

ADVANCED

FRESHWATER CRISIS

Energy Security and Economic Growth



United States
Diplomacy Center



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The simulations have no right or wrong actions or solutions because the process, rather than the end result, is the goal. The learning experience develops organically as the students engage in the simulation. Once the simulation has been completed, students are encouraged to express how their views on diplomacy have evolved as a result of the simulation, and to contemplate how they can apply diplomatic skills to their everyday lives.

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Diplomatic Simulations are developed and presented by the U.S. Diplomacy Center as an integral component of the Center's education offerings. This document and all associated materials are intended exclusively for educational use.

Student Materials

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Climate Change and Water

- ▶ Nearly 70% of the world is covered by water. However, 97% of Earth's water is salt water in the oceans, while only 3% is freshwater. Most of this freshwater is locked away in ice and glaciers or trapped underground, meaning that only a very small portion (1%) is immediately available for use.
- ▶ All plants and animals on land – including humans – depend on freshwater to survive and thrive. Freshwater is essential for drinking, bathing, cleaning, growing food, and many other essentials of everyday life.
- ▶ Humans also use water for activities that are not directly connected to sustaining life, such as generating power, mining for minerals, and manufacturing things like plastic. In addition, people use freshwater for many non-essential activities like washing the car or filling the swimming pool.
- ▶ **Climate change** is affecting the amount of freshwater on Earth. Each year, some areas get more rain and snow than they did the year before, while others get less and less. Areas which previously had stable, balanced environments are more vulnerable to frequent floods or extended droughts.
- ▶ 126,000 animal species around the world including birds, reptiles, and many fish live in freshwater **habitats**. Unfortunately, animals living in freshwater habitats are disappearing 4-6 times *faster* than animals living on land or in salt water. Nearly *half* of all **endangered species** in the U.S. are freshwater species.
- ▶ All over the world, countries must strike the right balance between using freshwater for keeping people healthy, improving their economies, and preserving freshwater for local plants and animals.
- ▶ Many water sources cross boundaries from one country to another. In these cases, the countries that share the water source should decide together how to use these resources. However, disagreements can and do occur.

Nearly *half* of all **endangered species** in the U.S. are freshwater species.

Sources: *Freshwater Crisis*, National Geographic Magazine, April 2010; *Human Development Report 2006*, United Nations Development Program; United Nations World Water Development Report 2015.

Today's simulation involves a hypothetical scenario but deals with the real world problem of increasingly scarce freshwater resources. You will role play a member of a delegation at an international meeting trying to negotiate a solution. The delegations are:



The U.S. Department of State



The Water Convention Bureau



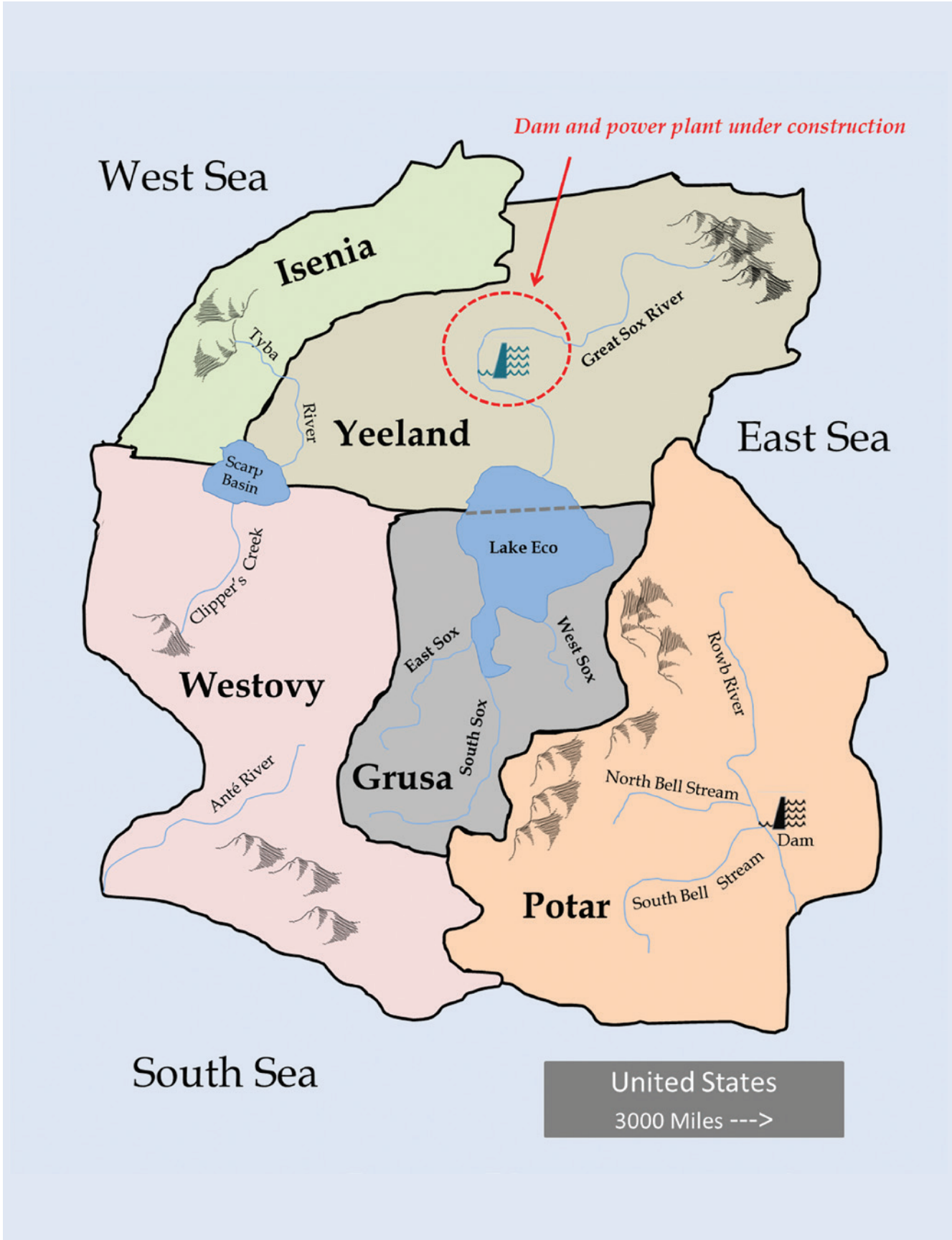
The Foreign Ministry of Yeeland



The Foreign Ministry of Grusa






Save Our Avian Resources (SOAR)



Yeeland and **Grusa** are neighboring countries that share a common border (see map). Yeeland is an industrialized country with a medium-sized population. Most people live in urban areas. Grusa is a rural country with a much smaller population. Most people are farmers. Yeeland, Grusa and the **United States** are **economically interdependent**. Grusa grows wheat that it sells to Yeeland and the United States. Yeeland manufactures farming equipment that it sells to Grusa and the United States. American construction companies work in Yeeland and American agricultural firms lead projects to promote more efficient farming practices in Grusa. All three countries are members of the United Nations.

The **Convention on the Protection and Use of Transboundary Watercourses and International Lakes** (the **Water Convention**) is a legally binding international treaty (agreement) that any country belonging to the United Nations can join. Treaty members agree to three broad principles:

1		To use water in ways that as much as possible prevent, control, and reduce significant transboundary impact (the “do no harm” rule);
2		To use water in ways that are equitable and reasonable (the “reasonable use” rule); and
3		To cooperate with other nations to achieve goals (1) and (2).

The **Water Convention Bureau** is an **international organization** created under the treaty to help treaty members act in accordance with these three principles. Grusa and Yeeland are both parties to the Water Convention. The United States is *not* a signatory of the Water Convention.

Yeeland and Grusa share a common freshwater source. The Great Sox River flows down from the northern mountains of Yeeland, passes through Lake Eco, and runs into Grusa. There it branches into the East Sox, South Sox and West Sox rivers (collectively called the “Lesser Sox” rivers). Lake Eco straddles the border between Yeeland and Grusa. The lake is the **natural habitat** for an **endangered species** called the Lauret crane. The Lauret crane is one of the largest flying birds in the world, standing six feet tall with a wingspan of eight feet. Lake Eco happens to be one of the few places on Earth where these birds still live in the wild.

About 20 years ago, Yeeland and Grusa created the Lake Eco Wetlands Preserve to protect the Lauret cranes from local **extinction**. They jointly manage the lake and the land around it. This preserve is an important source of jobs and income for both countries due to the thousands of tourists from different nations who visit the Lake Eco Wetlands Preserve each year. 10% of Yeelanders and 30% of Grusans work at the Lake Eco Wetlands Preserve or in the nearby hotels, shops, and restaurants that cater to so-called “crane tourists.” 40% of Yeeland’s national income and 60% of Grusa’s national income comes from these businesses. At the same time, crane tourism is very profitable for American airlines and sightseeing companies that lead ecological tours around the wetlands preserve.


Foreign avian (bird) scientists also live around the preserve so they can study the cranes throughout the year in their natural habitat. Many of the avian scientists working at Lake Eco are from the U.S. These scientists are particularly interested in the Lauret crane because there is some evidence that a cancer medicine could be developed from the crane’s saliva. The more cranes they can study there, the better.

Save Our Avian Resources (SOAR) is an international **non-governmental organization (NGO)** dedicated to protecting the natural environment, with a specific focus on bird species. Members of SOAR include people from around the globe who love nature, especially birds, and scientists who study birds in their natural habitats. SOAR raises donations from bird-lovers around the world to pay the salaries of many of the veterinarians, researchers, and park rangers who work at Lake Eco. SOAR also promotes crane tourism to support the wetlands preserve.

Yeeland, Grusa and the United States have a shared problem: **climate change**. Due to changing weather patterns, each winter less snow falls in the mountains. When the snow melts in the spring there is less water flowing into the Great Sox River. As a result of this climate change, the Great Sox River is at the lowest level it has ever been. The Lake Eco Wetlands Preserve downstream needs every drop it can get to support the cranes and other precious wildlife. At the same time, Grusan farmers need water to grow the wheat that provides 40% of Grusa’s national income.

Yeeland’s current power grid does not provide enough electricity for its growing population and rapidly expanding industries. There have already been several blackouts in Yeeland’s big cities that adversely affect schools, businesses, public transportation, grocery stores and, most significantly, hospitals. To solve its energy shortage, the government has completed about 75% of a four-year project to build a new **hydroelectric power** plant and dam along the Great Sox River. The project costs about U.S. \$20 billion (\$5 billion each year). An American company, U.S.-Yeeland Construction, is in charge of building the power plant and the dam. This company employs approximately 4,000 Americans and 20,000 Yeelanders.

Yeeland knows the dam will reduce the amount of water that flows into Lake Eco and on to the Lesser Sox rivers. It will endanger the cranes, reduce crane tourism, and potentially cut the amount of wheat Grusa can grow and sell to Yeeland and the U.S. However, the government’s top priority



is providing electricity to as many of its citizens as possible, as soon as it can. Yeelanders are very concerned about the power outages, which are becoming more frequent and lasting longer. They worry especially about hospitals being disrupted, and every day Yeeland's politicians receive calls and letters from angry citizens demanding the government to fix the problem immediately.

The government of Yeeland believes it is abiding by the “reasonable use” standard of the international Water Convention and for this reason has refused to discuss the issue before today. Last week, the President of Yeeland defended the power plant and dam on television, saying, “The Great Sox River is on our land. It is our river. Other countries should not try to dictate what Yeeland does with its own natural resources.”

Grusa claims Yeeland is ignoring its obligations as a signatory to the Water Convention to “do no harm.” Grusa is very concerned that Yeeland's dam will permanently damage the fragile ecosystem the Lake Eco Wetlands Preserve was created to protect, significantly reduce the already endangered Lauret crane population, and create major water shortages for Grusan farmers. The fate of the Lauret cranes is a very emotional issue in Grusa, where that bird is considered the national mascot (like the American Bald Eagle or the Australian Red Kangaroo), and Grusans see Yeeland's disregard for the cranes' survival as a great insult to Grusan culture.

SOAR also strongly opposes Yeeland's plan to build the power plant. The group knows from studying birds that Lauret cranes do not live as long in zoos or have as many chicks as they do in their natural habitat. SOAR has already helped angry Grusans stage several protests in front of the Yeeland Embassy in Grusa and in Yeeland's capital city. These protests have received a lot of negative international media attention and left the Yeeland government scrambling for a response. SOAR and Grusa have been trying for three years to bring Yeeland to the negotiating table, and Yeeland finally agreed after the latest (and largest protest) last month.

As an alternative to hydroelectricity, Yeeland could instead invest in wind and solar energy technology, which cost about the same. However, Yeeland would have to study the possibilities, develop a completely new energy plan, and only then begin building. That process could take up to three years. In the meantime, Yeeland's cities would continue to experience significant power outages. Also, if Yeeland changes its energy plan, 20,000 Yeeland construction workers and 4,000 Americans will lose their jobs as a result.

The governments of Yeeland and Grusa are very aware that regardless of their differences, the current water-sharing arrangement has become untenable and must change. However, they cannot agree on what to do. They have asked the U.S. Department of State and the Water Convention Bureau to help them find a solution. The Water Convention Bureau has invited SOAR to the meeting to represent the interests of the cranes.

U.S. Department of State

The U.S. buys wheat from Grusa and farming equipment from Yeeland. American airlines and tour companies make a lot of money from “crane tourism.” The U.S. Department of State supports American companies that do business in Yeeland and buy wheat from Grusa. It also supports agricultural programs to help Grusan farmers farm efficiently and sustainably. The State Department also tries to protect endangered species around the world from extinction. The U.S. is not a member of the Water Convention.

- ▶ 2016 U.S. Federal Budget (estimated): \$16.5 trillion
- ▶ 2016 Foreign Affairs Budget: \$27.7 billion (0.17% of federal budget)
- ▶ 2016 International Assistance Programs: \$14.8 billion (0.09% of federal budget)

Water Convention Bureau

The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (the Water Convention) is a legally binding international treaty that any country belonging to the United Nations can join. The Water Convention Bureau is an international organization created by the treaty to help members to use transboundary water cooperatively in ways that are fair to both sides.

- ▶ 2015 environmental grants budget: U.S. \$1.1 million
- ▶ Parties to the Convention: 43 countries, including Yeeland and Grusa. The United States is *not* a party to the Water Convention.

Foreign Ministry of Yeeland

Yeeland is a medium-sized industrial country. Most people live in urban areas. Yeeland buys wheat from Grusa and sells farming equipment to Grusa and America. Yeeland shares responsibility for the Lake Eco Wetlands Preserve with Grusa. About 10% of Yeelanders work at the Lake Eco Wetlands Preserve or in the nearby hotels, shops, and restaurants that cater to “crane tourists.” 40% of Yeeland’s national income comes from crane tourism. Yeeland is a member of the Water Convention.

GEOGRAPHY



600,000
sq km
(about the size of
Texas)

PEOPLE



Current Population
25 million

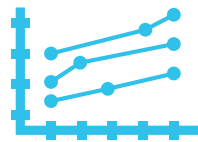
Population Growth
3% per year

GOVERNMENT



Parliamentary
democracy
(like England)

ECONOMY



Gross Domestic Product
(GDP)

U.S. \$75 billion

GDP Per Capita

U.S. \$45,000

Primary Industry
Manufacturing
Construction
Service Sector
Tourism
Commerce
Minerals

Foreign Ministry of Grusa

Grusa is a small rural country. Most people are farmers. Grusa buys farming equipment from Yeeland and sells wheat to Yeeland and America. Grusa shares responsibility for the Lake Eco Wetlands Preserve with Yeeland. About 30% of Grusans work at the Lake Eco Wetlands Preserve or in the nearby hotels, shops, and restaurants that cater to “crane tourists.” 60% of Grusa’s national income comes from crane tourism. The Lauret crane is Grusa’s national bird. Grusa is a member of the Water Convention.

GEOGRAPHY



300,000

sq km

(about the size of
New Mexico)

PEOPLE



Current Population

15 million

Population Growth

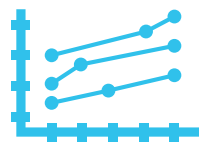
1.2% per year

GOVERNMENT



Federal Republic
(like the United States)

ECONOMY



Gross Domestic Product
(GDP)

U.S. \$50 billion

GDP Per Capita

U.S. \$30,000

Primary Industry

**Agricultural
Products (e.g.,
wheat, coffee)**

Tourism

Livestock

Commerce

Save Our Avian Resources (SOAR)

SOAR is a non-governmental organization (NGO) dedicated to protecting all species of birds in their natural habitats. Nature lovers from all over the world donate money to pay the salaries of veterinarians, scientists and park rangers who work at the Lake Eco Wetlands Preserve.

- ▶ Total annual budget: U.S. \$80 million
- ▶ Budget for Lake Eco Wetlands Preserve: U.S. \$5 million (salaries, equipment and training for park rangers, scientists and veterinarians).

WORKSHEET 1: QUESTIONS TO THINK THROUGH

Whom do you represent?

What is your overall goal?

What goals (in priority order) would you also like to achieve?

Who can help you?

Who might oppose your approach?

What incentives and disincentives can you offer to persuade others?

What should be your strategy in dealing with the other parties, i.e., with whom should you speak first?

Remember: There is no “right” or “wrong” outcome. This is not a debate in which you need to win the argument. Your goal today is to work together to find a solution everyone can agree upon. This situation requires diplomacy and compromise. Build on common ground. Look for areas where you and the other parties agree and try to expand those. Where you disagree, try to create options that address the other parties’ concerns.

The following points are *possible* actions to be taken. Determine as a team which proposal(s) you favor, which proposal(s) you are neutral about, and which proposals you would not support.

Proposal 1

Yeeland and Grusa reach an agreement to co-manage the dam and each use 50% of the water they would normally use. They agree to shrink the area of the wetlands preserve and SOAR agrees to move some of the cranes to zoos or other habitats.

Potential Problems: This arrangement does nothing to solve the long-term problem that due to climate change the total amount of water is reducing each year. With populations in both countries rising, ultimately Yeeland and Grusa will have to revisit the question of how much freshwater to use for generating power, preserving the wetlands, and agriculture. Lauret cranes do not live as long or have as many chicks in zoos as they do in the wild.

Proposal 2

Yeeland and Grusa reach an agreement to facilitate an inter-basin water transfer to bring water from the Scarp Basin to Lake Eco, thereby alleviating the need for Great Sox River water to maintain the water level in the lake and the Lesser Sox rivers.

Potential Problems: An inter-basin water transfer system would take a long time to build, is expensive, and many of studies would need to be done first to determine how much water the Lake Eco environment needs to survive versus how much water the Scarp Basin environment needs to survive. The Water Convention Bureau would insist that Westovy and Ilenia, both parties to the Water Convention, be consulted.

Proposal 3

Grusa or the Water Convention Bureau loans or donates money to Yeeland to build solar or wind power facilities and Yeeland agrees to fill the dam more slowly once construction is finished. In other words, Yeeland would fill the dam gradually over the course of three years, instead of rapidly over the course of one year. This plan would allow more freshwater to flow into Lake Eco and on to the Lesser Sox rivers during the filling period.

Potential Problems: To execute this plan effectively, a feasibility study would need to be done to determine how much solar and wind energy needs to be produced to cover Yeeland's energy deficits and where to place these power plants. A proper study could take up to three years to complete. From the Water Convention Bureau's perspective, this solution still does not settle the question of how Yeeland and Grusa should share diminishing freshwater resources that impact both countries.

Proposal 4

Yeeland agrees to buy power from Potar and to build transmission lines to conduct that power from Potar to Yeeland.

Potential Problems: Potar, which is not a party to the Water Convention, would need to agree. Yeeland would need to conduct extensive environmental and technical studies to determine if Potar can provide enough electricity to cover Yeeland's needs, and if building a transmission line is even feasible.

Proposal 5

Clearly determine your position and reach consensus within your group on actions you propose:

- ▶ **Negotiate immediately** within your group if you see that you no longer have consensus.
- ▶ Clarify or restate your position if one of the other stakeholder groups mis-represents it.
- ▶ If during informal discussions you decide your group should change its position, discuss it with the other group members as soon as possible so everyone stays on the same page.

Realistically evaluate the possible actions you propose before you offer them:

- ▶ Are the proposals **doable**?
- ▶ Will they **achieve** the results you want?
- ▶ Watch for **unintended consequences**.



Analyze the other stakeholders' positions:

- ▶ Why do they **hold** that position?
- ▶ Why do they **oppose** or support your proposals?
- ▶ Can you apply **pressure** to make stakeholders re-evaluate their positions?
- ▶ Can you offer any **incentives** to make stakeholders re-evaluate their positions?

Build alliances:

- ▶ **Identify** which stakeholders share your position, and which stakeholders do not.
- ▶ Don't spend all your time trying to persuade others. **Listen** carefully to other delegates and absorb what they are saying.
- ▶ Try to identify **common interests** you share with stakeholders who oppose your position. What can you actually agree on?
- ▶ Try to identify **common concerns** you share.
- ▶ Even if you cannot reach full agreement on everything, are there elements you can agree upon?

Identify incentives and disincentives (carrots and sticks):

- ▶ If you think another stakeholder group wants something that you can provide, even if not connected to the issue at hand, offer it to them. This may make them more willing to see your points.
- ▶ Explain the negative consequences for the other stakeholder group if it does not do things your way. That cost may not be directly connected to the issue at hand.

Climate change – Any significant change in temperature, precipitation (rain or snowfall), wind patterns and other weather-related phenomena.

Economically interdependent – Two or more people, groups or countries that buy from and sell things to each other. If one side stops buying or one side stops selling, that hurts the economy of both sides.

Endangered species – An animal or plant that is in danger of becoming extinct (dying out) within the foreseeable future.

Hydroelectric power – Power (electricity) generated by water turning turbines (large propellers).

International organization – An organization (group) whose members are countries rather than people. The government of each member country sends representatives to the organization and gives money to help fund the group.

Natural habitat – The location where a particular plant or animal usually lives and thrives. Does not include artificial (man-made) environments like zoos.

Non-governmental organization (NGO) – An organization (group) that is not part of a government. The organization works on particular interests or projects. Examples include charities and social clubs, like the International Red Cross or Amnesty International.

Transboundary – Crossing one or more borders.

Transboundary watercourses – Waterways (e.g. lakes, rivers, streams) that cross borders from one country to another.

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