

Strategies for Risk Communication:
An Overview of Issues Concerning Water Access Disparities,
Sanitation Disparities and Environmental Concerns

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Abstract

Water is an essential resource to human life, but there is unequal access to the resource between poor and rich countries. For countries and regions with inadequate access to fresh water, there is a struggle for sanitation, survival and the ever looming possibility of war. This document provides strategies for communicating the risks associated with unequal water and sanitation access. This document also lays out background information regarding the current state of unequal access. The purpose is to gather information about the disparity and outline ideas for effectively communicating the risk.

Overview

Throughout history, water has always been a precious and sacred resource to humans. It is the essential driving force behind all life. All life forms use water differently, but whether an animal, plants or environmental cycle, water is essential to survival. Earth's natural cycles provides an equilibrium between water consumption and water production. But recently, human consumption of water has thrown off the balance. Through environmental cycles, water is extracted from the earth, stored in the sky and then released in rain drops back down to the earth. There is a sensitive cycle of use and creation. Water is a renewable source, but only so much can be created at one time. Humans have thrown off this sensitive cycle with over population. We are using more water than is being produced by the earth. For thousands of years, life and earth and the environment were working in a very efficient cycle. The environment and life forms were only using as much water as was provided. Human population growth has exploded in the last century and we are using more water than the cycle has provided. Suddenly, the earth is facing shortages on the world's most important resource. Not only that, humans have tainted the cycle by polluting the environment. Rain is more acidic and harmful to plants and animals because of man made pollutants in the air. Rivers and other freshwater resources are contaminated with human waste.

Despite these problems, people have made large advancements in water accessibility. We take for granted that safe drinking water comes out of the faucet when we turn a handle. Humans built the infrastructure and developed the technologies to transport and provide water access for millions across the world. Because of advancements in irrigation technologies, agriculture is more efficient than. From a distance, it might seem as if people are effectively dealing with water distribution and treatment, but in fact, this isn't the case. About 1.1 billion people lack access to

clean water and some 2.6 billion are without good sanitation.¹ Those same 1.1 billion people use about 1.3 gallons of water a day while the average American citizen uses 40 gallons of water a day.¹ There is a clean water access disparity between developing countries and developed countries in the world. Suddenly, water isn't a spiritually precious resource, but an economic good. According to the recent train of thought, being a human being doesn't entitle you to clean water access, its money that brings you the clean water.

This document defines and discusses the issue of water accessibility, sanitation and the environment. It also provides information as to what is currently being done, and possible solutions for the future. After the frame work for the issue has been laid out, the second part of this document will discuss strategies for communicating the risks involved with the future of water accessibility and sanitation.

This document is aimed toward informing my writing team and other activists interested in communicating the risk of water accessibility and interested in the future of water for this planet. Because the audience of the risk communication isn't the same as the stakeholders, certain strategies have to be applied to the risk communication. The target audience for the whole project is policy makers, scholars and activists in the United States. The stake holders are primarily citizens of undeveloped nations who are lacking proper water access and sanitation. All people on the Earth have some concern about the risk communication because it deals with the overall handling and treatment of fresh water which is a resource everyone needs. Because the audience has the power and wealth to mitigate the access disparity, but have little stake in the situation, the risk communication has to be tailored toward bringing the audience on board. This means drawing them into the issue and motivating them to get involved. This document will go

into further depth about strategies for communicating the risk about issues dealing with the water access disparity.

Stating the Issue

Water is a fundamental right, independent of market supply.¹ This principle is becoming harder and harder to follow with overpopulation, polluted waters, inadequate treatment, and increasing demand for water in agriculture and industry. 70% of the world's fresh water resources are used for agriculture with another 22% used for industry.² That leaves 8% of fresh water for domestic consumption. Don't let the domestic water usage statistic throw you off, people who have access consume way more than the necessary amount. In fact, people in richer countries use about ten times more water than people in developing countries.² A child born in the developed world consumes thirty to fifty times more water than a child from the developing world.¹ Aside from the ratios of distribution, the fact is that fresh water supply is constant but the human population is growing. The population has tripled since the beginning of the 20th century and is expected to grow by 50% in the next 50 years.¹ Most of the population will move to urban environments where water supply is in high demands. By 2010, 51.3 percent of the world's population will live in urban areas.¹ Urban areas produce a lot of waste, quickly in a small area which contaminates the surrounding area and water systems leading to a viscous and unhealthy cycle which can often lead to disease and death.

More and more facts can be spilled across the page to further knock the point home, but this isn't necessary. The problems are diverse but can be effectively divided into three categories for this document. There is a fresh water and sanitation access disparity in the world between developed and developing countries. Human population growth is hurting the environment and is hurting the earth's most precious resource. All three issues relate to one topic: water.

Access Disparity

Some where down the line, water became less of a fundamental right, and more of an economic commodity. Fresh water is a limited resource and everyone desires it. When something is in ever growing high demand and there is a limited source, of course there is going to be competition. The weapon used in modern day human competition is monetary wealth. Developed countries have been able to set up water systems, develop technologies and build infrastructure to provide sanitized water to its citizens. Developing countries have not been able to treat and provide water the same way. Because developed countries can provide water through a relatively efficient system, even the poorest of citizens can find ways to access clean water. In developing countries, such infrastructures and technologies are absent or in poor quality, leaving a very inefficient system that causes the poor to pay more. In developed countries, the poor must buy small quantities from street vendors which charge relatively high prices for small amounts of water. The ability for developed countries to provide water to its citizens isn't some noble act, they just have the means to do so. Unfortunately, most water systems in many developed countries are over a century old with century old infrastructures. So although the systems appear to be effective, they aren't as good as they could be and they will continue to deteriorate. These old systems aren't as robust as they used to be, and aren't as efficient as they could be. In New Orleans, the pumps that remove water from the city and keep the city above water are over a century old. During Katrina, the old technologies couldn't handle the stress and were flooded. This was the case for many key water systems in New Orleans that kept the city dry. Old cities all across the United States are constantly repairing old pipe systems. The populations in cities like New York and Chicago have grown much larger in the last 100 years, yet the water systems

and infrastructures are the same. Soon, instead of just constant, small repairs here and there, water systems in these old cities will need to be totally redone.

Developed countries have also had the ability to “claim” water sources. The old thinking that has apparently stuck was that if you own the land, you own the resource. But this way of thinking isn’t very ideal in such a global world where countries rely less on self sustaining and more on other regions for economy and resources. For instance, the U.S was able to build dams all over the Colorado River. The river once flowed into Mexico with a full head of steam, but now flows into Mexico weakly, and the supply is saltier and nearly exhausted. Dams allow the builder to use the natural resource of flowing water for economic benefit. One fifth of the world’s electric power comes from hydro-sources, 95% of which coming from the largest of dams.¹ Dams can be used to characterize much of the water issues. Only wealthy countries that have the means to build dams can do so. Dams benefit the society greatly, but hurt the environment.

Sanitation Disparity

Dams stop the natural flow of moving water which can have drastic environmental and provide sanitation consequences. Water becomes stagnate and much is lost to evaporation. As the water currents slow, it is easier for the water to become contaminated with disease and pollution.

Wealthier countries have been able to sanitize the water before it is accessible to the public. Poor countries don’t have the means to adequately sanitize the water; this leads to disease. 40% of the world (2.6 billion people) are without basic sanitation.¹ 2.1 million people die every year from diarrheal diseases (including cholera) associated with inadequate water supply, sanitation and hygiene.² Second to respiratory infections, unclean water is the second

leading cause for death, killing 1.8 billion children under the age of five annually.¹ Poor countries lack so many sanitation abilities that the developed world takes for granted. Because of a lack of money, technology and infrastructure, developing countries cannot bring clean water in and cannot take dirty water out. Developing countries don't always have the means to remove waste, or there is more pressing and immediate issues at hand. So often, waste is dumped in convenient and cheap place which often happens to be in the water, or areas where waste runs into the water systems that provide drinking and bathing water for the citizens. Because of this, it is hard to find clean water so there isn't sanitary water in homes, public areas or hospitals. Developing countries cannot establish good sanitation systems and it leads to disease. As a whole, developing countries lack water resources, but often, developing countries have the water, just lack the ability to sanitize and distribute the water.

Environmental Consequences

The same countries that have the abilities to build dams and take advantage of the water resources are the same countries that produce the most amount of pollution. China has about half of the world dams, followed by the U.S. China and the U.S are the biggest contributors to greenhouse gasses such as carbon dioxide, methane, nitrous oxide and other pollutants. Obviously, there are many reasons, but it is an interesting correlation.

Only 2.5% of the earth's water is fresh water.² Of that 2.5%, 68.9% is currently locked in glaciers, 30.8% is stored in under ground reservoirs, and only .3% is in rivers and lakes.² Even with these statistics at our hands about how little fresh water is in lakes and rivers, we still continue to pollute them. We contaminate the atmosphere and create acidic rain which is harmful to plants, animals and terrain. We pour waste into the soil and water which spoil each other. As humans continue to populate the world, we strain the earth's resources and lower the quality of

the environment. As we continue to pollute the environment, we continue to lower our fresh water standards, and ultimately, are standards of living.

Water Conflicts and Current Efforts Toward Water Equality

It might seem as though oil is the resource of conflict, but as human population grows, water will become the center point of much conflict. In the Middle East, oil is the resource of money and water is the resource of life. The Egyptian president claims that his country will never go to war again, except to protect its water resource. This is not an uncommon statement in the Middle East, countries like Jordan and many others have admitted that water is the resource that they will protect with war. The Nile River is the world's longest river and feeds water to nine different countries, unfortunately, these countries populations will likely double in the next 20 years creating an ever higher demand for water. Water conflicts are especially tough in areas where many countries share only a few water resources. There are 264 rivers shared by two or more states with 40% of the world's population in shared river basins.¹ For instance, Turkey has been damming the Tigris and Euphrates rivers which will significantly cut down on Syria's and Iraq's fresh water supply. Currently, an issue needing much attention in this world is the conflict between Israelis and Palestinians. It is a very heated issue where sides are often taken. The fact of the matter is that the living conditions of the Palestinians is much lower than the living conditions of the Israelis. In terms of water, the average Israeli gets access to an average of 350 liters of water a day, and a Palestinian gets access to about 71 liters¹. This speaks momentously about the lifestyles between the people. As people begin to notice that there won't be enough water for the continuously growing human population, conflicts will begin to arise. But there is another approach, we don't have to wait until the issue rises to a boiling point, we can have preventative measures now.

The United Nation's Millennium Development Goals is a list of goals to accomplish and issues to tackle. Water accessibility and sanitation environmental awareness are all high on the list. Countries and areas have been meeting to plan and prepare guidelines and rules for the future involving these topics. Progress is slowly being made with water and environmental summits, and treaties, but a lot of progress has yet to be made. The percentage of people world wide whom have access to fresh water has risen from 78% in 1990, to 83% in 2004.³ Individual countries are taking liberty into their own hands to provide water. Libya is embarking on a plan to tap into these pockets of water by creating a pipe line water system called the Great Man-Made River. According to the Great Man-Made River Authority, eventually 6 million cubic meters of fresh water will be pumped from the Sahara Desert to the cities along the northern strip of Africa. There is already 4,000 km of pipe lines set down.⁴ Many other countries are taking the liberty to group together and plan for better water access and sanitation.

As the issue continues to grow more and more sensitive, it is important to plan and organize for the future. Countries must group together and negotiate long term plans. A realm which is being explored is the privatization of water companies to provide water to citizens in countries where the government has failed to do so. This treats water as an economic commodity, but can prove to be effective in some scenarios. The future is all about planning and exploring new ideas.

Most importantly, things have to change on a grass roots level. People must take only what they need. People need to start treating water like it is the sacred and precious resource it was once viewed as.

Risk Communication: An empathetic and technical equilibrium approach

Risk communication strategies concerning water access and sanitation must strike a balance between appealing to the audiences through an empathetic and emotional side, and informing with a technical and objective approach. This is necessary because the audience is different from the stake holders. The audience is U.S policy makers, scholars and activist, while the stake holders are primarily citizens of underdeveloped countries who yearn for better water access and sanitation. Since the audience has the abilities to mitigate the situation and provide financial solutions, risk communicators must appeal to them.

This “empathetic approach” is necessary and valuable to the situation because the audience feels no immediate threat. There is no looming fear of not getting enough clean water in developed countries. Since they don’t feel threatened or concerned by the situation, they should have no reason to care. That is why empathy is an essential driving force behind our approach. The risk communicators have to get the audience to care some how and empathy is the best approach.

We do this by appealing to the pathos and ethos of the audience. We can tell anecdotal stories of suffering because of water issues, and then back it up with statistics. We can get the audience thinking abstractly about solutions by proposing ideal outcomes, and then propose realistic ones for them to act upon. Instead of shoving technical information down their throats, where interest might be lost because they have no stake, we provide stories to get thoughts and emotions spinning. The whole thought is that we provide illusionary stories that grow and live inside the minds of the audience, then provide a technical and structural frame for the audience’s objective mind to act upon. Instead of telling them that they should feel bad for others with bad water conditions, and forcing them to act, we tell them stories and let their minds do the work.

Risk communicators get the audience's emotional and empathetic mind involved in the situation by providing anecdotal stories. We can talk about a family in Africa and their struggle for water, and we can talk about a village in the Middle East that is riddled with disease because of improper sanitation. After we present these stories to get their minds moving, we provide the facts to put the issue into context.

We must find the equilibrium of emotional and empathetic language with the technical and objective language. The risk communicators draw the audience in with emotions, and provide technical solutions and facts to act upon.

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