

Desalination and water transfers in the Dead Sea - Negotiation Simulation. By Jacob Petersen-Perlman

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Desalination and water transfers in the Dead Sea – Negotiation Simulation

Note

This is a six-party, mediated negotiation between Israelis, Palestinians, and Jordanians. It concerns a desalination and water transfer project involving the Red Sea and the Dead Sea.

Scenario

The Dead Sea is an endoheric, hyper-salinized lake below sea level in the Middle East. Jordan, Israel, and the Palestinian Authority share the shoreline. Each country has its own economic interests regarding the lake's use, including industrial and tourist activities. Due to withdrawals from the three countries that have exceeded the rate of replenishment for the lake, Dead Sea levels have dropped significantly – over 40% of its volume in the past 50 years. This has caused some resorts in Jordan to be more than one mile from the original Dead Sea shoreline, as well as sinkholes forming on the Israeli and Palestinian shore.

The increased use and demand for water in this semi-arid to arid region by each country has caused different proposals to reverse the depletions of the lake. Proposals have included a canal linking the Mediterranean Sea and Dead Sea, as well as the Red Sea and the Dead Sea. Last year, the three parties agreed to study a plan that would include desalinating water from the Red Sea. All countries have agreed to the possibility of the following:

- Desalinating water from the Red Sea
- Purchasing desalinated water for agricultural use
- Purchasing surface water rights in a trade from the use of water

You will negotiate over three issues:

- What energy source will be used for powering desalination,
- How much water will be desalinated, and
- How much water each party gets

Your task is to negotiate a solution between the three governments. This simulation is loosely based on a proposed agreement between Jordan and Israel over desalination of water from the Red Sea, water right transfers, and recharging of the Dead Sea, where an agreement was signed between the two countries in February 2015 (Times of Israel 2015).

Logistics

Day 0: Students will be given 20 minutes to read instructions and plan with partners. General Instructions and Confidential Instructions will be distributed to each party.

Writing Assignment: All students (including the mediator) will write a two paragraph position brief. In that position brief, students will:

1. Declare their positions on the three negotiation issues.
2. Declare their goals (what is hoped to be accomplished?).

3. Highlight areas of potential compromise.

Day 1: *First day of negotiation*. Each “party” is given 30 minutes to develop their negotiation strategy. They share position papers with the mediator.

Writing Assignment: Daily journal of negotiation events.

Day 2: *Day two of negotiation*. The first day represents “Year 1” of negotiation; now it is “Year 2”.

Writing Assignment: Daily journal of negotiation events.

Day 3: *Day three of negotiation* (wrap-up, 30 minutes).

Writing Assignment: Daily journal of negotiation events; negotiation paper due 1-2 weeks after negotiation is complete.

General Instructions

Israel, Jordan, and the Palestinian Authority (PA) are interested in exploring the possibility of constructing a desalination plant on the shores of the Red Sea. The desalination plant will be located in Aqaba, Jordan, and would provide water to Israeli farmers in the Negev Desert in southern Israel for purchase. The brine left over from the desalination process, with additional Red Sea water, would then be pumped through the Arava Desert down to the Dead Sea, generating hydropower as it descends in altitude down to around 1,000 feet below sea level (~300 m). Some of this hydropower will be able to be used for desalination, but it won't produce the full amount of energy needed to power the desalination plant. Jordan will also purchase Israeli surface water rights from the Sea of Galilee to serve its northern communities.

The proposed plan is controversial for a number of reasons:

1. The potential expense of the project.
2. The possible environmental costs caused by both the emissions from a potential desalination plant and the potential negative effects of discharging brine into the Dead Sea.
3. The PA, so far, has been left out of the negotiations.

All countries have agreed to the possibility of the following:

- Desalinating water sourced from the Red Sea
- Purchasing desalinated water for agricultural use
- Purchasing surface water rights in a trade from the use of water

The group has met twice before and are optimistic for the chances of an agreement to come to fruition. Yet, because of the highly sensitive relationship between the three parties, a mediator has been requested to facilitate the negotiation.

You will negotiate over three issues:

1. What energy source will be used for powering desalination,
2. How much water will be desalinated, and
3. How much water each party gets.

In order for an agreement to be successfully reached, ***the Canadian, Israeli, Palestinian, and Jordanian representatives must all agree on a solution.***

Note: This simulation shows a fictionalized version of a real-life project. Details have been simplified and/or changed for the negotiation simulation.

Issues

The three key issues are:

1. **What energy source will be used for powering desalination.** Parties will decide between three energy sources: oil, solar power, and natural gas. Each source has its positives and negatives including CO2 output, space requirements, cost, and efficiency.
2. **How much water will be desalinated.** The idea behind the desalination plan is to increase the amount of available water for use between each of the three countries. More desalinated water will provide more economic opportunities through agriculture, but will also cost more in energy. More desalinated water will also cause more brine, which could have detrimental effects on the Dead Sea. Conservation measures are also a possibility.
3. **How much water each party gets.** Options include water for just Israelis and Jordanians and water to be distributed between Israelis, Jordanians, and Palestinians.

Parties to the Negotiation

- **Canadian Government Representative.** The Canadian government will be the financier of the desalination project. In doing so, Canada is interested in arranging a project that is financially feasible and promoting peace within the region. Canada has also offered to supply oil to power the desalination plant.
- **EcoPeace Middle East Representative (non-voting member).** This non-governmental organization's primary objective is to bring together Jordanian, Palestinian, and Israeli environmentalists to promote cooperative efforts to protect the environment. It seeks to advance both "sustainable regional development and the creation of necessary conditions for lasting peace in the region." It has been invited here to represent the environmental interests of the region by the three governments.
- **Israel Government Representative.**
- **Jordan Government Representative.**
- **Palestinian Authority Representative.**
- **World Bank Representative (mediator).** The World Bank has arranged for this project in order to promote peace and sustainable development for the region. It will serve the role as mediator between the parties.

The goal of this meeting is to review the plan and for meeting the concerns of all parties. Any agreement reached will be subject to approval by each party's constituency. If a deal is not reached, it is likely that the Dead Sea levels will continue to drop and the lack of water will contribute towards instability in Jordan and the Palestinian Authority, a situation none of the parties want. All parties are keenly interested in reaching a deal.

Background

Environmental and economic concerns about the project

The Dead Sea has an extremely high salt content, with a saline level between 28 and 35 percent (compared to the world's oceans' saline levels of 3-6 percent). Because of this, no animal or plant life can survive in the Dead Sea's waters. However, there are some microbes that can survive the harsh conditions, and the area surrounding the Dead Sea is home to a diverse ecosystem of plants, birds, and other wildlife depend on the Dead Sea for survival. There are at least 35 different kinds of mineral salts present in massive quantities (including potassium, bromine, calcium, magnesium and iodine). The areas surrounding the Dead Sea is also used for extraction of these minerals and tourism purposes on both the Israeli and Jordanian shores (Hoyt 2008).

A Dead Sea Works industry worker carried out a range of independent experiments to test the effects of mixing the water from the Dead Sea and the Red Sea. In one experiment of mixing 70% Dead Sea water with 30% Red Sea water, crystals of gypsum were found floating in the brine, as well as a blooming of algae (Josephs 2015).

Additionally, there is the issue of water intake that could damage coral reefs in the Red Sea's Gulf of Aqaba.

The Water Situation in the Jordan River Basin

The volume of the Jordan River flowing into the Dead Sea has decreased from 1,200 mcm/year to 300 mcm/year.

Jordan is the fourth-most water scarce country in the world. Jordan produces about 880 billion cubic meters distributed over domestic use, economic activities, and agriculture (agriculture alone consumes 58% of Jordan's total water) (Josephs 2015). Groundwater makes up the majority (54%) of Jordan's supply, and experts warn that groundwater sources are over-exploited by up to 200% of the safe yield level (The Guardian 2014). Jordan's water situation is growing worse, with the potential of having only 90 cubic meters per capita per year by 2015 (The Guardian 2014). To make matters worse, Jordan has received more than 1.3 million Syrians since the beginning of the Syrian crisis (The Guardian 2014).

Palestinians have long complained about Israeli restrictions on constructing new water infrastructure, such as new wells. They have also seen the attempt of Israel giving desalinated water as a way to tighten control of Palestinian water resources, and substituting desalinated water for clean groundwater that Israel seeks (Melhem 2015). Increases in Palestinian water consumption, to accommodate population growth and increased demand per capita, are planned. The amount of water available for agriculture, however, is frozen. Israeli authorities want Palestinian farmers to increase their agricultural productivity by adopting improved irrigation and farming techniques. In addition, approximately 20 percent of all water supplied to Palestinian communities on the West Bank is lost through old leaky pipes. Few permits have been issued to Palestinian farmers to allow them to tap existing water resources. Israeli officials limit the number of permits in the northeastern and western basins of the West Bank to keep an even flow of groundwater filling the aquifers, and to protect them from salination. Palestinian farmers also

have been denied permits to drill in the eastern water basin of the West Bank. This area is not connected to the Israeli hydrological system and contains a water surplus of some 20 to 30 MCM of water. Officials say it would be too expensive for individual farmers to pump directly from this aquifer. Organized groups of farmers have also been denied permission to pump from this aquifer (Podziba 2008).

Israel, like its neighbors, has suffered through chronic water shortages throughout history. These chronic shortages have been pointed to as causes for conflict over water between Israel and its neighbors (including Jordan) throughout its early years. Part of the controversy stemmed from Israel's decision to build the National Water Carrier, for the purpose of moving water from the Sea of Galilee southward, diverting flows that would normally go through the Jordan River to the Dead Sea. Since 1967, the conflict over water between Israel and the Arab states has ceased. In 1994, Israel signed a peace treaty with Jordan, where Israel agreed to transfer 50 mcm of water to Jordan every year from the tributaries feeding the Sea of Galilee. Israel has greatly improved its water situation through the construction of desalination plants, and has plans to desalinate 600 mcm of water from the Mediterranean Sea (Link 2013).

The Palestinian Authority has expressed concern about the plan to construct a water conveyance. The Palestinians claim that the construction of the water conveyance will undermine Palestinian water rights and that the massive abstraction of water from the lower Jordan River by Jordan and Israel and that Palestinian dispossession from the river would be legitimized. Also, if Palestinians did buy the desalinated water, Palestinians would end up paying a high price for it (Link 2013).

Conservation measures could be sufficient to bring back the lower Jordan River's flow to an acceptable level. According to a study conducted by EcoPeace, water saving and water demand management projects may save/generate up to a billion cubic meters of water in the countries (Josephs 2015). Other conservation measures could include rainwater connection, the reduction of water losses due to evaporation from exposed manmade reservoirs and reduction of water losses due to leakages. Water demand could be saved via awareness campaigns, consumer-oriented water tariffs, and greywater reuse for toilet flushing (Link 2013).

Water saving potentials within the agriculture sector are high. In Israel, agriculture consumes more than 50% of the water but only contributes to 2% of its gross domestic product. Changing cropping patterns, using treated waste water, improving irrigation technologies and removing import barriers of water-intensive crops could improve water conservation (Link 2013).

Issue Briefs

Issue 1 – Which energy source will be used for powering desalination?

The desalination plants will be built in Aqaba, Jordan and other locations as the water is conveyed to the Dead Sea. Each choice has its own positives and negatives for each party. One of the issues that parties will negotiate is what source of energy should be used for powering the desalination plants.

The options are:

- a) Natural gas from the Gaza Marine field, owned and operated by the Palestinian Authority (PA)
- b) Solar photovoltaic power generated from a Solar PV plant in Jordan
- c) Coal sold from the financier, Canada

The country that represents each energy option will receive the revenues from the sale of power.

Energy options breakdown

Before that, however, here is an explanation of what each of these numbers mean:

Levelized cost of electricity (LCOE) – it is a summary measure of the overall competitiveness of different generating techniques. The LCOE number represents the per-megawatthour cost of building and operating a generating plant over an assumed financial life and duty cycle.

The levelized cost of electricity for each of the sources is listed in parentheses next to each source.

Coal. (LCOE = \$110)

Israel, Jordan, and Palestine produce no coal. The coal to power this project would come from Canada, the financing partner.

Natural gas. (LCOE = \$78)

Israeli gas fields located off of its Mediterranean coast total approximately 1,000 billion cubic meters of natural gas. The majority of the gas is located three km beneath the shore. The gas, when recovered, is shipped via pipeline to Ashdod, Israel, and then can be transferred across Israel's network of 430 km of natural gas pipes. Natural gas produces almost 20% more electricity than coal or oil, reduces pollution and greenhouse gases (compared to using coal or oil). Currently, Israel and the Palestinian territories (which are dependent on Israeli infrastructure) have a domestic market for natural gas of about 8 billion cubic meters per year (Lidman 2015).

The Gaza Marine natural gas field was discovered in 2000, located 36 km off of the coast of the Palestinian Gaza Strip, holding an estimated 28 billion cubic meters of natural gas. Though it was initially approved to be sold to Israel, the Israeli Electric Corporation (IEC) reversed course in 2003 with fears that funds flowing to the Palestinian Authority would be used to support terrorism (Henderson 2014). With recent discoveries of Israel's own offshore natural gas fields, Israel became interested in exploiting the Gaza Marine field. Yet today, the Gaza Marine natural gas field remains unexploited.

Solar power. (LCOE = \$80)

If this energy option is chosen, a solar plant would be built in Jordan. Jordan has one of the highest potentials for solar power in the world, with average solar radiation ranging between 5-7 KWh/m², or a total potential of 1000GWh per year. Currently, Jordan has little solar energy installed, but will greatly increase its use according to its Energy Master Plan, with 30% of all households expected to be equipped with a solar water heating system by 2020, and an increase from 1% to 10% of its total energy use to renewable energy by 2020 (Zafar 2014). The installation of a solar power plant would be seen as a strong step towards fulfilling Jordan's energy goals.

GENERAL ADVANTAGES AND DISADVANTAGES OF EACH ENERGY SOURCE.

Sources: Green, 2012 and Vasa-Sideris, No Date.

Natural Gas

Advantages

- Less polluting than oil (70% less carbon dioxide compared to other fuels)
- No ashes produced after energy released
- Less expensive compared to oil
- Has high heating value of 24,000 Btu per pound

Disadvantages

- Non-renewable source of energy
- Can contaminate underground water supplies
- Can be expensive to extract

Coal

Advantages

- One of the most abundant energy sources
- Easily transportable and usable in its liquid form
- Relatively inexpensive
- In liquid or gas form, can be used to produce ultra-clean fuel

Disadvantages

- Burning coal leads to CO₂ emissions
- Mining coal is endangering to the environment and ecosystems
- Liquifaction and gasification require large amounts of water
- Non-renewable
- Dirty industry that can lead to health problems

Solar Photovoltaic (PV)

Advantages

- Clean, renewable energy
- Abundant in many places
- Cost is fast-reducing and should continue to reduce in the next years
- Low operation and maintenance costs

Disadvantages

- Intermittency issues – not shining at night, cloudy or rainy weather

- More equipment needed to convert direct current (DC) electricity to alternating current (AC)
- Costly batteries needed for energy storage
- High amount of land space needed for installation

Issue 2: How much water will be desalinated

After previous negotiations, the parties have agreed to review three options:

- 400 million cubic meters (mcm) desalinated per year. The leftover brine plus the desalinated water (320 mcm) will be pumped to the Dead Sea. Since 700-800 mcm/year is the minimum required initially to stabilize the current level of the Dead Sea, the remainder (~450 mcm) needed will be brought forth with conservation and efficiency measures brought forth by all three parties.
- 800 mcm desalinated per year. The leftover brine plus the desalinated water (720 mcm) will be pumped to the Dead Sea. This will stabilize the Dead Sea at its current level.
- 2000 mcm desalinated per year. The leftover brine, plus the desalinated water (1,920 mcm) will restore the Dead Sea up to its former level (~400 m).

Issue 3: How much water each party gets

- Israel buys up to 40 mcm. The rest of the water desalinated at the first desalination plant in Aqaba, Jordan (40 mcm) goes to Aqaba, Jordan. Israel releases 50 mcm from Sea of Galilee to Jordan.
- Israel buys up to 40 mcm and sells 30 mcm of the desalinated water to Palestinians. The rest of the water desalinated at the first desalination plant in Aqaba, Jordan (40 mcm) goes to Aqaba, Jordan. Israel releases 50 mcm of freshwater from Sea of Galilee to sell to Jordan.
- Israel buys up to 30 mcm, rest goes to Aqaba, Jordan. Conservation measures increase 40 mcm of water available to Palestine and 40 mcm of water available to Jordan.

From Howard Raiffa, *The Art and Science of Negotiation*, Harvard University Press, 1982.

Preparing for negotiations

1. Know yourself; think about what you need, what you aspire to. Search for competing and alternative deals. Analyze your other alternatives, and assign a certainty-equivalent value to your best alternative to a negotiated agreement (BATNA). Amass your arguments . . . facts, data, etc.
2. Know your adversaries. Consider what will happen if no deal is reached. Investigate the opponents; past behavior, credentials, etc.
3. Consider negotiation conventions. How open should you be? How believable is your adversary (can you trust)? Should you withhold information? Can negotiation be done in stages? Should issues be divided (fractionated) or packaged?
4. Logistics: Who should negotiate? Should roles be assigned to negotiators on your side? Do you need representation? Where should/will the negotiation take place? When?
5. Practice - simulate the experience; use role playing
6. Set your aspiration levels.
7. Who should make the first offer?

Confidential Instructions for the Canadian Representative

You are in charge of representing the interests of the Canadian government. Interested in expanding its presence in the world's foreign affairs, Canada has been recruited by the World Bank to serve as the financier of the Red-Dead Canal project. This leads Canada to be most interested in the most economically feasible form of the project that is possible.

Canada would be most in favor of supplying its coal to power the desalination project. Canada would be eager to have the revenue from oil sales. But, the Canadian government wants to ensure a stable deal more than anything else. Canada sees solar power from Jordan as being the option that has the greatest potential for strengthening regional stability, but won't stand in the way of the other parties if each party agrees on one option.

As the Canadian government is interested in maximizing revenues from coal exports, it would be most interested in desalinating the most water possible and not having conservation measures implemented. But, if that option is not agreed upon by the other parties, Canada would be interested in desalinating 400 mcm a year, as conservation appears to be the most politically sustainable option for all three parties involved, ensuring continuous revenue. Between the distribution options that do not include conservation, Canada is more in favor of the option where Palestinians would not purchase desalinated water from Israel.

Confidential Instructions for the Israeli Representative

You are in charge of representing the interests of the Israeli government. Compared to a decade ago, Israel is in much better shape with regards to its water situation, with the great expansion of desalination along the Mediterranean coast. It has given Israel much more “room for error” in its ability to negotiate with both Jordan and the Palestinian Authority. You see this desalination project as an opportunity to strengthen your relationship with Jordan, to demonstrate to the world that it can cooperate with Arab nations, to increase economic opportunity in the southern Negev through irrigated agriculture, and to improve peaceful conditions with the PA.

In regards to energy to power the desalination plants, you prefer that Canadian coal will be the option that is chosen. Though it is not the cheapest option, you prefer it to solar power because you believe that having an outside source of power is better than having the solar power generated in Jordan, for fears that Jordan and Palestine might cut you out of the arrangement if Palestine ever becomes a formal state. ***Ensuring that natural gas will not be chosen is your top priority in this negotiation.*** You are worried that allowing the PA to sell its natural gas to power the desalination plant will give it funds to increase its weaponry against Israel. From your point of view, this is a serious security issue.

The Israeli government is aware of balancing the potential risks algal blooms and gypsum crystal formation by adding too much Red Sea water into the Dead Sea. At the same time, Israel is not eager to engage in further conservation measures in its agricultural sector. Being able to grow its own food is seen as important to ensuring food security for Israel. Therefore, Israel favors desalinating 800 mcm per year that would stabilize the Dead Sea at its current level.

Israel is also in favor of the option of selling 30 mcm of the desalinated water to the Palestinian Authority. This is seen as an opportunity to 1) alleviate some of the water scarcity problems that exist within the PA and 2) a way to legitimize the Jewish settlements that are already located within the West Bank. The Israeli government recognizes that the Palestinian Authority will be opposed to this option, and is therefore open to other ideas that the PA proposes for ensuring a stronger water supply, provided that it does not affect Israel’s food security. Israel could be convinced to enact some more conservation measures, but would need concessions on other issues for this to happen.

Confidential Instructions for the Jordanian Representative

You are in charge of representing the interests of the Jordanian government. Jordan has experienced rapid population growth in recent years, particularly with housing Syrian refugees within its borders. As the fourth-most scarce water country in the world, as well as industrial and tourist interests along the Dead Sea's shores Jordan is keenly interested in the Red-Dead Canal Project as a means both to replenish the Dead Sea's waters and to provide new sources of water for both Aqaba and its northern cities.

As such, **the question of how much water will be desalinated is of utmost importance to your government.** With resorts that are no longer located on the Dead Sea shoreline due to the depletion of the Dead Sea's volume, the Jordanian government is keen to prevent the Dead Sea from decreasing any further. The Jordanian government is less in favor of implementing conservation measures to restore the flow of the lower Jordan River due to the potential costs incurred. However, if solar power was selected as their source or if other revenue streams were proposed, Jordan might be more willing to accept the conservation option.

As implied, Jordan's preferred option for the power source of the desalination plants is solar power. Jordan, like other Middle Eastern countries, has a high solar power potential. Jordan is very interested in developing its renewable energy sources and see the potential solar photovoltaic power plant as a way to jumpstart the adoption of solar power in the country. Regarding the other options, coal and natural gas, Jordan is more in favor of exploiting the natural gas reserves of the Palestinian Authority as it is closer and less polluting than Canadian coal, but does not feel too strongly about one option or the other.

For the distribution of water resources, Jordan prefers the first two options over the third, conservation option. Releasing 50 mcm of freshwater from the Sea of Galilee to northern Jordanian cities is crucial for Jordan to support the growth of its civilian and refugee population. Therefore, Jordan is more flexible on this issue. Jordan's main interest is ensuring a deal, and will compromise to ensure that the deal is made, no matter the circumstances.

Confidential Instructions for the Palestinian Representative

You are in charge of representing the interests of the Palestinian Authority. Palestinians have long complained about Israeli restrictions on constructing new water infrastructure, such as new wells. They have also seen the attempt of Israel giving desalinated water as a way to tighten control of Palestinian water resources, and substituting desalinated water for clean groundwater that Israel seeks. Increases in Palestinian water consumption, to accommodate population growth and increased demand per capita, are planned. The amount of water available for agriculture, however, is frozen. Israeli authorities want Palestinian farmers to increase their agricultural productivity by adopting improved irrigation and farming techniques. In addition, approximately 20 percent of all water supplied to Palestinian communities on the West Bank is lost through old leaky pipes. Few permits have been issued to Palestinian farmers to allow them to tap existing water resources. Israeli officials limit the number of permits in the northeastern and western basins of the West Bank to keep an even flow of groundwater filling the aquifers, and to protect them from salination. Palestinian farmers also have been denied permits to drill in the eastern water basin of the West Bank. This area is not connected to the Israeli hydrological system and contains a water surplus of some 20 to 30 MCM of water. Officials say it would be too expensive for individual farmers to pump directly from this aquifer. Organized groups of farmers have also been denied permission to pump from this aquifer.

The Palestinians claim that the construction of the water conveyance will undermine Palestinian water rights and that the massive abstraction of water from the lower Jordan River by Jordan and Israel and that Palestinian dispossession from the river would be legitimized. **Palestinians are very against buying the desalinated water because it would create Israeli control over their water resources.** The Palestinians prefer conservation measures upstream to allow for restoration of flow (and therefore the allowance of withdrawals from the lower Jordan River). If that can't be achieved, the PA would prefer not receiving any extra water at all, in the hopes of negotiating with Israel separately in the future.

The PA is also very interested in developing their natural gas resources in the Mediterranean. Harvesting the natural gas could lead to future exploitation of the resource and self-sufficiency for the PA's energy demands. The PA could be convinced to go along with Jordan's solar power plant if Jordan supports conservation of water resources to restore the flow of the lower Jordan River. Therefore, Palestinians are in favor of the 400 mcm option for how much water will be desalinated.

Confidential Instructions for EcoPeace

You are representing the interests of EcoPeace. **EcoPeace Middle East is a non-voting member of this negotiation.** Your organization was invited to play the role of an expert witness, where you provide information about how each plan could be impacting the environment. EcoPeace's primary objective is to promote cooperative efforts to protect the shared environment between Jordan, Palestine, and Israel. To accomplish this, EcoPeace seeks to advance both sustainable development and the creation of necessary conditions for lasting peace in the Middle East.

EcoPeace's highest priority, therefore is **advocating for water conservation measures that would allow for Palestinians to have access to withdrawals from the lower Jordan River.** EcoPeace sees this as a critical measure for peace and also argues for its merits in environmental sustainability. EcoPeace encourages joint water management approaches between these three parties. Frankly, any signs of an agreement would be appealing, but if able, EcoPeace would like to see an agreement that is, in their view, more environmentally sustainable.

Though EcoPeace is not in favor of the option to desalinate water, EcoPeace recognizes that this is seen as a politically viable option between the three parties. It is therefore in favor of arranging for solar power to generate power for the desalination plants.

As part of the negotiation, EcoPeace wants to make clear the environmental risks associated with this project, particularly the potential for Red Sea water to cause algal blooms and gypsum crystals in the Dead Sea. You will emphasize these risks and try to advocate for as little mixing of these water sources as possible.

Confidential Instructions for the World Bank (Mediator)

The World Bank is sponsoring this project. As such, it is also playing the role of mediator between the negotiating parties. Therefore, your responsibilities are:

Prepare

- Mediators should contact each negotiating team confidentially to assess interests, describe the negotiation process, assist parties in determining their BATNAs (Best Alternatives to a Negotiated Agreement), and explore potential options and pathways for solutions.
- **Set the agenda** based on information from the confidential interviews with each negotiating team.
- Establish the “**rules of the game**” – how the negotiation will proceed.

Create Value

- Encourage negotiating teams to create enough value as possible, “expand the pie” and avoid negotiation traps.
- Assist the negotiating teams in developing packages that might be acceptable.

Distribute Value

- Assist the teams in identifying criteria that can be used to divide the pie in a defensible and explainable way. Consider feasibility, precedence, efficiency, fairness, and common sense.
- Develop a single text draft agreement for parties to reflect upon, improve, and finalize.

Mediate

- Control the dialogue. Ensure that parties don’t talk over each other.
- Keep the negotiation moving. All talking goes through you.
- Lastly, you are expected to be impartial. Maintain your actual impartiality as well as the appearance of impartiality.

Appendix 1: Map of the Negotiation Area.



The Washington Post

Rough path of the pipeline. Source: Booth and Schneider, 2013.

ACTIVE LISTENING

Appendix 2. The work from which this rubric is taken includes the following notice of copyright: © 1996 Barkai.

	Instructor	Active Listener (Student)	Instructor Continues	What Happened
1	I just had this great class about communication.	<u>What I hear you saying is</u> you had a great class about communication.	Yeah, that's what I said. Are you feeling OK today?	Classic Parrot But you're Busted!
2	The instructor was terrific. It was really good. The time went very fast.	<u>It sounds to me like</u> you learned a lot and had fun too.	That's really true. I was surprised by how much I learned.	The classic Paraphrase. Maybe busted by friends (but strangers and emotional friends won't notice)
3	It all sounds so <u>simple, but</u> there are some <u>complicated</u> parts.	... simple but complicated?	Yeah, the ideas are easy, but there is really a lot too it.	Parrot the phrase
4	You know I never thought about the fact that in a conflict situation, what the other guy is saying, is often not what he meant to say.	... the words people use is not what they are thinking ... ?	Right, and it seem so obvious after that class. In some ways that explains what happened between Peter and me.	Re-phrase
5	Things were really heating up between us. It was getting weird, but neither of us recognized that.	... the conflict was building but you didn't notice it happening?	Oh, we noticed it all right. We both did. But it just shouldn't have happened between good friends like us.	A.L. self corrects
6	What do you think you would you have done in a situation like that?	... you are concerned about what to do in spots like that?	I really am. It shouldn't have happened, and I don't want it to happen again. He and I need to sit down and talk about it when we are both feeling calmer.	A.L. a question
7	[if they go on and on and on and on]	<u>Wait a minute! Let me see if I understand you correctly.</u> ..		They'll love you for interrupting them.

DR. JONES

UGLI ORANGE

You are Dr. Jones, a biological research scientist employed by a pharmaceutical company. You have recently developed a synthetic chemical useful for curing and preventing Rudosen, a disease contracted by pregnant women. If not caught in the first four weeks of pregnancy, the disease causes serious brain, eye, and ear damage to the unborn child. Recently, there has been an outbreak of Rudosen in your country and several thousand women have contracted the disease. You have found, with volunteer victims, that your recently developed synthetic serum cures Rudosen in its early stages. Unfortunately, the serum is made from the Ugli orange which is a very rare fruit. Only about 4,000 of these oranges were grown in the whole world this season. No additional Ugli oranges will be available until next season, which will be too late to cure the present Rudosen victims.

You have demonstrated that your synthetic serum does no harm to the pregnant women. There are no side effects. Unfortunately, the present outbreak of Rudosen was unexpected and your company had not planned on having the serum available for six months. Your company holds the patent on the synthetic serum and it is expected to be a highly profitable product when it is generally available to the public.

You have recently been told a Mr. Cardoza, a South American fruit exporter, has 3,000 Ugli oranges. If you could obtain all 3,000 of these Ugli oranges, you could make enough serum from the juice of these oranges to both cure all the present victims and provide sufficient inoculation for the remaining pregnant women in your country. No other country currently has a Rudosen threat.

You have been told that Dr. Roland is also urgently seeking Ugli oranges and is also aware that Cardoza has some of these special oranges. Dr. Roland is employed by a competitor pharmaceutical company. Roland has been working on biological warfare research for the past several years. There is a great deal of industrial espionage in the pharmaceutical industry. Over the past several years, Dr. Roland's company and your company have sued each other for infringement of patent rights and espionage law violations several times.

You've been authorized by your company to approach Cardoza to purchase the 3,000 Ugli oranges. You have been told Cardoza will sell them to the highest bidder. Your company has authorized you to bid as high as \$250,000 (USD) to obtain the juice of the 3,000 available oranges. Before approaching Cardoza, you have decided to talk with Dr. Roland. Think carefully about what information you are willing to tell the other side, and what information you will not disclose.

UGLI ORANGE

You are Dr. Roland, a research biologist for a pharmaceutical company. Your company has a government contract to do research on methods to combat enemy uses of biological warfare, but the government has asked your company for assistance with an immediate problem.

Recently, several old experimental nerve gas bombs were moved to a small Pacific island. While they were being moved, two of the bombs developed leaks. The leaks are presently controlled, but government scientists believe that within two weeks the gas will leak out of bomb chambers and escape. There is no known method of preventing the gas from getting into the atmosphere and spreading to the coast. If the leak occurs, several thousands of people will die or incur serious brain damage.

You have developed a synthetic vapor which will neutralize the nerve gas if it is injected into the bomb chamber before the gas leaks out. The vapor is made with a chemical taken from the Ugli orange, a very rare fruit.

You've heard that a Mr. Cardoza, a fruit exporter in South America, has 3,000 Ugli oranges. If you get all 3,000 Ugli Oranges you could make enough of the chemical from the rind these oranges to neutralize all of the gas if the serum is developed and injected efficiently. Your company has not been able to locate any more of these Ugli oranges. As far as you know, there are only 3,000 such oranges in the world crop this year.

You have learned that Dr. Jones is also urgently seeking to purchase Ugli oranges and that Jones is aware that Cardoza has oranges available. Dr. Jones' company and your company are highly competitive, and there is a great deal of industrial espionage in the pharmaceutical industry. Your company and Dr. Jones' company have sued each other twice for infringement of patent rights. One law suit is still going on.

You've been authorized by your company to approach Cardoza to purchase the 3,000 Ugli oranges. You have been told that Cardoza will sell them to the highest bidder. Your company has authorized you to bid as high as \$250,000 (USD) to obtain the oranges.

Before approaching Cardoza, you have decided to talk to Dr. Jones. Think carefully about what information you are willing to tell the other side, and what information you will not disclose.

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