formed in the Fertile Crescent due to having access to water.		
		Dams have minimal impact on the environment.		
		Dams do not impact locations downstream.		
		Dams only impact locations upstream.		
		Countries should be able to build dams on any river that passes through their country with no concern for surrounding neighbors.		
		Dams are not built where ancient artifacts and civilizations once flourished.		
		The goal of the Southeast Anatolia Project (building 22 dams) is to focus solely on getting electricity to a region that is lacking access to electricity.		
		The benefits of a new dam will not impact the standard of living of the people around it.		
		The building of dams is a quick process since the main resource used is concrete.		
		The building of dams has become a global concern.		

Turkey's Need for Dams: WeExplore Graphic Organizer

Questions	Answers
<p>Read the WeExplore "Expedition Overview"</p> <p>1. Economy of Turkey's global ranking? 2. Goal for 2023? 3. Why 2023?</p>	<p>1. 2. 3.</p>
<p>1. When was the Turkish Cultural Foundation founded? 2. What are two goals of TCF?</p> <p>http://www.turkishculturalfoundation.org/pages.php?ID=1</p>	<p>1. 2. 3.</p>
<p>Why do you think organizations like this are important?</p>	
<p>List 3 facts about Turkey's economy after watching the video.</p> <p>"Turkey's Present Economy (2013)" (6:31) http://www.youtube.com/embed/tj5sP3xSuZM</p>	<p>1. 2. 3.</p>
<p>Describe Turkey's policies on water issues according to the Ministry of Foreign Affairs.</p> <p>(Conclusion section) http://www.mfa.gov.tr/turkey_s-policy-on-water-issues.en.mfa</p>	<p>1. 2. 3.</p>
<p>What are 3 major purposes of dams?</p> <p>Star (*) the one you feel is most important.</p> <p>http://www.mfa.gov.tr/dams-and-development.en.mfa</p>	<p>1. 2. 3.</p>
<p>Why are dams important to development? (2 slides)</p> <p>(Dams and Development slides) http://www.mfa.gov.tr/dams-and-development.en.mfa</p>	<p>1. 2. 3.</p>

<p>Make 2 observations about Turkey's rivers by examining the map.</p> <p>http://www2dsi.gov.tr/english/topraksue.htm</p>	<p>1.</p> <p>2.</p>
<p>1. What is the Southeast Anatolia Project (GAP)?</p> <p>2. What is its major goal?</p> <p>http://www.mfa.gov.tr/turkey_s-policy-on-water-issues.en.mfa</p>	<p>1.</p> <p>2.</p> <p>How many dams? ____ Power plants? ____ Irrigation for _____</p>
<p>1. How large is the Deriner Dam?</p> <p>2. In how many years will it pay for itself?</p> <p>http://www.youtube.com/embed/F6WbHZ5t9vk</p>	<p>1.</p> <p>2.</p>
<p>1. Why is the Deriner Dam so important?</p> <p>2. Why was the Deriner Dam so difficult to build?</p> <p>(Watch first 5 minutes of video)</p> <p>http://player.vimeo.com/video/58613786</p>	<p>1,</p> <p>2.</p>
<p>Examine the Harran Plains satellite pictures and identify what you see based on the 5 Themes of Geography.</p> <p>http://earthobservatory.nasa.gov/Features/HarranPlains/</p>	
<p>Examine the Ataturk Dam pictures and identify what you see based on the 5 Themes of Geography.</p> <p>http://www.gly.uga.edu/railsback/CTW2.html</p>	
<p>Why do you think dam building is important for the country of Turkey?</p>	

DSI Web Quest

Directions: Answer the following questions by going to this website:

<http://www2.dsi.gov.tr/english/about/goreve.htm>

1. What is the proper title of this organization?
2. What is their Turkish acronym?
3. When did this organization start?
4. What is their mission?
5. What are some of their responsibilities under law?

6. Click on the “Land and Water Resources” tab from the above link, or go directly to this link:

<http://www2dsi.gov.tr/english/topraksue.htm>

Questions	Answers
What is the location of Turkey?	Latitudinal: Longitudinal: Relative:
What countries does Turkey border?	
What waterways does Turkey border?	
How many lakes are in Turkey?	
How many large dam reservoirs? Which is the largest?	1. 2.
Explain Turkey's streams & rivers (1 st bullet point under the rivers map)	

What is the climate of Turkey?	
<p>1. What is the pattern of precipitation in Turkey?</p> <p>2. Where is the driest region in Turkey?</p> <p>3. How many inches of rain does this region get per year? (Convert mm to inches). Compare this with how many inches of rainfall MN gets per year.</p>	<p>1.</p> <p>2.</p> <p>3. mm: inches:</p>
<p>What 2 problems exist?</p> <p>(Under "Water Resources versus Water Consumption Needs of Population")</p>	<p>1.</p> <p>2.</p>
<p>1. How many dams exist in Turkey?</p> <p>What organization has the majority control of the dams?</p> <p>(Under "Hydraulic Structures in Turkey")</p>	<p>Large:</p> <p>Small:</p> <p>Under Construction:</p> <p>Total:</p>
<p>By looking at the table, what are 4 ways the water from dam projects are used?</p> <p>How much energy do the dams produce?</p> <p>What is a Gwh?</p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>Current dams? _____</p> <p>Dams under construction? _____</p> <p>Total? _____</p>
<p>Examine the chart to identify how the "ultimate Goals by 2030" compare to the "In Operation" state?</p> <p>(Under the section "Development of Irrigation, Hydropower, and Water Supply Sectors in Turkey")</p>	<p>Development of Irrigation</p> <p>Hydroelectricity</p> <p>Domestic and Industrial Use</p>

<p>1. In conclusion, why are these goals important to DSI and the country of Turkey?</p>	<p>1.</p>
<p>2. How will reaching these goals impact the economy?</p>	<p>2.</p>
<p>3. In turn, how will it affect the standard of living for the people of Turkey?</p>	<p>3.</p>

Picture Analysis

What are your thoughts on the picture showing the vegetation comparison from the same location on either side of the road?

What do you see in the photographs? (people, objects, activities)

1. People:

2. Objects:

3. Activities:

Based on what you have observed in the pictures list 3 things you might INFER from the pictures.

1.

2.

3.

Using your geographic inquiry skills, construct 2 questions based on your analysis of the pictures.

1.

2.

Where can you find the answers to the questions? _____

Do your best to answer them.

1.

2.

After analyzing the photos, explain the impact dams and irrigation have on agriculture in Turkey.

Ilisu Dam Project: Readings and Video

Ilisu Dam Project Reading #1

<http://www.mfa.gov.tr/ilisu-dam.en.mfa>

Summary:

Personal Response/Reaction:

Ilisu Dam Project Reading #2

<http://news.nationalgeographic.com/news/2014/02/140221-tigris-river-dam-hasankeyf-turkey-iraq-water/>

Summary

Personal Response/Reaction

Ilisu Dam Project Video (4:55)

<http://www.youtube.com/embed/XNQoRyAoZx4>

Summary:

Personal Response/Reaction:

Ilisu Dam Project: Readings and Video

Ilisu Dam Project Reading #1

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Summary

Personal Response/Reaction

Ilisu Dam Project Video (4:55)

<http://www.youtube.com/embed/XNQoRyAoZx4>

Summary:

Personal Response/Reaction:

To Build or Not to Build: Pro and Con

Directions: Complete the chart below based on your gained knowledge and answer the questions

Pro: Build the Dams	Con: Do Not Build the Dams

What is your stance on building dams?
(Gist Statement: 25 words)

What did your partner say? (Pair Share)

What did your group say? (Square Share)

Be prepared for class discussion on To Build or Not to Build and have your thoughts/ideas organized:

To Build or Not to Build: Pro and Con

Directions: Complete the chart below based on your gained knowledge and answer the questions

Pro: Build the Dams	Con: Do Not Build the Dams

What is your stance on building dams?
(Gist Statement: 25 words)

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Be prepared for class discussion on To Build or Not to Build and have your thoughts/ideas organized:

RAFT Summative Assessment

Role	Audience	Format	Topic
Minister of Forestry and Water Affairs (Pro)	Citizens of Turkey	National Newspaper Article (persuasive article, follow essay guidelines, 1 page Times font, double spaced)	Construction of the Ilisu Dam. Explain how it is pertinent for irrigation, hydropower, water source, construction jobs, and higher standard of living for the region and nation.
Construction Manager (Pro)	Members of the city	Presentation 10 slides outlining how new houses, streets, businesses, and infrastructure will raise the standard of living (visuals encouraged)	Outline building plans. Highlight new features and infrastructure that will replace outdated buildings and infrastructure of the city that will be submerged.
Local Historian (Con)	Members of the community, national and global attention	Speech 60 seconds, video or live in class (graphs, pictures, charts, etc. encouraged; be sure to rehearse)	Anti-dam building view. Explain the loss of artifacts from civilizations dating back 12,000 years ago.
Local Business Owner (Con)	Local community, the citizens of Turkey, and global awareness	Poster/Pamphlet (visual must be in color; graphs, pictures, charts, etc. encouraged)	Denounce dam building. Explain the relocation of the city after it is submerged by the reservoir and increased cost of living.

Key: Turkey's Need for Dams: WeExplore Graphic Organizer

Questions	Answers
<p>Read the WeExplore "Expedition Overview"</p> <p>1. Economy of Turkey's global ranking? 2. Goal for 2023? 3. Why 2023?</p>	<p>1. 17th 2. Top 10 3. 100th anniversary of Republic of Turkey</p>
<p>1. When was the Turkish Cultural Foundation founded? 2. What are two goals of TCF?</p> <p>http://www.turkishculturalfoundation.org/pages.php?ID=1</p>	<p>1. Established January 1, 2000 2. Promote & preserve Turkish culture & heritage 3. Support education for disadvantaged students - Support research, documentation & publication in the humanities - Support preservation of cultural heritage abroad - Help build cultural bridges to other countries</p>
<p>Why do you think organizations like this are important?</p>	
<p>List 3 facts about Turkey's economy after watching the video. "Turkey's Present Economy (2013)" (6:31) http://www.youtube.com/embed/tj5sP3xSuZM</p>	<p>1. 2. 3.</p>
<p>Describe Turkey's policies on water issues according to the Ministry of Foreign Affairs.</p> <p>(Conclusion section) http://www.mfa.gov.tr/turkey_s-policy-on-water-issues.en.mfa</p>	<p>1. Water is a catalyst for cooperation not a source of conflict 2. Economic development & spread of prosperity to all in region leads to peace & good neighbors 3. Global water shortage solution needs a holistic approach with technical & financial support by developed countries, regional & national organizations & financial institutions - SE Anatolia Project (GAP) providing electricity, water for irrigation, & leads to regional prosperity</p>
<p>What are 3 major purposes of dams?</p> <p>Star (*) the one you feel is most important. http://www.mfa.gov.tr/dams-and-development.en.mfa</p>	<p>1. Meet demands for water for human consumption, irrigation & industry 2. Prevent floods 3. Generate hydroelectric power - Increase river depth to improve navigation - Provide recreation & fishing</p>
<p>Why are dams important to development? (2 slides)</p> <p>("Dams and Development" slides) http://www.mfa.gov.tr/dams-and-development.en.mfa</p>	<p>1. Demand for water increasing 2. Water storage facilities needed 3. Dams provide efficient use of water - Dams store water in a reservoir until needed - Spreads prosperity to all people by providing drinking water & sanitation, generating more electric energy, increasing agricultural production, & creating new employment opportunities</p>
<p>Make 2 observations about Turkey's rivers by examining the map. http://www2dsi.gov.tr/english/topraksue.htm</p>	<p>1. Turkey is rich in streams and rivers 2. Many rivers rise & empty into seas within Turkey's borders</p>

<p>1. What is the Southeast Anatolia Project (GAP)? 2. What is its major goal?</p> <p>http://www.mfa.go.tr/turkey_s-policy-on-water-issues.en.mfa</p>	<p>1. Regional project to harness water resources of Euphrates & Tigris rivers 2. Double Turkey's agricultural production - New opportunities to develop agro-industries</p> <p>How many dams? <u>22</u> Power plants? <u>29</u> Irrigation for <u>17 million hectares</u></p>
<p>1. How large is the Deriner Dam? 2. In how many years will it pay for itself? "Deriner Dam" from at DSI (General Directorate of State Hydraulic Works) (1:44) https://www.youtube.com/watch?v=F6WbHZ5t9vk</p>	<p>1. 6th highest in world; 3rd highest in Europe; highest dam of Turkey; 2. 7 years</p>
<p>1. Why is the Deriner Dam so important? 2. Why was the Deriner Dam so difficult to build?</p> <p>(Watch first 5 minutes of video) "Deriner Baraji-Artvin" (43.34) http://player.vimeo.com/video/58613786</p>	
<p>Examine the Harran Plains satellite picture and identify what you see based on the 5 Themes of Geography http://earthobservatory.nasa.gov/Features/HarranPlains/ WITH 1993 on top photo, but missed 2nd August 24 2002</p>	<p>Same location; same regional boundaries on right & left, but top and bottom extend with greater vegetation on 2nd photo More green vegetation within area More water on east More agriculture Perhaps more roads Perhaps more population Infer that landscape has changed</p>
<p>Examine the Ataturk Dam pictures and identify what you see based on the 5 Themes of Geography http://www.gly.uga.edu/railsback/CTW2.html</p>	<p>Located on unnamed river in SE Turkey Dry area in 1983 becomes larger reservoir in 2002 More vegetation Perhaps more population Dam has reservoir of 817 sq kilometers (320 sq mi) Dam generates electricity & has recreational activities Shows high level of technology Movement of water is controlled Infer that landscape has changed</p>
<p>Why do you think dam building is important for the country of Turkey?</p>	

Key: DSI Web Quest

Directions: Answer the following questions by going to this website:

<http://www2.dsi.gov.tr/english/about/goreve.htm>

1. What is the proper title of this organization?
General Directorate of State Hydraulic Works
2. What is their Turkish acronym?
DSI
3. When did this organization start?
December 18, 1953
4. What is their mission?
"to develop water and land resources in Turkey"
"single and multiple utilization of surface and ground waters and prevention of soil erosion and flood damages"
"DSI is empowered to plan, design, construct and operate dams, hydroelectric power plants, domestic water and irrigation schemes"
5. What are some of their responsibilities under law?
"Irrigation, hydroelectric power generation, domestic and industrial water supplies for large cities, recreation and research on water-related planning, design and construction materials"
Make investigations, prepare plans, construct dams and hydroelectric power plants, build irrigation and drainage systems, control flooding, monitor ground water, monitor water supply and water treatment plants, reclaim swamps, improve navigable rivers
6. Click on the "Land and Water Resources" tab from the above link, or go directly to this link:
<http://www2dsi.gov.tr/english/topraksue.htm>

Questions	Answers
What is the location of Turkey?	Latitudinal: 36-42 N Longitudinal: 26-45 E Relative:
What countries does Turkey border?	Greece & Bulgaria on west Georgia, Armenia, Azerbaijan and Iran on East Iraq and Syria to the south
What waterways does Turkey border?	Black Sea, Sea of Marmara, Aegean Sea, Mediterranean Sea
How many lakes are in Turkey?	120
How many large dam reservoirs? Which is the largest?	1. 555 2. Ataturk
Explain Turkey's streams & rivers. (1 st bullet point under the rivers map)	"Turkey is rich in terms of streams and rivers. Many rivers rise and empty into seas within Turkey's borders. Rivers can be classified in relation to the sea into which they empty."
What is the climate of Turkey?	Semi-arid
1. What is the pattern of precipitation in Turkey?	1. Coastal regions receive more precipitation and interior receives less; snow falls in almost every region, but amount varies

<p>2. Where is the driest region in Turkey? 3. How many inches of rain does this region get per year? (Convert mm to inches). Compare this with how many inches of rainfall MN gets per year.</p>	<p>2. Central & SE Anatolia 3. mm: 350-500 inches: 13-19 MN: 18-32 inches</p>
<p>What 2 problems exist? (Under “Water Resources versus Water Consumption Needs of Population”)</p>	<p>1. Turkey is a water stress country with limited existing water potential 2. Population is growing to 100 million by 2030 so more water needed with population increase and economic growth</p>
<p>How many dams exist in Turkey? What organization has the majority control of the dams? (Under “Hydraulic Structures in Turkey”)</p>	<p>Large: 212 Small: 343 Under Construction: 210 Total: 765 (add numbers) DSI</p>
<p>By looking at the table, what are 4 ways the water from dam projects are used? How much energy do the dams produce? What is a Gwh? (check dictionary)</p>	<p>1. Hydroelectric Power 2. Irrigation 3. Water Supply 4. Flood Control Current dams? <u> 45,325 </u> Dams under construction? <u> 31,306 </u> Total? <u> 75,631 </u> Gigawatt hour—unit of electricity that equals one billion watt hours. It is the annual average generation.</p>
<p>Examine the chart to identify how the “ultimate Goals by 2030” compare to the “In Operation” state? (Under the section “Development of Irrigation, Hydropower, and Water Supply Sectors in Turkey”)</p>	<p>Development of Irrigation: Increase 58% from 4.9 to 8.5 million ha Hydroelectricity: Increase 36% from 45.3 billion to 127.3 billion kWh Domestic and Industrial Use: Increase 27% from 10.5 billion to 38.5 billion m³</p>
<p>1. In conclusion, why are these goals important to DSI and the country of Turkey? 2. How will reaching these goals impact the economy? 3. In turn, how will it affect the standard of living for the people of Turkey?</p>	<p>1. Necessary because of inconsistent water supplies (especially during summer growing season), increasing population, and need for ENERGY INDEPENDENCE, WATER CONSISTENCY, control of flooding and erosion 2. 35% of population is farmers and their income will increase, control flooding and erosion, and increase likelihood of increased agro-business. National source of electricity needed by business 3. Will lessen rate of migration to cities & decrease unemployment; increase rural monies, provide jobs in industries; increase welfare and happiness of people with food, water, and electricity</p>