

Ecuador: People and their Impact on the Environment
Fulbright-Hays Seminar Abroad, Summer 2005
“Sustainability and Development in Action: Ecuador as a Case Study”
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Summary:

This unit of study is designed to align with the 8th Grade Arizona Social Studies Standards, but could easily be adapted to fit other grade levels as well as similar standards from other states. The purpose of this unit is to have students consider how Ecuadorians have altered their environment and for what reasons. They will study the impact of these changes, as well as how people think about their environment and how those opinions change over time. Once students have looked at Ecuador as a case study, they are challenged to think critically about their own community. From their own observations, they will identify issues affecting their society and reflect on what should be done to minimize the clash between people and the environment.

In Lesson 1, students reflect on environmental changes they have noticed in their hometown. Then they will view a Power Point presentation that gives examples of environmental change across Ecuador. Students conclude by comparing and contrasting changes experienced in each country. Lesson 2 considers why people have altered their environment. Students participate in a “graffiti wall” where in groups they rotate around the room posting their ideas about why people alter the environment. Each “wall,” or piece of butcher paper, has a prompt such as “energy” or “transportation” that the students specifically address. In Lesson 3, students read about real examples in Ecuador and in their hometown of the impact environmental change has on society. They follow this reading by writing a letter to the editor to express their opinion and propose a solution to the conflict. Finally in Lesson 4, students are given the opportunity to do research on an environmental issue in either Ecuador or their hometown or state. They compile their information and write a newspaper article informing the public about the situation. Teachers can choose to extend this lesson by having students draw political cartoons or by creating a public service announcement for TV or radio, for example.

Essential Questions:

1. How have humans changed their environment?
2. Why have humans changed their environment?
3. What impact do these changes have on the way people and society as a whole live and work?
4. How have human views on how to use or change the environment evolved?

Background Notes:

Information in this Unit Plan, unless otherwise noted, came from the many lectures and experiences had in Ecuador this past summer.

Standards:**Arizona State Social Studies Standards****Strand 4: Geography, Concept 5: Environment and Society***Human and environmental interactions are interdependent upon one another.***PO1:** Describe how humans modify ecosystems (e.g., deforestation and desertification).**PO2:** Describe why humans modify ecosystems (e.g., resources, economic livelihood).**PO3:** Explain how changes in the natural environment can increase or diminish its capacity to support human activities (e.g., global warming, pollution, mining, natural disasters, water table).**PO5:** Analyzing changing viewpoints on the best use of natural resources (e.g., value of oil, water use, forest management).**Objectives:**

1. Student will understand ways in which humans have altered their environment and why.
2. Students will use Ecuador as a case study in understanding how humans interact with and impact their environment. They will use Ecuador as a frame of reference when studying their own community.
3. Students will reflect on the attitudes and priorities of various communities, including their own, in their interaction with the environment.

Materials:

- PowerPoint
- Lesson 1 Venn Diagram
- Lesson 2 Graphic Organizer
- Lesson 3 Chart
- Butcher Paper
- Tape
- Markers
- Articles

Lesson Plans:**Lesson 1: How have humans changed the environment?**

Do First/ Anticipatory Set:	Writing Prompt: "What changes have you noticed in our city as you have grown up?" After 5 minutes, have students share answers with partners.
Teaching: Input, Modeling, Check for Understanding	1. Teacher introduces topic and either passes out or posts (for students to copy) a Venn diagram (Handout 1). Have students list changes for their hometown in the Venn diagram—teacher does so on overhead. 2. Present PowerPoint presentation. Have students record in Venn Diagram ways the environment has been altered in Ecuador.
Guided Practice:	1. Share answers on overhead. 2. Have students in groups of 2-4 fill out the center of the diagram reflecting on similarities between Ecuador and their hometown.

Closure:	Reflect as a class on changes in both countries.
Independent Practice:	Have students write a short compare and contrast essay on how humans have changed their environment in Ecuador and in their hometown. While they have already brainstormed similarities, they will need to reflect on differences independently.
Assessment:	Evaluate essay.

Lesson 2:

Why have people changed their environment?

Do First/ Anticipatory Set:	Begin by reviewing how humans have changed the environment. Have them choose two to three ways people have changed the earth (from Lesson 1) and create sketches with captions underneath for each that shows these changes. Share with classmate.
Teaching: Input, Modeling, Check for Understanding	The teacher introduces the question of why humans change their environment. Brainstorm a few possible reasons on the board/overhead. Teachers may want to show the Power Point again briefly to review the photos. Next, use a “graffiti wall” to expand on the PowerPoint. Have large sheets of butcher paper taped to the walls scattered around the classroom. They should be labeled Economy, Energy, Transportation, Recreation, Agriculture, Housing, Population Growth, and Other. Draw a line straight down the center of the paper and write Ecuador on one side and the name of your town on the other. Divide the class into groups of 3-4. Each group should have a different colored marker (so you can later attribute various ideas to the correct group).
Guided Practice:	Assign each group to stand by one of the posters. Direct each group to write as many examples of change for Ecuador and for your town they can think of that correspond to the topic of the specific paper (economy, transportation, etc.). Give each group 2-3 minutes then rotate the groups the next topic. Do so until each group has reached each topic.
Closure:	Class reflects on all ideas posted. Posters are shared and class discusses reaction.
Independent Practice:	Each student fills out Lesson 2 graphic organizer. Have each student choose one category they found most interesting and write a summary/reaction to their findings.
Assessment:	Participation, graphic organizer, summary/reaction.

Lesson 3:

What is the impact of environmental change on people and society?

Do First/ Anticipatory Set:	Writing Prompt: From yesterday’s lesson, name and explain one positive change and one negative change people have made to the environment either here or in Ecuador.
Teaching:	Explain that students will be examining two examples of the

Input, Modeling, Check for Understanding	<p>impacts of environmental change on people and society. Divide the class into partners. Half of the partners will read an article about Ecuador and half will read an issue about your local community. Teachers must select an appropriate article from their community to share with their students. This may range from water issues to urban sprawl. Your local paper is a great place to look for a relevant article. For the article about Ecuador, I would suggest using a recent series from NPR on the Galapagos Islands. You can play it for free or have the transcript emailed to you. The Web site is http://www.npr.org/templates/story/story.php?storyId=4793575. Another good article is on the BBC Web site at http://news.bbc.co.uk/2/hi/americas/4308537.stm. This addresses the impact of the oil industry on the indigenous peoples of the Ecuadorian Amazon. Teachers may wish to assign only part of this lengthy article. Have partners take turns reading and have them together record the main idea and one supporting detail for each paragraph (or appropriate amount of material). Once they are finished reading, they must write a brief summary on the article and prepare to share their findings with another group. Jigsaw: Match a pair that read about Ecuador with a group that read on your area. Have them share their findings with each other.</p>
Guided Practice:	Pass out or post Lesson 3 organizer. As a group of four, have students fill in chart.
Closure:	Have class share findings and perceptions.
Independent Practice:	Have students write a letter to the editor where they express their opinion on one environmental issue that has arisen. Require student to state the problem, give their opinion, and suggest a solution.
Assessment:	Assess notes from article, organizer, and letter to editor.

Lesson 4:

How do people's views on the environment change?

Do First/ Anticipatory Set:	Have students respond to this Native American proverb: We do not inherit the earth from our ancestors; we borrow it from our children. Have them share their interpretation and opinion. Also ask if they believe this is how most Americans think about the environment today.
Teaching: Input, Modeling, Check for Understanding	Explain that over time people's ideas on how we should treat the environment has changed. Also, explain that different people and societies have many views on the environment and its importance. Choose a local issue (perhaps the same local issue used in Lesson 3) and expand on how the community has come to view the clash between the environment and society and how it has evolved.
Guided Practice:	Have students research either an issue in your community or in

	Ecuador. Students should have a minimum of three sources and write a newspaper story intended for print in your local paper. The research could be accomplished in one to two classes in a school computer lab/library.
Closure:	Have class share their topics.
Independent Practice:	Many possibilities exist to extend this lesson. Ideas for independent projects include political cartoons, a letter to an elected official, a political campaign speech, posters, bumper stickers, or a TV or radio ad to increase the community's awareness of the issue. You may choose one or more for the class or have them choose.
Assessment:	Assess the newspaper article and other independent projects.

Follow-Up Activities:

Many activities could follow these four lessons. Further research into Ecuador or other countries and the conflicts they have between society and the environment could be explored. Also, an investigation into the impact of technology and communication on society and the environment would be fascinating. Studying ancient cultures, or even modern cultures, whose values differ in regards to the environment would also be rewarding.

Additional Resources:

Many resources exist online that can assist any teacher in creating or extending lesson plans. The easiest search method is to use any search engine, such as www.google.com, and search for the desired topic.

References:

In this Unit Plan two sources are mentioned for possible use. The first is an article from BBC that discusses the oil industry in the Ecuadorian Amazon.

Voss, Michael. "Ecuador Tribes Vow to Fight Oil Threat." BBC 3 Mar. 2005. 28 Nov. 2005. <http://news.bbc.co.uk/2/hi/americas/4308537.stm>.

Also recommended was the NPR series on the Galapagos Islands.

"Fisherman, Conservationists at Odds in Galapagos." Morning Edition. NPR. 10 Oct. 2005. <http://www.npr.org/templates/story/story.php?storyId=4793575>.

ECUADOR: A Case Study

*How have humans changed their
environment?*

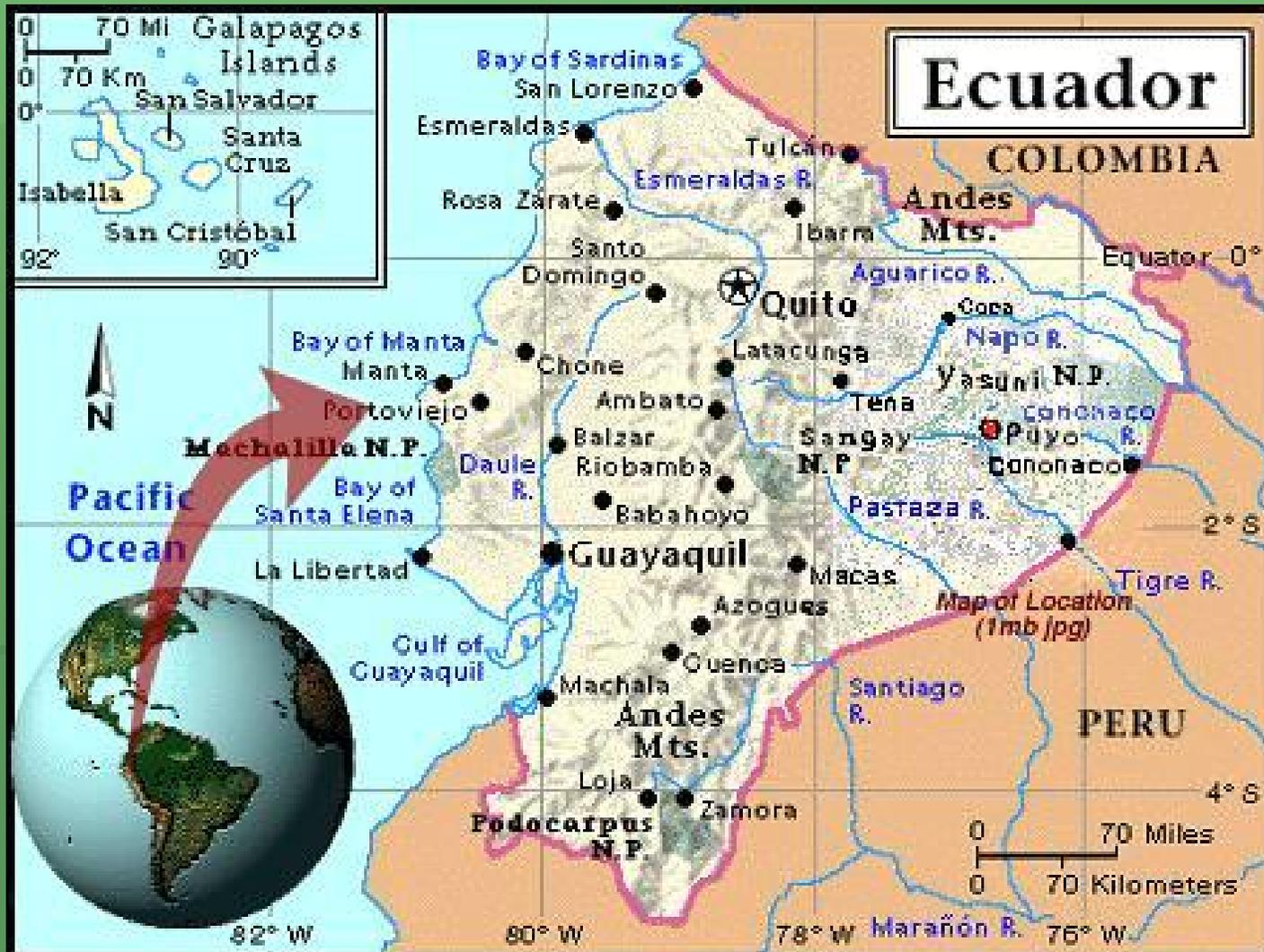
How have humans changed their environment?

- Human beings over the course of history have changed their physical surroundings to meet their many needs and wants.
- As technology has developed and populations have increased, humans have put more pressures on their environments, some with negative or positive consequences.

Ecuador

- Ecuador is a country in South America, approximately the size of Colorado, that has experienced many environmental changes.
- The country is considered a biodiversity hotspot because it has great genetic and biological diversity.
- Ecuador is one of the top 20 countries with the greatest diversity in species--amazing for such a small nation.
- Ecuador has more diversity in plants, insects, and amphibians than the United States, a country roughly 30 times its size.

The environment in all four regions of Ecuador has been affected in various ways by humans.



Ecuador's Four Regions: The Oriente, Highlands, Coast, and Galapagos Islands.

The Highlands

The Highlands is home to modern Quito, the capital city of Ecuador, resting 9,200 ft. above sea level in the Andes Mountain Range.



With a growing population, the need for food is increasing.



Much land is devoted to agriculture in Ecuador to feed its population of over 13 million. The main crops include rice, corn, potatoes, and soybeans.



A potato field



Terraced land
outside Quito

Typical Highland food includes beef, potatoes, corn, and even fried Guinea Pig.



Rose plantations are a booming business in Ecuador. Large, irrigated greenhouses allow roses of all varieties to mature for one year before being packaged and transported by truck to Quito for export.



A young woman picking roses



Man responsible for applying pesticides to the roses.

Cuenca is Ecuador's second largest city in the Highlands behind Quito. It was colonized by the Incas and then by the Spanish in the 1500s. It has kept much of its European colonial architecture.



One of Cuenca's busy streets. The Andes are visible in the background.



Families do laundry in one of the four major rivers that run through Cuenca.

The Coast

The coast is a very diverse region home to Ecuador's largest city of Quayaquil, vast agricultural lands, and coastal resources.



A view of the crowded port city of Quayaquil.



Irrigated Banana Plantation

Ecuador's agricultural center is in the coastal region. Many crops are grown including bananas, one of Ecuador's largest exports.



A cacao fruit--What chocolate is made of!



Bananas

Fishing is very common along the coast. There are also many shrimp, tilapia, and crab farms built along the coast. Often mangrove forests have been destroyed to make room for aquaculture.



A fisherman checking his nets



A bundle of captured crabs

The Oriente

Within Ecuador's territory lies part of the Amazon Basin. Since the 1960s more people have moved to the Oriente causing many environmental challenges.

Environmental
Issues Include:

Deforestation

Habitat Destruction

Mining

Hunting

Oil Excavation



A new road winds from the Andes into the Amazon. The building of roads has encouraged more settlers to relocate to this region, intensifying environmental concerns.

After oil was discovered in Ecuador in 1969, the government leased blocks of land to oil companies. Few environmental laws exist or are enforced, so much environmental damage has occurred from the excavation of oil.



The indigenous people and oil companies have clashed over land rights. Also, many people have developed health problems due to exposure to the oil, causing more conflict.



A pipeline from the Amazon to the Pacific Ocean.

More tourists are coming to the Amazon as more roads and airports are making it easier for them to reach the region. People from across the world come to experience the Amazon and meet its people.



A hiking trip with local guides



Learning to shoot a blow gun from a local hunter

The Galapagos Islands



A friendly sea lion

The Galapagos Islands are world famous for being home to many endemic species- or species that are found no where else on the planet.



A giant tortoise can live to be 150 years old. Their population was threatened by sailors who kept them alive for up to one year without food aboard so they would always have fresh meat.



A blue-footed boobie

The islands are 600 miles from mainland Ecuador so they have been largely protected from human interference until recently. Today the human population is growing quickly--26,000 people live on the islands now.



A Marine Iguana--It is the only iguana in the world that can live on land and in the water. It can swim 60 feet deep and hold its breath for up to an hour.



A colorful crab!

Providing basic needs for people including transportation (roads, airports, cars, boats), housing, and waste management have caused damage to the environment. Also, new species, like goats and cats, that endanger Galapagos species have been accidentally introduced by people.



Thousands of tourists from around the world visit every year. Some stay on land while others stay on cruise boats that travel island to island.



Sea lions lounge on the boats of local fishermen and women.

People in the United States have also changed their environment.

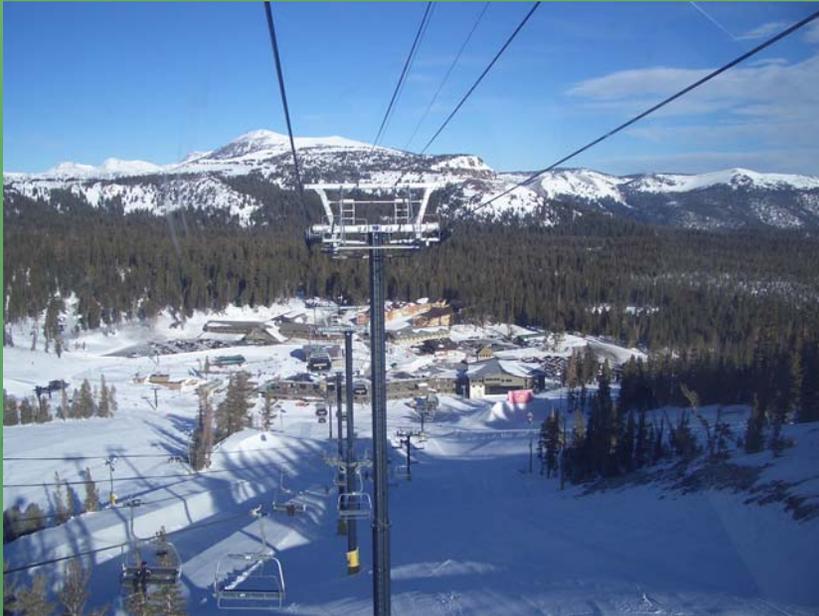


Windmills for energy outside of Palm Springs, California.



The Imperial Dam in California, controlling the flow of the Colorado River for downstream consumption.

Humans have and will continue to change their environment. Today we must STOP and THINK how we can make more responsible changes with fewer negative consequences on our environment.



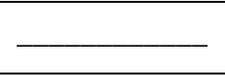
Ski chairlift at Mammoth Resort,
California.



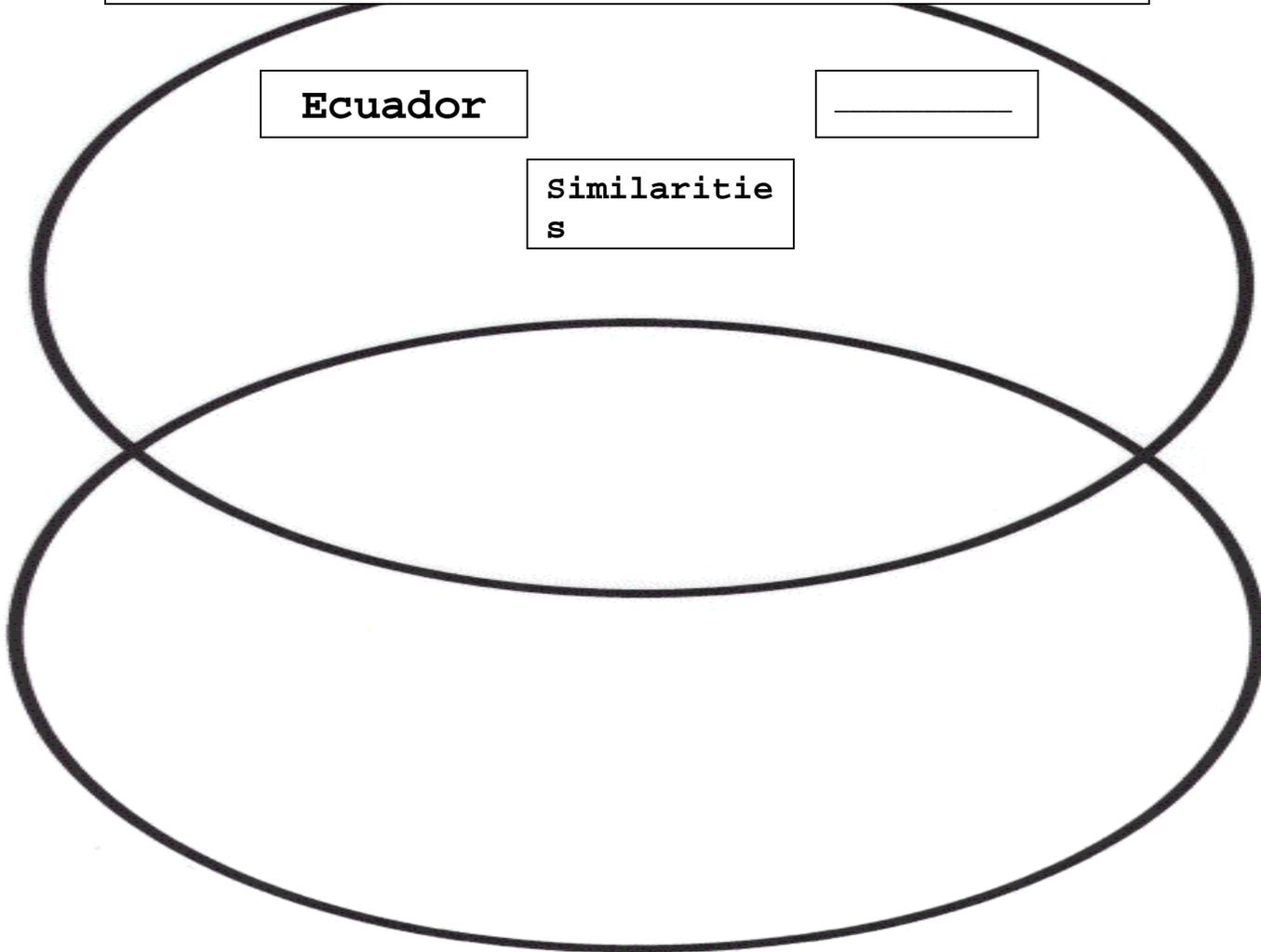
Irrigated Fields of Yuma,
Arizona.

Lesson 1: How have people changed their environment?

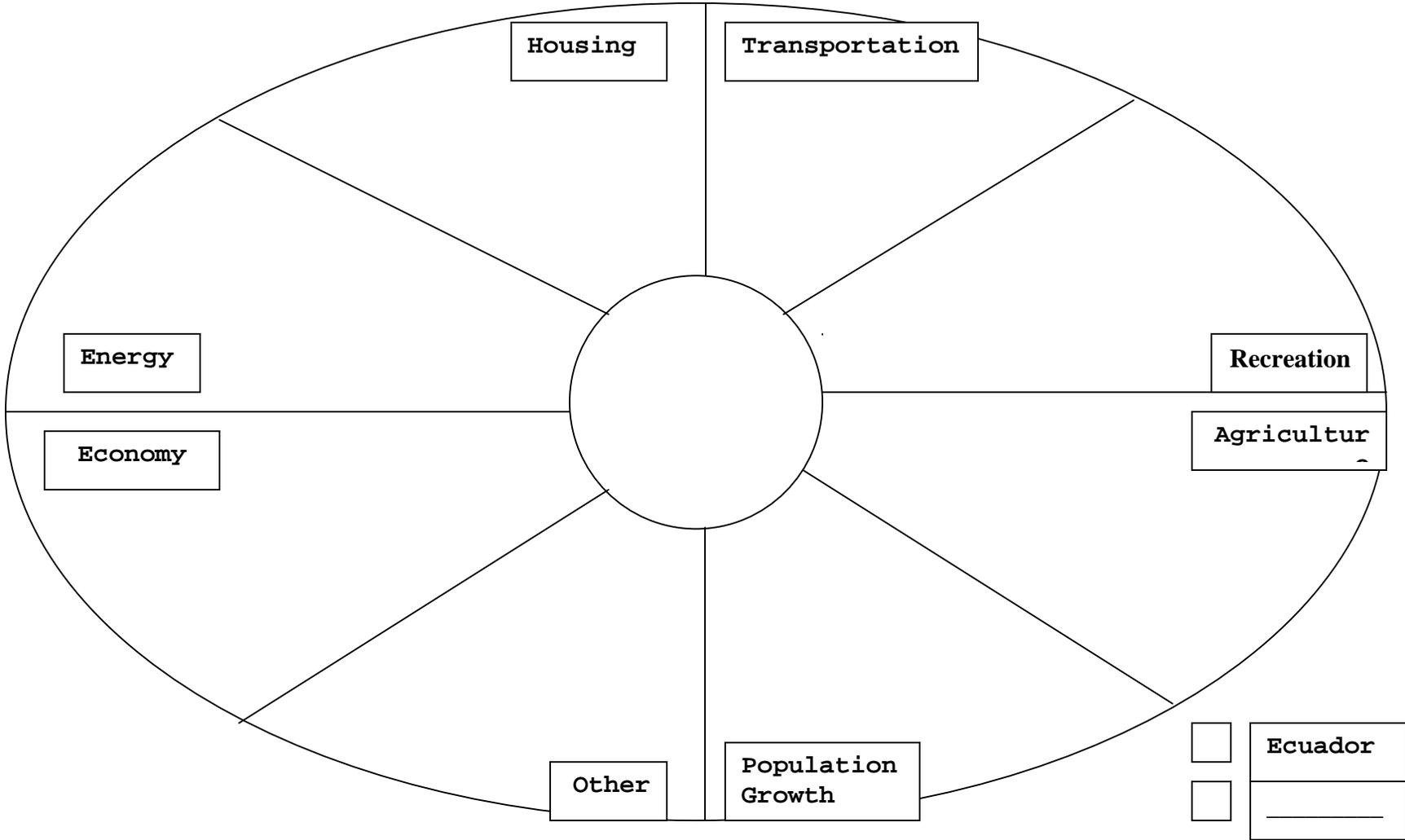
Ecuador



Similarities



Lesson 2: Why have people changed their environment?



Lesson 3: What is the impact of environmental change on people and society?

Directions: List all positive and negative impact of environmental change on people and society for both Ecuador and your town.

	Positive Changes	Negative Changes
Ecuador		
My town of: _____		