

**A Study Guide Series on Peace and Conflict**  
For Independent Learners and Classroom Instructors

# **Natural Resources, Conflict, and Conflict Resolution**



**United States Institute of Peace**  
Washington, DC



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## Preface

The international system has witnessed dramatic changes in the recent past. Developments around the globe and at home challenge us to rethink the role of the United States in the international community. What is our nation's place in this increasingly complex global picture? What can we do to nurture and preserve international security and world peace?

Our country depends on knowledgeable and thoughtful students and educators to build peace with freedom and justice among nations and peoples. In the belief that the issues surrounding peace, justice, freedom, and security are vital to civic education, we developed this study guide to expand readers' knowledge, perspectives, and understanding about these complex topics.

### About the Study Guide

This study guide is designed to serve independent learners who want to find out more about international conflict and its resolution, as well as educators who want to introduce the topic to their students. The main text discusses natural resources and related issues that play significant roles in managing conflicts and building international peace.

Other features of the study guide include:

- A glossary of terms to help the reader build vocabulary used in the discussions about the topic.
- Discussion questions and activities to encourage critical thinking and active learning.
- A list of readings and multimedia resources for additional investigation and learning opportunities.

While this study guide was developed as part of the National Peace Essay Contest, the topic's importance to the shape of international peace and security, now and in the future, is clearly worth additional investigation and a deeper understanding. It is our hope that the general public will use the contents of the study guide to deepen their understanding of international peace and conflict.

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**First published September 14, 2007**

## About the United States Institute of Peace

The United States Institute of Peace is an independent, nonpartisan, national institution established and funded by Congress. Its goals are to help prevent and resolve violent conflicts, promote post-conflict stability and development, and increase peacebuilding capacity, tools, and intellectual capital worldwide. The Institute does this by empowering others with knowledge, skills, and resources, as well as by directly engaging in peacebuilding efforts around the globe.

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## **Complex Relationship between Natural Resources and Violent Conflict**

Note to students who are planning to enter the National Peace Essay Contest:

We have prepared this guide as an introduction to the issues surrounding natural resources and conflict. Please do not use this guide as a reference in your essay or as a bibliographic citation. We encourage you to consult the references listed in the resource section and in the endnotes. These resources may be included as references in the bibliography.

### **Introduction to Natural Resources and Conflict**

For most of us, conflict over natural resources is not a part of everyday life. We wake up in the morning and turn on the faucets to brush our teeth, shower, and drink a glass of water. We drive to and from work, school, and other activities, stopping every so often to fill up the tank with gas. We use energy to heat our homes, to cook food, to light our streets. Processed timber is used to form our desks, pencils, and paper. We sometimes buy diamond jewelry as a token of love or status.

But in many areas around the world, access to natural resources cannot be taken for granted. According to the United Nations, many women walk several hours a day just to find water; and more than two million people, most of them children, die from diseases associated with water stresses each year.<sup>1</sup> Some experts are predicting that the world's supply of oil will run out in the not too distant future. And almost half of our old growth forests have been destroyed.

The picture gets much more complicated when access to these natural resources become the reason for a conflict or, much more frequently, are used to fuel a conflict. Paul Collier, an expert on the economics of civil war, estimates that close to fifty armed conflicts active in 2001 had a strong link to natural resource exploitation, in which either licit or illicit exploitation helped to trigger, intensify, or sustain violence. In Pakistan and Bolivia, for example, violent protests have broken out over the distribution of water. In the Middle East, disputes over oil fields in Kuwait, among other issues, led to the first Gulf War. In another example, the rebel groups Revolutionary United Front (RUF) in Sierra Leone and National Union for the Total Independence of Angola (known by its Portuguese acronym UNITA) used revenues derived from diamond mining to fund their rebellions against their respective governments. Research has also indicated that wars appear to be lasting longer: the expected duration of conflict is now more than double that of conflicts that started prior to 1980.<sup>2</sup> One possible explanation is that it is now much easier to sustain and fund conflict than it used to be.

It may be helpful to think of natural resources in terms of how they are used. Some resources, such as water and land, are used locally and may not have much impact beyond the local area. Other resources, such as timber, minerals, and oil, are used to produce revenue. It is these revenue-producing resources that cause the most problems, sometimes called the resource curse—the paradox that countries with abundant natural resources often have less economic growth than those without natural resources. The dependence on a few sources of revenue typically discourages diversification, leads to overheating of the economy, and increases volatility of prices and revenue. The abundance also often leads to government mismanagement and corruption.

In these and other ways, competition over natural resources can lead to, intensify, or sustain violence. (It should be noted here that conflict over natural resources is often part of, and exacerbates, a larger struggle over political, economic, cultural, or religious issues in the society.) Less dramatic, and less well covered

by the media, is the role natural resources can play in resolving and managing conflict and in preventing the reoccurrence of violence in the post-conflict environment. To help students understand this role, this study guide will briefly describe those natural resources that are typically involved in violent conflicts, the role of natural resources as causes of conflict or escalation of conflict, and their role in managing conflict and bringing about peace.

## **Types of Natural Resources**

The World Bank defines natural resources as “materials that occur in nature and are essential or useful to humans, such as water, air, land, forests, fish and wildlife, topsoil, and minerals.”<sup>3</sup> These resources can be classified as renewable or nonrenewable. In most cases, renewable resources such as cropland, forests, and water can be replenished over time by natural processes and—if not overused—are indefinitely sustainable. Nonrenewable resources such as diamonds, minerals, and oil are found in finite quantities, and their value increases as supplies dwindle. A nation’s access to natural resources often determines its wealth and status in the world economic system.

Below are some categories of natural resources. Agriculture, though strongly linked to natural resources, is generally not thought of as a natural resource as it depends largely on cultivation. However, economies that are heavily dependent on agriculture certainly depend heavily on other natural resources such as water and land.

This list is one of many ways to categorize natural resources. Because the concept of natural resources is broad, the categorizations and definitions of natural resources can vary among disciplines. Other examples of categorization are: strategic raw materials, sources of energy, shared water resources, and food; and biological resources, energy resources, food resources, land resources, mineral resources, soil resources, and water resources.

### **Drinkable Water**

Water is a necessity of life, and we use it for drinking, washing, agriculture, and industry. The United Nations World Water Assessment Programme estimates that every individual needs 20–50 liters (21–53 quarts) of clean water every day.<sup>4</sup> Since water covers nearly three fourths of the globe, we tend to think of it as an abundant resource, but in fact drinkable water can be very scarce. Drought affects almost every continent and appears to be growing worse. The National Center for Atmospheric Research has found that the percentage of the earth’s land area stricken by serious drought has more than doubled since the 1970s.<sup>5</sup> In addition, water becomes scarce through pollution or restricted access. According to the United Nations, 1.1 billion people live without clean drinking water, and 3,900 children die every day from water-borne diseases. As the global population continues to rise—some predict a 40–50 percent increase within the next 50 years—water stress (when the demand for good quality water exceeds the supply) will become even more of a problem in the future.<sup>6</sup> Water scarcity causes and sustains conflict in many parts of the globe; violent conflict over water resources has broken out in countries as diverse as China (Shandong and Guangdong Provinces 2000), Ethiopia (2006), India (2004), Kenya (2005), and Yemen (1999).<sup>7</sup> In the Darfur region of Sudan, for example, much of the unrest is due to water shortages. The recent discovery of an underground lake the size of Lake Erie may provide the resources to help end the conflict.<sup>8</sup>

### ***Jordan River Disputes***

*In the 1950s and 1960s, the animosity between Israel and its neighbors was heightened by disputes over the headwaters of the Jordan River. Occasionally, the friction led to armed clashes, including Israeli attacks in 1965 and 1966 on Syrian construction sites that were part of a plan to divert water from Jordan River tributaries. These disputes helped create the pretexts and climate for the regional war in 1967.*

## **Bodies of Water**

Bodies of water such as oceans, seas, lakes, and rivers can also be linked to conflict due to their roles in transportation, development, and culture. A population's dependence on sources of income within bodies of water, such as fisheries and offshore oil fields, can lead to conflict. In addition, neither fish nor water follow country borders, and both must often be shared among countries. Disputes over fishing led to the "cod wars" between Britain and Iceland in the 1950s and 1970s (no one was injured but shots were fired and several ships were rammed), while natural resources lie at the heart of the contested claims in the South China Sea. More than 260 river basins, for example, are shared by two or more countries mostly without adequate legal arrangements.<sup>9</sup> In fact, however, most conflicts over water are resolved peacefully, perhaps because water is so important. There are more than 3,800 declarations or conventions on water. That so large a number of agreements exist for water clearly shows the potential for negotiated settlements in disputes over natural resources rather than violent conflict.<sup>10</sup>

## **Land**

Because of population growth and environmental degradation, land that can be used for personal, industrial, or agricultural purposes is becoming increasingly scarce. Of course, possession of land means access to many other resources, such as minerals, timber, and animals, and land therefore often holds a high economic value. In addition, communities often have strong emotional and symbolic attachments to land and the resources on it. It is easy to see why competition for control of valuable land, including issues of government authority and regulation, can cause or sustain conflict. Traditionally, most wars have been fought over control of land (along with other issues); for example, Ecuador and Peru have fought several wars over their disputed border. More recently, violent conflict over land has occurred in China, East Timor, Kosovo, Rwanda, and Tajikistan, to name only a few examples.

## **Timber**

Timber functions primarily as a source of income. As is the case with water, timber is an increasingly scarce resource. Although forests cover 30 percent of the world's land area, 46 percent of the old growth forests have already been destroyed.<sup>11</sup> Population growth and industrialization are destroying rainforests and causing environmental degradation. As a commodity that is easily accessible, easy to transport, versatile, lucrative, and necessary for reconstruction and development, timber can play an important role in all stages of peace and conflict. Examples of conflict over timber can be found in Burma, Cambodia, the Democratic Republic of Congo, and Liberia. On the other hand, there are also examples of benefit sharing plans in Indonesia and community forest management enterprises in Latin America.<sup>12</sup>

## **Oil and Gas**

The two primary sources of fuel are oil (petroleum)—a flammable liquid that can be refined into gasoline—and natural gas, a combustible gas used for fuel and lighting. Fuel scarcity, or at least access to fuel, is one of the greatest concerns for developing and developed countries, given their dependence on energy sources. With a greater global rate of industrialization, many countries have invested in and paid particular attention to alternative types of energy such as nuclear, electrical, wind, and solar energy. Still, the U.S. Department of Energy estimates that by 2020, two thirds of the world's known petroleum reserves will be consumed.<sup>13</sup> Many mainstream media sources and other organizations warn that easily accessible oil, especially in Saudi Arabia, is rapidly disappearing and that the world will soon face the end of the oil era.<sup>14</sup> Moreover, many of the world's largest petroleum reserves are located in areas suffering from political instability or conflict, such as Iran, Iraq, Nigeria, Venezuela, and Sudan. Thus the value and demand for fuel, especially petroleum, allows conflicts in these areas to have an impact on the global economy. On the other hand, the developed world's increasing demand for oil, and its search for "supply security," can exacerbate existing conflicts.

As with rivers, oil fields and pipelines frequently cross borders, which often contributes to tensions but



also puts a premium on cross-border cooperation. After East Timor separated from Indonesia in 2002, for example, it renegotiated the agreement Indonesia had made with Australia over oil and gas rights in disputed areas of the Timor Sea. And several nations are involved in ongoing negotiations with various parties to build pipelines in the Caspian Sea region, including Azerbaijan, Georgia, Kazakhstan, and Russia.

There are a number of new approaches to facilitate the best use of oil revenues, such as those supported by the International Monetary Fund (IMF), which seeks to improve governance in resource-rich countries such as Nigeria, Azerbaijan, and Gabon and reduce the potential for fighting over access to revenues.<sup>15</sup> Even with international encouragement, however, it has been enormously difficult for the Iraqis to negotiate equitable arrangements for sharing oil and gas revenues among the regions after the fall of Saddam Hussein.

### **Minerals**

Minerals are naturally occurring substances obtained usually from the ground. According to the United States Agency for International Development (USAID), “valuable minerals become conflict minerals when their control, exploitation, trade, taxation or protection contributes to, or benefits from, armed conflict.”<sup>16</sup> Conflict minerals have varied commodity values and occur in many geographical locations: for example, diamonds in Western Africa, amber in Russia, and gold in Indonesia. While minerals such as gold and diamonds hold significant value as gems, all minerals generate revenue and power for governments, rebel groups, or whoever owns the land or has the ability legally or illegally to extract them. Furthermore, conflicts over minerals do not necessarily stay within boundaries; neighboring countries sometimes compete for resource wealth and thus exacerbate conflict or prevent peacebuilding.

Diamonds are the conflict minerals that have received the most attention. They have been used by several rebel groups in Africa as a source of income, including groups in Angola and Sierra Leone.<sup>17</sup> They are easy to steal and easy to move to market and difficult to trace. Protests by non-governmental organizations (NGOs) and other concerned groups in the 1990s about the brutal human rights violations connected to the conflict diamond trade led to efforts by the international community to develop a certification system that has helped curb their presence in the international market. There have also been proposals to develop a “fingerprinting” system that would define chemical impurities unique to each mining site; a national database would track each consignment of minerals.

Other examples of conflict minerals include coltan (tantalite, used in cell phones, computers, and game consoles) in the Democratic Republic of Congo and copper in Papua New Guinea.

## **The Role of Natural Resources in Society**

Natural resources are an integral part of society, as sources of income, industry, and identity. Developing countries tend to be more dependent on natural resources as their primary source of income, and many individuals depend on these resources for their livelihoods. It is estimated that half of the world’s population remains directly tied to local natural resources; many rural communities depend upon agriculture, fisheries, minerals, and timber as their main sources of income.<sup>18</sup> A developing country’s ability to modernize economically is often dependent on access to natural resources. Water is essential for both successful agriculture and manufacturing; for example, the lack of clean water for the labor force can drastically inhibit a country’s economic growth.

Some natural resources play a central role in the well-being of the local community and some are used for trade purposes. Natural resources, both renewable and nonrenewable, that are controlled by the state (which is the case in most developing countries) are used as exports by the government to attain profit and

power. Developed countries have established an industrial infrastructure that relies heavily on imports of natural resources, and mineral-rich countries are positioned to supply that demand. Many of these resources have great value in the global market, which allows the developing countries in possession of the resources to be active participants in the international economic system. Perhaps the best example of developing countries organizing to control their own fate is the Organization of Petroleum Exporting Countries (OPEC), which works to protect the interests of oil-producing countries while maintaining stable oil prices and reducing the potential for conflict.

Not only do natural resources serve as a commodity in the local or global economic structure but they also play a prominent cultural role for many local communities and may even be a point of pride for the nation as a whole, a part of the country's patrimony (one of the reasons many developing nations want to control their natural resources). Resources such as land, water, and timber (forests) usually have historical and cultural significance, serving as the home of ancient civilizations, historical artifacts, and cultural practices. These resources are part of the identity of a community or people. People hold a powerful sense of attachment to resources in which they have invested labor and sweat, in some cases for generations. Many people in Southeast Asia fish as a means of income, for example, and they have developed elaborate cultural and religious traditions that accompany their work.

### ***Ancestral Domain in the Philippines***

*A significant principle at stake in the armed clashes in the Philippines between the indigenous Moro population in Mindanao and the government is the issue of ancestral domain. The Moros claim that control over the environment and the region's natural resources is rightfully and legally theirs because of historic rights, legal titles, customary law, and cultural bonds. Ancestral domain has been the basis for their demands (at times violent) for self-rule.*

## **The Stakeholders in Natural Resources**

There are many groups whose interests in and actions concerning a region's natural resources can lead to or exacerbate conflict. These stakeholders may include local communities, governments, rebel groups, and outside actors.

As discussed previously, natural resources are deeply tied to local communities through income, culture, and identity and thus often hold more than purely economic value for individuals and communities.

Governments provide oversight for resource management, regulate trade and development, establish licensing protocols, levy taxes on resource industries, and engage in natural resource extraction directly or by selling extraction rights. Governments that receive substantial income from natural resources may have less incentive to enter into power-sharing arrangements or promote democracy-building efforts because they have the means to buy off or intimidate their opponents. In those cases in which there is little government accountability or financial transparency, government officials are more likely to take bribes, funnel public funds to private accounts, and ignore environmental degradation, resource-related violence, and human rights violations. Often in developing countries with weak state institutions, powerful groups are able to use persuasion or force to gain improper access to natural resources and their profits.

Rebel groups have used natural resources as a commodity to fund weapon purchases and mobilize fighters. Using violent means to capture resource-rich territories and forced labor to extract natural resources, rebel groups have set up lucrative businesses that profit from participation in the global market, one notable example being the drug trade. Paul Collier argues that rebel groups in some developing

countries have found ripe conditions to make rebellion financially and militarily viable.<sup>19</sup>

Among the most important actors in post-conflict stages are those outside parties who can influence natural resource management: powerful governments of either resource-rich or economically rich countries; international financial institutions and other international organizations; business, industry, and other users of resources; and NGOs. Often in post-conflict situations, parties are reluctant to stop fighting, let alone work together to rebuild the country. Each side has its own interests—be it ethnic identity, wealth, impunity, or power—and often will continue to exploit natural resources in order to maintain economic or political advantages. In developing countries where international standards have been non-existent prior to conflict, it is often difficult to manage natural resources with transparency, equity, and sustainability. Outside organizations can help to establish such standards that can curb corruption, build trust, and prevent competing groups from fighting over natural resource wealth.

For instance, international organizations—such as the United Nations, the World Bank Group, and the International Monetary Fund—can track economic stability and health conditions and provide aid in terms of oversight and debt management. Likewise, local and international businesses and industries that participate in the selling and processing of resources play a role in determining the standards and regulations by which extraction and trade occur. Efforts by the international community are not always effective, however. For example, when the UN Security Council sought to end the export of logs from Khmer Rouge–controlled areas of Cambodia in the early 1990s in response to human rights violations by the Khmer Rouge, the ban was, by most accounts, largely ignored. In one unintended side effect, sawmills proliferated in the border region, so that logs could be sawed into boards, which were not banned.<sup>20</sup> In some instances, outside interest in natural resource exploitation can fuel the conflict by providing funds to the warring parties.

Finally, NGOs, both domestic and international, play varied roles by publicizing conflicts as well as lobbying governments and other actors to improve human rights, transparency, and the fight against corruption. Transparency International, for example, publishes an annual corruption index and provides practical advice on how to address corruption. Other well-known NGOs working on these issues include Global Witness, Human Rights Watch, Catholic Relief Services, and Oxfam.

## **The Role of Natural Resources in Conflict**

Historically, struggle over territory has been the most prevalent form of conflict. And natural resources often underlie those territorial struggles. How are these resources interwoven into the complex dynamics of conflict?

### **Too Little or Too Much?**

Scholars have proposed two theories to explain the role of natural resources in conflict. One points to scarcity (sometimes called the neo-Malthusian view, named after the English demographer Thomas Robert Malthus) and the other points to abundance.

“The neo-Malthusians argue that rapid population growth, environmental degradation, resource depletion, and unequal resource access combine to exacerbate poverty and income inequality in many of the world’s least developed countries. These deprivations are easily translated into grievances, increasing the risks of rebellion and societal conflict.”<sup>21</sup> Internal disputes can arise from local environmental degradation, for instance, when factory emissions pollute a main freshwater source. Ethnic clashes can occur when population migration increases demand for scarce resources such as water or timber.

Other scholars claim that it is resource abundance, rather than scarcity, that is the bigger threat to create conflict. Some countries with abundant natural resources have experienced what has been coined the “resource curse”—corruption, economic stagnation, and violent conflict over access to revenues. The availability of easily looted resources, such as diamonds, has encouraged rebel movements. Both the Cambodian government and the rebel group Khmer Rouge used timber as a source of revenue for their military activities. Competition over the control of oil production has helped fan the violence among the Kurds, Sunni, and Shiites in Iraq. As noted earlier, there is a long list of conflicts with a strong link to natural resource exploitation.

Regardless of which theory describes the bigger threat, it is clear that both scarcity and abundance can create environments that are ripe for violent conflict.

### **Political Instability and Cultural Divides**

When resources are either scarce or abundant, political instability makes countries much more vulnerable to conflict. Instability impacts not only the governance structure, but also all other infrastructures that depend on government control and oversight, such as the banking system, national oil-production facilities, highways and ports. Population growth, environmental degradation, and resource inequality can combine to weaken an already unstable government’s capacity to address the needs of the populace and thus fuel conflicts. And abundance of natural resources can provide the incentive for increased conflict over control of the income-generating sources.

Furthermore, political conflicts that turn violent often result in destruction of the environment and infrastructure that increases the scarcity of resources, which in turn increases the potential for violent conflicts over the scarce resources. Conflicts often damage infrastructure, such as pipelines or oil fields, and decrease productivity of mining, thus furthering the downward spiral in economies affected by conflict. In addition, poor management and oversight resulting from political instability accelerate the economic decline.

Societies emerging from conflict may find that governments, businesses, and other groups have profited by the instability by engaging in the illegal sale or control of natural resources. Resource capture by powerful groups leads to an increase in the wealth gap between the elites and marginal groups. This gap not only causes grievances among the local population but also increases the vulnerability of the most disadvantaged people and groups.

Where natural resources are not at the heart of the conflict, their availability can compound the problems created by cultural conflict.<sup>22</sup> Severe divides between ethnic and religious groups within a country can magnify wealth inequalities, and the competition for political and economic dominance between the groups can lead to conflict. In areas where international demand and newly tapped natural resources have changed the primary economic source from farming or logging to mining or oil extraction, for example, depletion of the reserve or a decrease in price leads to an increase in poverty and ripens existing conflicts.

In Kenya, the Ogiek tribe has been resisting efforts by the government to move them from the Mau forest, which they consider their ancestral home. In the Kula Kingdom of Nigeria, western oil companies evacuated staff from the oil fields because of an outbreak of violent clashes among factions. Armed ethnic groups were clamoring for a greater share of the oil profits (among other issues), as the oil-rich region stagnated in poverty despite heavy foreign investment. In post-conflict situations, the curses of corruption, disagreement over control and distribution of natural resources, weak governance, and economic instability can threaten the fragile balance of peace. Even when natural resources are abundant, countries must deal with debt burden, lack of transparency, a dearth of local capacity, and a generally unstable economy, all of which increase the potential for disaffected groups to resume violent protest.

## Managing or Resolving Conflicts

Despite the woes highlighted by the violence surrounding competition for natural resources such as conflict diamonds, natural resources can play a positive role in conflict resolution. Indicators of successful management of natural resources that have contributed to peace include establishment of standards and agreements and efforts at cooperation, co-management, and conservation. We've already mentioned the numerous agreements relating to water and to oil and gas as well as examples of benefit sharing concerning timber. Such cooperative actions by parties in conflict can be stepping-stones to continued diplomatic engagement that is necessary to alleviate conflict and build peace.

Outside actors have used many techniques in conflict and post-conflict situations to shape natural resource management. International demand drives the value of many natural resources, and thus outsiders participate in the natural resource market. International organizations, foreign investors, and trade-partner countries that are part of this market can influence the local market and governance. In conflict situations, cooperation from these key actors is necessary for the alleviation of improper natural resource use that can escalate and sustain conflict. For example, outside parties have helped with negotiations and agreements, suggested solutions such as eco-parks or sustainable development and conservation mechanisms, pushed for adherence to international standards, and provided the necessary aid and economic incentives to make changes a possibility and help resolve conflicts.

The United Nations, for example, passes resolutions and organizes arms embargos or sanctions to help the natural resource business curb illicit economies and move toward transparency. UN peacekeepers and outside security forces can establish peaceful zones and barriers around disputed land, pipelines, oil fields, and other resource-related structures, to help prevent the return of violence. International financial institutions such as the World Bank Group can help with advice on revenue transparency and management, economic stability, and financing resource-driven debts. International businesses and their affiliates can recognize illicit economies and require certification of legal import, export, and trade. Finally, NGOs are often present in post-conflict situations to deliver humanitarian relief, help resettle refugees and internally displaced persons (IDPs) who have often been forcefully removed from resource-rich areas, and monitor human rights violations. These NGOs also advocate for enforcement of international standards and other methods of natural resource wealth management.

### ***Blood Diamonds and the Kimberley Process***

*After witnessing brutal crimes and human rights violations associated with diamond extraction in Sierra Leone and Angola in the 1990s, prominent actors (NGOs, governments, and the diamond industry) began negotiations to improve the management of diamond wealth. The result was the Kimberley Process Certification Scheme, a voluntary self-regulation mechanism to promote international standards on the import, export, and sale of diamonds.*

Put into effect in 2003, the Kimberley Process requires signatories to pass legislation on the legal trade of diamonds, certifying that each gem is a product of legitimate extraction before leaving the country, and to trade only with other signatory countries. With seventy-one signatories, the Kimberley Process has undercut funding sources for rebel groups and as a result the number of wars in Africa has diminished compared to 1990. However, the blood diamond trade still remains an issue in Ivory Coast, where rebels manage to certify diamonds through Ghana and Mali, and with transnational terrorist organizations such as al Qaeda, which has used illicit diamond sales to finance terrorist operations.<sup>23</sup>

Other international negotiations and agreements have provided ways to mediate natural resource conflicts and build peace. North and South Korea have recently engaged in talks to negotiate a joint fishing area to

prevent dangerous military standoffs that regularly occur on disputed waters on the western sea border, which was not clearly divided at the end of the Korean War conflict. Due to the significant economic impact of marine activities such as fishing and oil extraction, oceans and their boundaries can be a cause of conflict even among developed nations. For example, the dispute over the Kuril Islands between Japan and Russia has prevented the countries from signing a peace treaty to formally end World War II, and this dispute hinders their political and trade relations.

In 2002, the World Council on Sustainable Development established the Extractive Industries Transparency Initiative, a global effort to ensure that revenues from extractive industries contribute to sustainable growth and development. More than twenty countries have signed on so far, and Nigeria became the first one to pass enabling legislation, which it did in May 2007. The act provides for comprehensive annual audits of the oil, gas, and mining industries and closer oversight of Nigeria's extractive sector.

Environmental organizations at all levels attempt to coordinate international laws and regulations on exclusive economic zones (EEZ), boundaries in international waters, fisheries management, and conservation and sustainability efforts, among other issues. Such efforts attempt to establish agreement over use of oceans to prevent conflict, environmental degradation, and other unsustainable outcomes. Although marine competition does sometimes lead to conflict, the existence of strong standards often allows for quick dispute resolution and effective resource management. Similarly, respect for international law allows for the existence and safety of important waterways such as the Strait of Hormuz in the Persian Gulf, through which 25–40 percent of the world's petroleum output passes each day.

### ***Maritime Disputes in the South China Sea***

*The South China Sea is a maritime area marked by conflicting jurisdictional claims by a number of different countries—among them, China, Philippines, Vietnam, Singapore, Brunei, and Japan. Through the offices of a non-official organization, these countries held an informal series of workshops on pollution, regulation of piracy, and other matters of common interest. By identifying these areas of common concern, the workshops—which took place in the mid-1990s—allowed participants to manage potential conflicts in the South China Sea by preventing maritime disputes from developing into full-blown conflicts, while at the same time providing a forum to explore means of establishing better regional relations and multilateral ways of solving problems.*

Another example of trying to address natural resource issues that extend past boundaries is the allocation of international water resources. Both Israelis and Arabs have used the water from the Jordan River basin for generations. The Jordan River basin is an international watercourse that covers four states and one occupied territory: Lebanon, Syria, Israel, Jordan, and the West Bank and Gaza. The river and its tributaries are an essential source of water to these states in the arid Middle East region. Many experts believe that if the natural resources of water could be managed in a comprehensive, cooperative nature it would significantly aid the process of finding a sustainable peaceful solution to the conflict as a whole. Over the last century, numerous efforts have been made through negotiations to establish cooperative water-management agreements. However, the ongoing political conflict and other obstacles of historical and cultural context have impeded negotiations for a comprehensive water agreement.

After the Oslo Accords were signed in 1993, the Palestinians and Israelis established the Joint Water Committee (JWC), a body charged with approving every new water and sewage project in the West Bank. The JWC is comprised of an equal number of representatives of Israel and the Palestinian Authority. All its decisions are made by consensus, but no mechanism was established to settle disputes where a consensus cannot be reached. In effect, Israel is able to veto any request by the Palestinians to drill a new

well or gain additional access to the aquifers. On the other hand, the Joint Water Committee has provided assistance when existing water sources were in need of repairs or spare parts. On occasion, according to Israeli sources, Israel has provided needed water when West Bank sources have run low. But Israel has retained effective control over almost all sources of water in the West Bank.

Some nations have tried to depoliticize natural resources through a co-management approach that involves the local community, the government, and other stakeholders in the management of the resource in question. Guatemala has a long history of political conflict over the issue of land ownership. Near the Guatemalan border with Mexico, approximately 50 percent of the forest cover has been lost over the past thirty years; commercial logging, cattle ranching, oil exploration, illegal drug plantings, roads, and agriculture have brought substantial deforestation.<sup>24</sup> Guatemala chose the biosphere-reserve model to address the environmental conflict that was exacerbated by the years of political conflict the country had experienced. The biosphere-reserve model seeks to solve environmental degradation and poverty in developing countries by balancing environmental protection with the needs of a growing population that relies heavily on natural resources for subsistence. The biosphere-reserve model depoliticizes the local and regional landscapes, encouraging an institutional framework that will hold the indigenous farmers responsible for degradation and allow for conservation without perpetuating poverty in Guatemala. The project seeks the collaboration of the Guatemalan government, NGOs, international aid partners, and the local population including the indigenous people and migrants living in the region. The reserve encompasses a vast forest that carries many vital natural resources but also carries a rich cultural and ecological history as the home to the Maya civilization.

Another example of collaboration is the eco-park, which can be a means through which countries that have past and present conflicts can cooperate. After being engaged in boundary disputes over the Cordillera del Condor region for more than one hundred and fifty years, Peru and Ecuador negotiated a peace treaty that set a boundary and established a plan to designate the area as a peace park. Biosphere reserves and eco-parks are innovative solutions to deal with territory-based domestic and international conflicts that address natural resource issues.

## Conclusion

Growing demand for natural resources and the increasing complexity of conflicts make conflict management and resolution more difficult; however, in a world of globalization there is also more incentive for states and communities to work together to establish peace. Since natural resources are necessary for life and growth, it is not surprising that resource scarcity, environmental degradation, and unsustainable consumption sometimes contribute to or cause violent conflict. Nonetheless, there are ways to address natural resource issues that will prevent, manage, or resolve such conflicts. We have described a few cases in which natural resources have had a role in sustaining or managing violent conflicts. We encourage students, parents, teachers, and youth leaders to explore more deeply the topic of natural resources and conflict—the ways in which these issues impact us now, how they will impact future generations, and how the world should deal with the complex challenges they bring.

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<sup>2</sup> Paul Collier, “The Market for Civil War,” *Foreign Policy*, no. 136 (2003): 38–45.

<sup>3</sup> “Glossary,” Development Education Program, World Bank Group, <http://www.worldbank.org/depweb/english/modules/glossary.html>.

<sup>4</sup> “Meeting Basic Needs,” World Water Assessment Programme Report, [http://www.unesco.org/water/wwap/facts\\_figures/basic\\_needs.shtml](http://www.unesco.org/water/wwap/facts_figures/basic_needs.shtml).

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- <sup>14</sup> See, for example, James Cahill, “Prepare Now for the Post-Oil Era,” *Business Week*, March 18, 2005, [www.businessweek.com/technology/content/mar2005/tc20050318\\_5819.htm](http://www.businessweek.com/technology/content/mar2005/tc20050318_5819.htm); and Alexander Jung, “The End of the Oil Era Looms,” *Spiegel Online International*, August 24, 2006, [www.spiegel.de/international/spiegel/0,1518,426728,00.html](http://www.spiegel.de/international/spiegel/0,1518,426728,00.html).
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- <sup>21</sup> Colin H. Kahl, *States, Scarcity, and Civil Strife in the Developing World* (Princeton, NJ: Princeton University Press, 2006).
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## Glossary

**We have compiled a list of terms that students are likely to encounter as they study the topic of natural resources and conflict.**

**Ancestral domain:** A people's right to a certain domain or geographical area. A group may argue, for example, that because their direct ancestors lived within a certain domain for many generations, they have de facto ownership over that domain, and a right to oversee the use of the land and natural resources of the area.

**Co-management:** A collaborative arrangement in which the community of local resource users, governments, other domestic stakeholders, and external actors share responsibility and authority for management of the natural resource in question. Co-management covers a spectrum of arrangements—from formal legal agreements to informal pragmatic approaches.

**Common pool resource (CPR):** A natural or human-made resource, such as fishing grounds, pastures, irrigation systems, and forests, from which it is difficult to exclude users but whose use may exhaust the resource. Some CPRs, such as fishing grounds, may not be owned by any authority, but may be claimed by states or local communities as they enter into their territorial zones. Other CPRs—such as pastures—may be owned by national, regional, or local governments, by communal groups, or by private individuals or corporations.

**Conflict management:** Measures that are meant to limit, mitigate, and contain conflict, eventually enabling a transformation from conflict to lasting peace by addressing the root causes and effects of conflict.

**Conflict prevention:** Measures taken to keep low-level or long-festering disputes from escalating into significant violence between parties and to limit the spread of violence if it does occur.

**Conflict resolution:** Measures taken to address the underlying incompatibilities of a conflict and thereby enable the parties to terminate the conflict and deal with disputes through open and predictable processes.

**Convention:** In international law, one or several rules of conduct, such as the Geneva Conventions or the Convention on Biological Diversity. A country may choose whether to ratify a convention.

**Conservation:** The system of natural resource management founded in the late nineteenth century by “scientific managers” like conservationist Gifford Pinchot and President Theodore Roosevelt. Early conservationists believed that only through public ownership could natural resources be properly managed. Not to be confused with preservation, conservation advocated “efficiency” and “wise use” of natural resources to avoid degradation and supply scarcity.

**Declaration:** A document that announces something new, sometimes a statement of principles and sometimes an announcement of fact. There are many different kinds of declarations: declarations of independence, declarations of war, and declarations of emergency, for example. A declaration can be put forward by one country, or several countries may agree to a declaration together.

**Developed and developing countries:** There is no clear standard for categorizing countries as developed or developing. In general, developed countries have a higher per capita income, and developing countries have a lower per capita income and a less developed industrial base. Some critics argue that these terms are misleading and show a western bias.

**Ecological marginalization:** When unequal resource access combines with population growth to cause migrations to regions that are ecologically fragile, such as steep upland slopes, areas at risk of desertification, tropical rain forests, and peri-urban squatter settlements.

**Economic development** (also referred to as **international development**): In general, development is the process of improving people's quality of life. In international relations, the term implies the assistance of outside sources such as other governments, NGOs, and international organizations. Development is usually accompanied by, and sometimes driven by, the goal of greater economic prosperity and opportunity. The standards for development have been much debated over the years, and they now typically include efforts at human development that take into account such issues as governance, education, the environment, and human rights.

**Environmental degradation:** The diminishing of the environment's resources and the deterioration of their quality through air and water pollution, land erosion, the destruction of ecosystems, animal extinction, and desertification, for example.

**Environmental security:** The freedom from environmental destruction and scarcity and deprivation of resources.

**Exclusion:** When stakeholders are omitted from the natural resource management process. In some instances, local communities or individuals whose livelihood depends on the extraction of natural resources may be left out of resource management. In other cases, ethnic or tribal groups may be excluded in an effort to marginalize them politically or economically.

**Infrastructure:** When used in relation to a country, it is the underlying structure that allows that country to function: roads, bridges, airports, power generators, telecommunications, water systems, waste disposal, and so on. The process of building up infrastructure is often a main priority of international development projects.

**Natural resource management:** A system that monitors the extraction, use, and trade of natural resources among numerous stakeholders including the individual consumers of natural resources, international institutions, business and industry, governments, NGOs, and local communities. Effective management prevents corruption, degradation, and severe scarcity and improves transparency and equity in the extraction and use of natural resources.

**Natural resources:** "Materials that occur in nature and are essential or useful to humans, such as water, air, land, forests, fish and wildlife, topsoil, and minerals." They may be *renewable*—such as cropland, forests, and water that replenish over time by natural processes if used prudently. Or they may be *nonrenewable*—such as oil and minerals that have a finite quality to them and usually serve as a commodity for export in developing countries.

**Patrimony:** Property or entitlements inherited from or passed down through one's father. It can also refer to the cultural heritage or physical assets of a nation, including natural resources.

**Peacebuilding:** The process of establishing a sustainable peace by addressing the root causes and effects of violent conflict.

**Resource capture:** Typically occurs when a decrease in the quality or quantity of a renewable resource interacts with population growth to encourage powerful groups within a society to shift resource distribution in their favor. Motivation behind resource capture can be a fear of the disadvantage that scarcity might produce.

**Resource curse** (also referred to as the **paradox of plenty**): The argument that natural resource abundance often produces weak states, little to no growth, and conflict via a set of developmental pathologies. In the *Dutch disease*, abundant natural resources contribute to economic stagnation because capital and labor only focus on the booming natural resources for tradable exports. The result is that non-resource sectors of the economy are unable to mature, causing a lack of economic diversification, which is needed for long-term growth and increased employment. In the *honey pot effect*, abundant supplies of valuable local resources create incentives for rebel groups to form and fight to capture the resource. Once seized, control over valuable natural resources fuels conflict escalation by allowing the parties to purchase weaponry and mobilize potential recruits. In *rentier states*, states that take in a significant amount of revenue (“rents,” or excess profits) from natural resource exports are prone to develop corrupt governing institutions because the ruling party has fewer incentives to accommodate competing interests or to remain accountable, since they can afford to buy off or intimidate opponents.

**Resource-dependent economies:** Economies with a major portion of revenue coming from the extraction and trade of natural resources.

**Resource rights:** The authority to mine, control, and trade natural resources.

**Revenue:** The monetary value that is received from the trading of goods or services, including natural resources.

**Scarcity:** Scarcity occurs when the demand for a resource outstrips the supply of that resource. In *supply-induced scarcity*, depletion and degradation reduce the total resource supply or, in other words, decrease the size of the total resource “pie.” In *demand-induced scarcity*, population growth and increases in consumption cause scarcity by boosting the demand for a resource; as a result, more people want a slice of the total resource “pie.” In *structural scarcity*, a severe imbalance in the distribution of wealth and power results in some groups in a society getting disproportionately large slices of the resource pie, whereas others get slices that are too small to sustain their livelihoods.

**Separatist movement:** A region of a state may push to separate from government control over its affairs. In some cases, desire to control and profit from the extraction and use of local natural resources drives a separatist movement. Examples include the Kurds in Iraq, the Acehese in Indonesia, the southern Sudanese in Sudan, and the Moro Islamic Liberation Front in southern Philippines.

**Stakeholders:** The various groups (such as governments, business, industry, landowners, unions, rebel forces, international corporations, international organizations, and non-governmental organizations) that have an interest in the extraction, management, and trade of natural resources.

**Sustainability:** In the context of natural resources, sustainability refers to harnessing natural resources without depleting them. It can also mean searching for alternative resources and technologies as replacements, for example, ethanol and wind.

**Territorial waters:** The territorial waters of a state typically extend 12 nautical miles (22 km) into the sea from its coastline. A state’s exclusive economic zone (EEZ) extends 200 nautical miles (370 km).

**Transparency:** Visibility or accessibility of information regarding government decision-making and financial practices.

## For Discussion and Investigation

### Discussion I: Value and Natural Resources

**Before** reading “Natural Resources, Conflict, and Conflict Resolution,” students answer the following questions individually or as a group.

- What does it mean when something is valuable?
- Is value created or innate?
- What are some examples of things that are valuable to you, your community, your country? What gives them value? Do others value them? Do others value them for the same reasons? Who benefits from their value?
- Have you, your community, or your country been involved in a conflict that involved natural resources? Who were the parties involved? What were the issues in dispute? Did the conflict escalate to violence? How was the conflict resolved? If the conflict is ongoing, what are ways that it could be managed or resolved?

### Discussion II: Equity and Natural Resources

**After** reading “Natural Resources, Conflict, and Conflict Resolution,” students answer the following questions individually or as a group.

- Identify objects around you that are produced from natural resources and name the natural resources. Do you know the country of origin of the natural resources?
- How should natural resources be distributed or controlled? Should the proceeds and control of natural resources be distributed equitably? If so, how would one determine if something is equitable?
- What roles do natural resources play in conflict?
- Why are some conflicts over resources resolved more easily than others?
- Do resources play a different role in internal conflicts than in conflicts that cross borders?
- Which works better: sole ownership of natural resources, or joint arrangements that share benefits?
- The reading focused on major organizations, governments, and large groups as key players who can help alleviate conflict. Do individuals have a role? What, if anything, can individuals do?

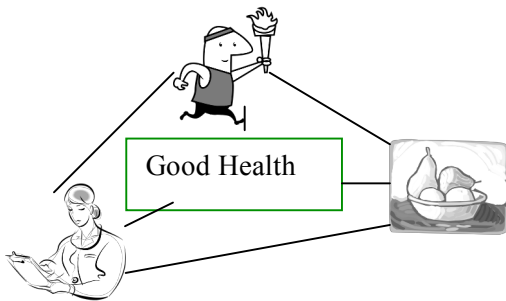
### Activity I: Concept Map

**After** reading “Natural Resources, Conflict, and Conflict Resolution,” students do the following activity individually or as a group.

Students draw a concept map to visually represent their understanding of the interaction of natural resources, stakeholders, conflict, and peace. A concept map is a diagram that helps students organize and understand the relationships among complex ideas and explain those relationships. The point of creating a concept map is not to draw the prettiest picture, depict every symbol perfectly, or include every detail, and there is no one right answer. Text can be used where an appropriate image is difficult to identify. The discussion part of the activity should help students identify ideas that need clarification or perspectives they might explore further.

Below are two simple examples to give students and teachers a sense of what a concept map is and what the discussion might be like. Students might find that representing conflict and natural resources requires more words and more branches than shown in the examples

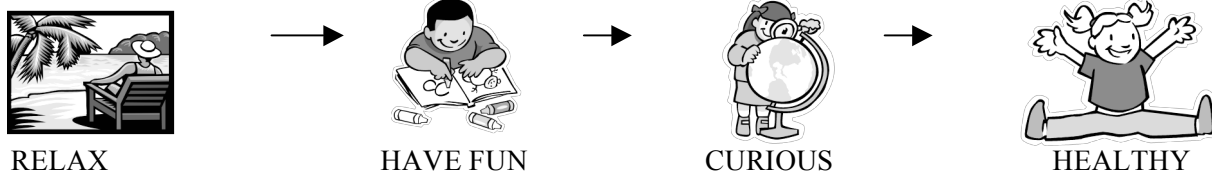
### Example 1 Concept Map



### Example 1 Discussion

I think being healthy involves eating food that's good for you, like fruits and vegetables. I used a picture of fruits, because that's all I could find, but food that's good for you can be a lean steak or cereal. You also should exercise, like running, though maybe not in the Olympics or with a torch—it could be just walking or playing tennis. And, you should visit the doctor for physicals to make sure your health is on track. I connected the elements together, because you have to do all three things. If you exercise but eat fried food and soda for lunch everyday, or if you eat food that's good for you but only exercise your fingers on the game controller, you're not going to be healthy. Also, there are genetic factors that influence your health and your doctor can help you with them.

### Example 2 Concept Map



### Example 2 Discussion

I think being healthy involves taking care of my mental health. For me, I eat junk food, sleep a lot, don't go outside, and don't hang out with my friends when I don't feel good mentally. I'm always stressed out, so first, I have to relax. Then, I have to do something I like to do, but something creative or active like draw or write or get on my skateboard. That helps my brain function and makes me curious and interested in the world and people. And it's difficult to be creative or enjoy my hobbies until I'm relaxed, and it's also difficult to be interested in calculus or the news if I haven't done something I really enjoy. I don't have to do these things in sequence, but I wouldn't feel as healthy, so I have the image in sequence. When I do these things, I feel healthy. I don't do the splits or jump up and down when I feel healthy, but I feel enthusiastic and confident.

## Activity II: Additional Research

**After** reading “Natural Resources, Conflict, and Conflict Resolution,” students do the following activity individually or as a group.

Did any of the natural resources or conflicts mentioned in the reading interest you more than others? (For an additional challenge, ask your teacher or parents or do some research to find out if there are less known cases you can investigate.) Collect the following information about the conflict. Explain why your case is similar to the ones in the reading or more interesting to you.

- parties involved in the conflict
- natural resources at stake
- role of natural resources in the conflict
- other major issues in the conflict (for example, poverty or sectarian factions)

- obstacles to resolving the conflict
- parties that have been involved or might be involved in alleviating or ending the conflict
- your ideas about how natural resources can be used to benefit conflict resolution

How does your research fit or change the concept map you created in Activity 1?

### **Activity III: Simulation**

**After** reading “Natural Resources, Conflict, and Conflict Resolution,” students use the following simulation exercise alone or as a group.

#### **● Students Working Individually**

You are the mediator who will run the meeting of the parties involved. To prepare for the meeting, you will complete the following outline to gain an understanding of the situation at hand. Begin this activity by reading the learning objectives, issues, scenario, and roles. Base your analysis on the scenario and at least three roles, one each from Amali, Burstan, and West Gulden (for example, Amali ambassadors, Burstan ambassadors, and governor of West Gulden). Examples are provided for some sections to help you along, but you may ignore them if they are not consistent with your analysis).

- I. Problem Statement
  - a. The parties involved are:
  - b. The problems are:
  - c. The consequences of the problems: Without mediation and negotiation, West Gulden will try to reunite with Burstan and Amali will try to prevent the reunification. The end result might be violent conflict or even war.
  
- II. Key Points of Contention and Their Importance
  - a. Giraffes are valued by the Amalis but not by the West Guldenese.
  - b. The West Guldenese value the Blenko trees and don't want the giraffes to eat them.
  - c.
  - d.
  
- III. Possible Solutions and Their Strengths and Weaknesses
  - a. Solution 1: A fenced pathway leading across West Gulden to the river.
    - i. Strengths: Keeps the giraffes on one path and away from the Blenko trees.
    - ii. Weaknesses: Very long and expensive.
  - b. Solution 2:
    - i. Strengths:
    - ii. Weaknesses:
  - c. Solution 3:
    - i. Strengths:
    - ii. Weaknesses:
  
- IV. Obstacles in Reaching an Agreement and Possible Points for Cooperation
  - a. Amali and West Gulden governments feel that their concerns are more pressing. If they work together to build the fence, it could build trust while solving the immediate issues of the giraffes and Blenko trees.
  - b.
  - c.

- V. Questions and Issues That Must be Addressed for Negotiation
- a. Who would pay for the fence and build it? If the Amali government paid for it, would that symbolize a loss of power for the government of West Gulden? Who would control the path?
  - b.
  - c.

### **●Students Working in Groups or as a Class**

The following role-playing exercise will provide students with a relatively simple problem of resource management. The scenario in this exercise allows students to represent different perspectives about the management of a river and territorial disputes and explore possible solutions to the problems facing the parties to the conflict.

The exercise can help students think through the links between resources and conflict and provide them with a case to test some of their ideas about how to promote cooperation and resolve resource disputes. See the debriefing questions on page 26 for additional ideas to explore.

#### ***Required***

- A group of 3 to 30 students.
- Someone to manage the group, play the role of mediator, and facilitate the simulation discussion, such as a teacher or youth leader.
- A copy of the simulation scenario for each student.
- A copy of one of the role descriptions for each student.
- 1 or 2 class periods (1 to 1.5 hours).

#### ***Structure***

- 10 roles are included here. Each role can be assigned to multiple students if the group is larger than 10.
- Smaller groups of students can participate as well, as long as there is one representative each from Amali, Burstan, and West Gulden. We suggest using Amali ambassadors, Burstan ambassadors, and the governor of West Gulden. Additional roles can be added as desired, and roles can be combined (for example, Amali ambassadors and Amali health officials, or Save Our Blenko and West Gulden and Burstan holy leaders).
- If time is very limited, assigning fewer roles to students will allow you to shorten the discussion times.

#### ***Procedure***

1. Students will begin by reading the scenario and their roles. At this time the students should start to define the problems as they relate to their roles. It works best if students receive these materials ahead of time; in fact, this portion can be done as an at-home assignment. (10 min.)
2. Before convening, the teacher or other leader should lay down guidelines for speaking. (5 min.) Suggested guidelines are:
  - a. Raise your hand and wait your turn to speak. Do not interrupt the person who is speaking.

- b. Give the speaker full attention.
    - c. When speaking, speak with respect for yourself and your audience. Do not use offensive or pejorative language.
  3. Upon convening, the group should be broken down into three smaller working groups to discuss the situation and various solutions. One group should consist of those students with roles from Amali, one group of those from Burstan, and one group of those from West Gulden. At this time each working group should select a spokesperson. (15 min.)
  4. All the small working groups should gather as a big group, with all the assigned roles represented, to begin discussions. (30 min. total)
    - a. Each group should state who they are and their interests or stakes. At this point the different sides to the conflict should become clearer. (5 min.)
    - b. The students should begin to discuss the issues. The students should define the problem together, highlight key issues, and discuss solutions. (25 min.)
  5. In the debriefing, the teacher or other leader should help students explore what they have learned from participating in the simulation. What happened and why? What obstacles and challenges existed? What worked and what didn't? What allowed for an acceptable solution or what did not allow for a solution? (15 min.) Suggestions for additional debriefing questions are included at the end of this section.
- 

### **Learning Objectives**

By participating actively in this simulation exercise, students will:

- Enhance understanding of conflict and peacemaking
  - Broaden understanding of the relationship between resources and conflict
  - Discover, define, and transform a problem
  - Understand multiple interests and perspectives
  - Develop concrete steps to resolve a problem
- 

### **Simulation Issues**

- Amali wants the giraffes to roam freely.
  - Amali wants the giraffes to have access to water.
  - Amali wants to restrict industrial and agricultural uses of the river in order to reduce pollution of the water.
  - West Gulden citizens want the giraffes kept from their territory.
  - West Gulden citizens want compensation for the damages to crops, other property, and the children's play areas.
  - West Gulden does not feel the Amali government has given sufficient attention to the problems created by the migrating giraffes.
  - West Gulden wants to retain control over cutting down of timber in its forests.
  - Burstan sides with West Gulden on the issues and is willing to help them reunify with Burstan.
-



## Simulation Scenario

Traditionally, the Vernis River has marked the border between Amali and Burstan. Over the past 25 years, however, the river has changed its main course, creating a small inhabited island known as West Gulden. Originally, the people living on the island were citizens of Burstan, but since the border (the river) between Amali and Burstan has been changed by the flow of water, the island inhabitants are now citizens of Amali.

West Gulden had long been a part of Burstan. The majority of the population is West Guldenese (who have a distinct language and ethnicity but a similar religion to Burstan). There is also a sizable Burstanese minority in West Gulden, creating a concern in Burstan for their welfare as part of Amali.

The change in the river's course has disrupted industry and agriculture in Burstan and West Gulden; and in Amali the river's change has resulted in damage to the habitats for fish and plants that serve as a major part in the Amali diet. Burstan is primarily concerned with continuing its industrial and agricultural practices and has wanted to dam the river in places so as to regulate its flow. Burstan and Amali have had little trouble over West Gulden but have had intermittent conflict over the river itself.

In addition, Amali has a high population growth and faces a growing housing crunch. The government there wants to harvest increasing amounts of timber from West Gulden to provide building materials for towns in Amali along the river. West Gulden wants to retain control over the timber forests, both to assure that the profits remain in local hands and that the timber is not overharvested. Local control is also deemed critical to protect the stands of old-growth Blenko trees, which are revered in Burstan and West Gulden.

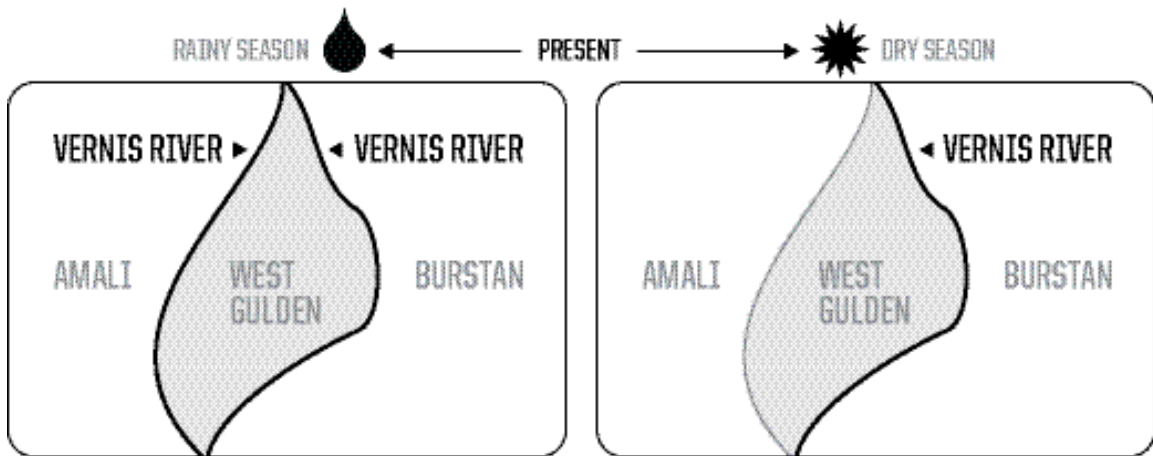
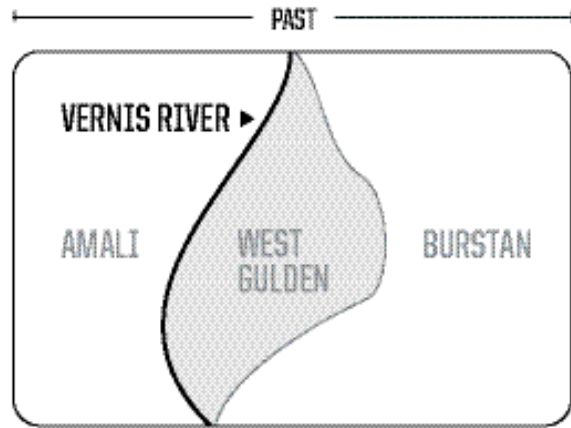
In Amali, on the other hand, the giraffe has historically been a sacred symbol, embodying power, beauty, and tranquility. The citizens of Burstan and West Gulden do not, however, share these beliefs. They view the giraffe as a repulsive and dirty nuisance. In the past, the two countries have clashed, sometimes violently, over their differing beliefs.

Until the river changed course, the giraffes in Amali had been able to live off water from the Vernis River. Even after the river shifted, during the rainy season the old river bed to the west of West Gulden contains enough water for the giraffes. But during the hottest months, the old river bed dries up, forcing the giraffes to cross the dry river bed in search of water in West Gulden or the Vernis River. As the giraffes travel toward the water, they are damaging crops and invading the children's play and swim areas. The most contentious issue, however, is the giraffes' eating of West Gulden's holy Blenko trees. The people living in West Gulden, outraged by the destruction of the Blenko trees and the seeming lack of interest in resolving the situation by the Amali government, are petitioning to reunite with Burstan.

Currently, the peaceful relationship between Amali and Burstan is in jeopardy. West Gulden and Burstan have petitioned an international court to provide an impartial mediator to facilitate discussions between the conflicting parties. The task at hand is to discuss the situation and find an agreeable solution. Representatives at the meeting include: ambassadors from Amali and Burstan, governor of West Gulden, West Gulden Citizens Action Group, health officials from Amali and from West Gulden and Burstan, Save Our Blenko, People for the Ethical Treatment of Giraffes (PET Giraffe), holy leaders from Amali and from West Gulden and Burstan, and a mediator.

The mediator (played by a teacher or group leader) has called a meeting for the parties to discuss the issues and find an agreeable resolution to the situation.

# Simulation Map



## Simulation Roles

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**Amali ambassadors** – You are present to help work out an agreement that is acceptable to your government and to the people of West Gulden. Keep in mind that you strongly support the rights of the giraffes and are most interested in finding a way to provide water for them. Part of your negotiation with the people of West Gulden will be providing what you feel is a fair compensation to them for the damages caused by the giraffes. You are also concerned about retaining West Gulden as a source of needed timber. You want to show respect for the Blenko trees but believe that old stands of these trees, which often die after a couple of centuries when crowded out by newer trees, ought to be harvested. You view these problems as internal disputes that should be handled within Amali borders. The opinions and suggestions of other countries are seen as outside interference. It is equally important to reduce the amount of pollutants entering the river from Burstan and West Gulden.

✂-----

**Burstan Ambassadors** – You are present to help work out an agreement between the people of West Gulden and the Amali government. The people of West Gulden asked for your support and assistance. You strongly support the people of West Gulden, even if they decide to take further steps to reunite with your country. You also feel that the citizens are entitled to full compensation for all damages. At the same time, you will resist efforts to change Burstan agricultural and industrial practices.

✂-----

**Governor of West Gulden** – You are present to represent the citizens of West Gulden and seek to work out an agreement with the officials in Amali. The current situation with giraffes is unacceptable and you would like their immediate removal. In addition, it is crucial that the Amali government pay for the damages caused by the giraffes. The damages include destruction of crops, other property, children’s play areas, and most importantly, the Blenko trees. You do not feel that Amali officials have given adequate attention to the current situation and that they have designs on your timber resources, including the Blenko trees. You have concluded that the only remedy to the situation is to seek help from Burstan and possibly even seek reunification.

✂-----

**West Gulden Citizens Action Group** – You are fed up with the lack of attention and concern given to your living conditions. You do not feel that the situation should be tolerated any longer. At the very least you want the giraffes out of West Gulden and compensation for all damages including destruction of crops, other property, children’s play areas, and most importantly, the Blenko trees. You want West Gulden returned to the clean and healthy environment it was before the invasion of the giraffes. Currently you are organizing the citizens of West Gulden to petition for reunification with Burstan.

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**Health officials from Amali** – You acknowledge that the current conditions in West Gulden are unhealthy but you feel this issue is being blown out of proportion. Even though you agree that the giraffes have damaged crops and other property, you do not think the situation is nearly as bad as the West Gulden Citizens Action Group does. You believe that the conditions are temporary and can be cleaned up with relative ease. In addition, you are strongly concerned about increasing pollution of the river by the disruption of industrial and agricultural practices in Burstan and West Gulden. Unless this trend is reversed, the river could be damaged irreversibly.

✂-----

✂-----

**Health officials from West Gulden and Burstan** – You are very concerned about the unhealthy conditions created by the migrating giraffes. You do not feel that the people living in West Gulden should have to tolerate the unclean living environment. The destruction caused by the giraffes has gone beyond the obvious damaged trees, yards, and gardens. The giraffes are leaving waste in children’s play and swimming areas, making them unsafe and unusable. You would like full compensation for the damages, plus money to clean up the infected areas.

✂-----

**Save Our Blenko** – You are present to protect the Blenko trees from the harmful giraffes. You want the damage to the Blenko trees to stop immediately; you are outraged that the destruction is continuing. Furthermore, you want money to restore and replace the damaged trees. Your concern for the Blenko tree extends beyond the tree itself. You believe that the entire Blenko tree from the air around the tree to the soil protecting the root systems must be protected. It is crucial that you have assurances from the Amali government that the current situation with the giraffes will not continue.

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**People for the Ethical Treatment of Giraffes (PET Giraffe)** – You are present to protect the rights of the giraffes. You want to ensure that the giraffes have adequate access to water and a place to roam freely. You are concerned that the enraged people in West Gulden may harm the giraffes. While you want to be sympathetic to the people of West Gulden, you are more concerned about the plight of the giraffe. After all, the giraffe is sacred in Amali, and West Gulden is now part of Amali. Whatever agreement is decided upon, it is your mission to protect and provide for the giraffe at all costs.

✂-----

**Amali holy leaders** – Your main concern is for the rights of the sacred giraffes. The highest respect must be shown toward the giraffes and they must be protected for the holy symbols that they are. The giraffes should never suffer from a shortage of water or food, and should never be threatened. It is crucial that you have assurances from West Gulden and Burstan that the giraffes will be provided for and protected in the future. You are sympathetic to the situation in West Gulden and want to find a solution; however, you feel that the rights of the giraffes should be held above all others.

✂-----

**West Gulden and Burstan holy leaders** – Your main concern is for the overall protection and preservation of the holy Blenko trees. You want the damage to the Blenko trees to stop immediately. The Blenko trees’ environment should also be protected. For instance, the air should be clean and the soil should be free of any contaminants that might harm the ancient root system of the holy trees. You very much want to find a solution to the current situation but not at the expense of the Blenko trees. It is crucial that you have assurances from the Amali government that the current conditions will not happen again.

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### *Simulation Debriefing Questions*

- Do you think that your solution to the problem would work? Why or why not?
- Do you think the solution you discussed would stand the test of time?
- Do you think that in the future other disputes might occur between the people in West Gulden and Amali?
- What might some of the negative consequences of harvesting resources be?
- What were the difficulties you faced in trying to find a solution?
- What objectives guided the discussions and the outcome? Was there an overall focus on a peaceful resolution or were the discussions guided by individual interests?
- Do you think that every member of the group played their role? Were some members quick to find a solution while others created obstacles? Why?
- Did you feel that some roles had more input than others?
- Did you notice any differences in how people on the same sides perceived the problem?
- What kinds of leadership skills were necessary to reach an agreement?
- In trying to resolve conflicts, when is cooperation more likely?
- Are disputes over water more difficult than those over land or territory?
- Why is access to resources so often a critical issue?
- What role does sovereignty play in natural resource conflicts?

## Resources

### Articles and Chapters

Collier, Paul. "Economic Causes of Civil Conflict and Their Implications for Policy." In Chester A. Crocker, Fen Osler Hampson, and Pamela Aall, eds., *Leashing the Dogs of War*. Washington, DC: United States Institute of Peace, 2007.

This analysis of civil wars examines the economic, geographic, and historical factors that can increase the risk of civil conflict, and provides numerous policy implications for conflict prevention and post-conflict peacebuilding.

Collier, Paul, and Anke Hoeffler. "Resource Rents, Governance, and Conflict." *Journal of Conflict Resolution* 49, no. 4 (2005): 625–633.

This collection of articles analyzes the link between natural resources and civil war in a number of different ways, including the economic "resource curse" theory as well as the political science literature that concentrates on natural resources leading to weak institutions.

du Nann Winter, Deborah, and Mario M. Cava. "The Psycho-Ecology of Armed Conflict." *Journal of Social Issues* 62, no. 1 (2006): 19–40.

The authors discuss current views of environmental security and go on to argue that the social psychological dimensions of resource-based conflict should also be addressed. They briefly describe six examples of such conflicts, and conclude that psychologists can play an important role in promoting peace by bringing attention to the psycho-ecological dimensions of armed conflict.

Dunning, Thad, and Leslie Wirpsa. "Oil and the Political Economy of Conflict in Colombia and Beyond: A Linkages Approach." *Geopolitics* 9, no. 1 (2004): 81–108.

The article discusses issues related to the violent conflict in Colombia due to natural resource endowments. The exploitation of oil in Colombia has particular consequences for the security of the communities and territories in which it is embedded.

Eddy, Elizabeth. "Environmental Security: Securing What for Whom?" *Social Alternatives* 23, no. 4 (2004): 23–28.

The article focuses on various aspects of environmental security. Initially the notion of environmental security was raised by the geopolitical security community as a way of articulating growing concerns about violent conflict arising from environmental change and natural resource scarcity, with a strong emphasis on implications for national security matters.

Gleditsch, Nils Petter. "Environmental Change, Security, and Conflict." In Chester A. Crocker, Fen Osler Hampson, and Pamela Aall, eds., *Leashing the Dogs of War*. Washington, DC: United States Institute of Peace, 2007.

The author examines conflict through the lens of environmental security. He discusses the political, economic, cultural, and historical conditions for environmental security, as well as perspectives on environmental change, resource scarcity, the "resource curse," and environmental cooperation.

Hintjens, Helen. "Conflict and Resources in Post-Genocide Rwanda and the Great Lakes Region." *International Journal of Environmental Studies* 63, no. 5 (2006): 599–615.

The article explores the exploitation of natural resources and other damage to the environment in the Great Lakes region of Rwanda and Democratic Republic of Congo following the 1994 genocide in Rwanda.

Khagram, Sanjeev, and Saleem Ali. "Environment and Security." *Annual Review of Environment and Resources* 31, no. 1 (2006): 395–411.

The article describes how the debate on the environment and conflict has centered on whether and why environmental scarcity, abundance, or dependence might cause militarized conflict. Less research has been conducted on the environmental effects of violent conflict and war or traditional security institutions such as militaries and military-industrial complexes

McPherson, Charles, and Stephen MacSearraigh, "Corruption in the Petroleum Sector." In Edgardo Campos and Sanjay Prahdan, eds., *The Many Faces of Corruption: Tracking Vulnerabilities at the Sector Level* (Washington, DC: World Bank, 2007).

This chapter discusses industry-specific features that contribute to corruption, identifies the major actors, and suggests possible remedies. It closes with a road map for policymakers.

Mollett, Sharlene. "Race and Natural Resource Conflicts in Honduras." *Latin American Research Review* 41, no. 1 (2006): 76–101.

The Honduran Rio Platano Biosphere Reserve has become a place of struggle over natural resources. This paper examines a land contest between the Miskito Indians and the Garifuna, an indigenous group and an Afro-indigenous group respectively.

Morrisette, Jason J., and Douglas A. Borer. "Where Oil and Water Do Mix: Environmental Scarcity and Future Conflict in the Middle East and North Africa." *Parameters: U.S. Army War College* 34, no. 4 (2004): 86–101.

The article discusses environmental scarcity and future conflict in the Middle East and North Africa. The authors conceptualize how environmental scarcity is linked to domestic political unrest and the subsequent crisis of domestic political legitimacy, which may result in both intrastate and interstate conflict.

Ross, Michael. "A Closer Look at Oil, Diamonds, and Civil War." *Annual Review of Political Science* 9, no. 1 (2006): 265–300.

This paper develops new tests to address the problem of natural resource wealth and civil war.

Tikhomirov, Sergey N. "1939-1945: Environmental Aspects of the War in Europe." *Review of Central & East European Law* 31, no. 1 (2006): 111–125.

Using historical examples, the author proposes his own view of the problem of destruction to the environment during war from the perspective of international law.

## Books

Bannon, Ian, and Paul Collier, eds. *Natural Resources and Violent Conflict: Options and Actions*. Washington, D.C.: World Bank, 2003.

Conca, Ken, and Geoffrey D. Dabelko, eds. *Environmental Peacemaking*. Washington, DC: Woodrow Wilson Center Press, 2002.

- Dobkowski, Michael N., and Isidor Wallimann, eds. *On the Edge of Scarcity: Environment Resources, Population, Sustainability, and Conflict*. Syracuse, NY: Syracuse University Press, 2002.
- Foster, John Bellamy. *The Vulnerable Planet: A Short Economic History of the Environment*. New York: Monthly Review Press, 1999.
- Gausset, Quentin, Michael A. Whyte, and Torben Birch-Thomsen. *Beyond Territory and Scarcity: Exploring Conflict Over Natural Resource Management*. Uppsala: Nordiska Afrikainstitutet, 2005.
- Homer-Dixon, Thomas F. *Environment, Scarcity, and Violence*. Princeton, NJ: Princeton University Press, 1999.
- Humphreys, Marcartan, Jeffrey D. Sachs, and Joseph E. Stiglitz, eds. *Escaping the Resource Curse*. New York: Columbia University Press, 2007.
- Kaldor, Mary, Terry Lynn Karl, and Yahia Said, eds. *Oil Wars*. London: Pluto Press, 2007.
- Klare, Michael T. *Resource Wars: the New Landscape of Global Conflict*. New York: Henry Holt, 2002.
- Le Billon, Philippe. *Fuelling War: Natural Resources and Armed Conflict*. New York: International Institute for Strategic Studies, 2005.
- Lewicki, Roy J., Barbara Gray, and Michael Elliott, eds. *Making Sense of Intractable Environmental Conflicts: Concepts and Cases*. Washington, D.C.: Island Press, 2003.
- Tyler, Stephen R. *Comanagement of Natural Resources Local Learning for Poverty Reduction*. Ottawa, ON: International Development Research Centre, 2006.

## Online Reports and Other Documents

Environmental Change and Security Program, Woodrow Wilson International Center for Scholars  
[http://www.wilsoncenter.org/index.cfm?fuseaction=topics.home&topic\\_id=1413](http://www.wilsoncenter.org/index.cfm?fuseaction=topics.home&topic_id=1413)  
This web site is organized around four topics: China Environment Forum; Environment and Security; Population, Health, and Environment; and Water.

Global Witness Media Library  
[http://www.globalwitness.org/media\\_library.php?filter=reports\\_documents](http://www.globalwitness.org/media_library.php?filter=reports_documents)  
This NGO focuses on the links between natural resources, conflict, and corruption. See especially “A Crude Awakening: The Role of the Oil and Banking Industries in Angola’s Civil War and the Plunder of State Assets” (1999) and its follow-up “All the President’s Men” (2002).

Human Rights Watch  
<http://hrw.org/reports/2007/nigeria0107/>  
“Chop Fine: The Human Rights Impact of Local Government Corruption and Mismanagement in Rivers State, Nigeria”

Inventory of Conflict and Environment (ICE)  
<http://www.american.edu/TED/ice/ice.htm>



Professor Jim Lee of American University conceived this effort to collect case studies from around the world in conjunction with one of his classes.

Pacific Institute's Water Conflict Chronology

<http://www.worldwater.org/chronology.html>

Environment and Security Water Conflict Chronology (PDF) compiled by Peter Gleick, updated October 2006.

United States Agency for International Development (USAID) Conflict Toolkits for Intervention

[http://www.usaid.gov/our\\_work/cross-cutting\\_programs/conflict/publications/toolkits.html](http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/toolkits.html)

USAID's toolkits show how development assistance can reduce conflict. See "Forests and Conflict," "Land and Conflict," and "Minerals and Conflict."

United States Institute of Peace Special Report: Managing Natural Resource Wealth

<http://www.usip.org/pubs/specialreports/srs/srs4.html>

Part of Stabilization and Reconstruction Series by Jill Shankleman, August 2006.

## Online Classroom Resources

### Lesson Plans

CNNfyi Lesson Plan: "Conflict" Diamonds in Africa

<http://cnnstudentnews.cnn.com/2001/fyi/lesson.plans/11/22/diamond.history>

Students read a CNN article from November 22, 2001 and answer questions about conflict diamonds.

National Geographic Society Lesson Plan: Oil and Water in the Middle East

<http://www.nationalgeographic.com/xpeditions/lessons/01/g68/iraqoil.html>

Lesson on oil and water conflicts in the Middle East for grades 6–8. Mapping and research activities are included.

NewsHour Extra Lesson Plan: Conflict Diamonds

[http://www.pbs.org/newshour/extra/teachers/lessonplans/world/conflict\\_diamonds\\_12-06.html](http://www.pbs.org/newshour/extra/teachers/lessonplans/world/conflict_diamonds_12-06.html)

In addition to traditional activity ideas, this lesson uses multimedia resources such as the 2006 movie "Blood Diamond" and Kanye West's "Diamonds from Sierra Leone" music video (available online). Also has a long list of other online resources for teachers.

Oxfam Lesson Plan: Finding Out about Armed Conflict

[http://www.oxfam.org.uk/coolplanet/teachers/conflict/armed\\_conflict.htm](http://www.oxfam.org.uk/coolplanet/teachers/conflict/armed_conflict.htm)

Gets students thinking about armed conflict and what they really know about it. Uses search engines in research and mapping activity.

### Maps

National Geographic Society

<http://www.nationalgeographic.com/xpeditions/atlas>

Labeled and blank maps for download and printing are available at no cost.

## **Online Videos and Images**

Global Witness: Forest Monitoring in Cameroon

[http://www.globalwitness.org/media\\_library\\_detail.php/481/en/video\\_guide\\_to\\_ifm\\_in\\_cameroon](http://www.globalwitness.org/media_library_detail.php/481/en/video_guide_to_ifm_in_cameroon)

Video of Independent Forest Monitoring (IFM) projects in Cameroon. It's low resolution, making for quick download, but it is very small on the screen. Alternatively, go to

[http://www.globalwitness.org/media\\_library.php](http://www.globalwitness.org/media_library.php) and use the search feature on the left to locate the file "Video Guide to IFM in Cameroon."

History Channel: Blood Diamonds

<http://www.history.com/minisites/blooddiamonds>

Video clips include short explanation about conflict diamonds and interviews with victims of conflict diamonds. Images include photos of diamonds and victims of conflict diamonds.

Research Channel: American and Mideast Oil

<http://www.researchchannel.org/prog/displayevent.aspx?rID=3256&fID=570>

Video of Dr. Joseph Pratt's 2002 lecture titled "American and Mideast Oil: A History Shaped by Conflict." Alternatively, go to <http://www.researchchannel.org/prog/>, go to the Social Science section, and look for the title of the talk.

UN Human Development Report

<http://hdr.undp.org/water/14.htm>

A map and diagram show people impacted by shortage of clean water.





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