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### **RESOURCE PAPER**

#### **Global Poverty, Pollution, and Public Health: Threats to World Security**

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# **Global Poverty, Pollution, and Public Health: Threats to World Security**

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## **Abstract**

This paper examines globalization trends and the impact on poverty, environmental quality, and public health in the developing world. The core of the recent anti-globalization movement is anchored in the age-old quest for social justice, human rights, and democracy. Poverty and pollution take a heavy toll on the world's population—especially children. Addressing the problems of dirty water, inadequate sanitation, and polluted air, and clean, affordable energy are major global security issues of the 21<sup>st</sup> century.

## **Introduction**

Increased globalization of the world's economy has placed special strains on the eco-systems in many poor communities and poor nations inhabited largely by people of color and indigenous peoples. This is especially true for the global resource extraction industry such as oil, timber, and minerals.<sup>1</sup> Globalization makes it easier for transnational corporations and capital to move to areas with the least environmental regulations, best tax incentives, cheapest labor, and highest profit. It is buttressed and encouraged by elites in the developed and developing countries ("Developed North"), multilateral and regional economic institutions (e.g., World Bank, International Monetary Fund, etc.), multilateral and regional free trade and investment agreements (e.g., WTO, NAFTA), transnational corporations, large investment and banking institutions, national export promotion agencies, corporate affinity groups (e.g., the World Economic Forum, the U.S. Council for International Business), and pro-business academics and think tanks.<sup>2</sup>

## **Double Burden**

Despite significant improvements in environmental protection over the past several decades, nearly three billion people, almost half of the world's population, live on less than two dollars a day. Poverty and pollution are intricately linked.<sup>3</sup> Poor people are disproportionately exposed to hazards in their environment that in turn makes them sick due to the lack of clean and fresh water, and adequate food, shelter, fuel and air.

Poverty impacts health<sup>4</sup> because it determines how much resources poor people have and defines the amount of environmental risks they will be exposed to in their immediate environment.<sup>5</sup> It is the "poorest of the poor," that one-fifth of the world's population living on less than \$1 a day and unable to secure adequate food, water, clothing, shelter, and health care, who is most vulnerable to environmental threats. All is not well in the developed countries. For example, over 130 million people live in income poverty and eight million are undernourished.<sup>6</sup>

Most of the governments in the poorest part of the world spend around \$10 per person per year on health care.<sup>7</sup> Over 25 percent of all preventable illnesses are directly caused by environmental factors.<sup>8</sup> Almost one third of the global burden of disease falls on the most vulnerable population—children under 5 years of age who constitute no more than 12% of the world's population.

Three environmental problems (contaminated drinking water, untreated human excrement, and air pollution) account for 7.7 million deaths annually or 15 percent of the global death toll of 52 million. One in five children in the poorest regions of the world will not live to see their fifth birthday, mainly because of environment-related diseases, i.e., mostly due to malaria, acute respiratory infections or diarrhea—all of which are largely preventable. This amounts to 11 million childhood deaths a year worldwide.<sup>9</sup>

## **Inadequate Sanitation**

Of the 7.7 million deaths, five million deaths result from poor drinking water and poor sanitation infrastructure. More than one billion people in developing countries live without adequate shelter or in

unacceptable housing. And more than 2.9 billion people have no access to adequate sanitation and all of these are necessary for good health.<sup>10</sup> Lack of sanitary conditions contributes each year to approximately 2 billion diarrhea infections and 4 million deaths, mostly among infants and young children in developing countries.<sup>11</sup> In the United States, inadequate sanitation accounts for 940,000 diarrhea infections and about 900 deaths each year.

### **Water Poverty**

An estimated one-sixth of the world's population (1.1 billion people) remains without access to improved sources of water. More than 1.4 billion people lack access to safe water. Dirty water is the world's "deadliest" pollutant.<sup>12</sup> Privatization of water looms as a major environmental and economic justice issue in the 21<sup>st</sup> century.

The international community has pledged to cut by half the number of people without access to safe drinking water by 2015. In reality, rich nations have not mobilized the resources necessary to aid poor nations and poor people in the North to achieve universal access to clean water. Instead, governments and international financial institutions are turning to the private sector to make these investments. Such privatization moves could undermine poor people's access to clean water and sanitation.

### **In-Door Air Pollution**

Air pollutants adversely affect the health of 4 to 5 billion people worldwide. A growing world population is burning more fossil fuels, emitting more industrial pollution and driving more automobiles. Over 2.7 million annual global deaths can be attributed to air pollution.<sup>13</sup> Two-thirds of the global air-pollution related deaths occur in rural areas, where the burning of biomass fuel. Over 3.5 billion people, mostly in rural areas, are exposed to high level of air pollutants in their homes. An estimated 2 million deaths result from exposure to stove smoke inside homes.<sup>14</sup>

### **Access to Clean Energy**

More than two billion people in the world today do not have access to sufficient energy to meet their basic needs. Some 80 percent of all energy used in the world comes from fossil fuels. Fossil fuels are the main contributors to environmental and health problems. In 1998, new renewable energy accounted for only about 2% of all primary energy consumption globally.

### **Childhood Lead Poisoning**

In most large cities in the developing world the percentage of children affected by lead poisoning is staggering. Motor vehicles account for up to 90 percent of all airborne lead contamination in urban areas where leaded gasoline is still widely used. Although lead from air pollution causes relatively few deaths, it causes a great deal of disability, particularly among children. According to the Global Lead Network, 47 countries has completed phase-out of leaded gasoline in January 2002.<sup>15</sup> However, many other countries and regions still use gasoline with high lead content, including Eastern Europe, the Middle East, and Africa. The World Health Organization (WHO) estimates the effect of lead poisoning to be about 1 to 3 points of IQ lost for each 10 ug/dl lead level. At higher levels, the effect may be larger.

Lead affects almost every organ and system in the body—including the kidneys and the reproductive system. Recent studies supported by NIEHS suggest that a young person's lead burden is not only linked to lower IQ and lower high school graduation rates but to increased delinquency. An estimated 16 percent of juvenile delinquent behavior in the U.S. is attributable to high lead exposure.<sup>16</sup>

### **Toxic Production**

An estimated 40 percent of world deaths can now be attributed to various environmental factors, especially organic and chemical pollutants. Approximately 80,000 different chemicals are now in commercial use with nearly six trillion pounds produced annually in the United States.<sup>17</sup> More than 80% of these

chemicals have never been screened to learn whether they cause cancer, much less tested to see if they harm the nervous system, the immune system, the endocrine system or the reproductive system.<sup>18</sup>

The current U.S. approach is also not based on real life exposures since people and animals are not exposed to one chemical in isolation, but rather are exposed to an array of toxic chemicals.<sup>19</sup> Of the top 20 chemicals reported to the U.S. Federal EPA under the toxic Release Inventory (TRI) as those released in the largest quantities in 1997, nearly 75 percent are known or suspected neurotoxins.

### **Pesticide Poisoning**

Nearly 3.3 million pounds of pesticide product were exported from the U.S. between 1997 and 2000.<sup>20</sup> The bulk of these products were shipped directly or indirectly to the developing world. Pesticide poisoning continues to be a severe environmental and health problem in developing countries. An estimated 25 million poor farmers and farm workers suffer from pesticide poisoning each year; hundreds of thousands die.<sup>21</sup>

### **Cancer and the Environment**

Of the 80,000 pesticides and other chemical in use today, 10 percent are recognized as carcinogens.<sup>22</sup> There are more than 8 million Americans who have cancer.<sup>23</sup> Cancer-related deaths in the U.S. increased from 331,000 in 1970 to 521,000 in 1992, with an estimated 30,000 death attributed to chemical exposure.<sup>24</sup> The fraction of cancer deaths caused by occupational exposures vary from four per cent to over 20 per cent due to the lack of data on the carcinogenic potential of most industrial chemicals and the absence of effective public health surveillance systems for occupational disease.<sup>25</sup>

### **Race and Place**

In the real world, all communities are not created equal. Racism is a potent factor in sorting people into their physical environment. Racism influences land use, housing patterns, and infrastructure development.<sup>26</sup> The roots of racial discrimination are deep and have been difficult to eliminate—even when anti-discrimination laws exist. Government and industry are major perpetrators of environmental injustice.<sup>27</sup>

The United States, Brazil, and South Africa are three countries where race and color clearly play a significant part in distributing public "benefits" and public "burdens."

Apartheid-type housing, development, and industrial policies in the U.S. have resulted in limited mobility, reduced neighborhood options, diminished job opportunities, decreased environmental choices, and elevated health threats to people of color.

Racism is still an important factor in explaining social inequality, political exploitation, social isolation, and health and well being of blacks in Brazil, South Africa, and the United States. Racism plays a major role in sorting people into Brazil's *favelas*, South Africa's townships, and the United States' ghettos, barrios, and reservations. Racism provides privileges for "whiteness" at the expense of blacks and other people of color.<sup>28</sup>

The environmental and health crisis faced by present-day South Africans originates through the combination of poor land, forced overcrowding, poverty, importation of hazardous waste, inadequate sewage, dumping of toxic chemical into the rivers, strip mining of coal and uranium, and outdated methods of producing synthetic fuels. Apartheid herded approximately 87 percent of the black population into 13 percent of the country's territory. Such a policy spelled environmental disaster.<sup>29</sup> Race and Place

### **Global Dumping Grounds**

Hazardous waste generation and international movement of hazardous waste still pose some important health, environmental, legal, and ethical dilemmas. The "unwritten" policy of targeting Third World nations for waste trade received international media attention in 1991. Lawrence Summers, at the time he was chief economist of the World Bank, shocked the world and touched off an international firestorm when

his confidential memorandum on waste trade was leaked. Summers writes: "'Dirty' Industries: Just between you and me, shouldn't the World Bank be encouraging MORE migration of the dirty industries to the LDCs?"<sup>30</sup> Between 1989 and 1994, an estimated 2,611 metric tons of hazardous waste was exported from Organization for Economic Cooperation and Development (OECD) countries to non-OECD countries.<sup>31</sup>

The transboundary shipment of hazardous wastes, toxic products, and risky technologies to poor communities in the developed countries of the North and developing countries of the South, the systematic destruction of indigenous peoples' land and sacred sites, the poisoning of Native Americans on reservations, Africans in the oil-rich Niger Delta, African-Americans in Louisiana's Lower Mississippi River petrochemical corridor known as "Cancer Alley," and Mexicans in the border towns along the United States border all have their roots in economic exploitation, racial oppression, devaluation of human life and the natural environment, and corporate greed.<sup>32</sup>

In a response to the growing exportation of hazardous wastes into their borders, the Organization of African Unity (OAU) and the G-77 nations mobilized to pass two important international agreements.<sup>33</sup> On January 30, 1991, the Pan-African Conference on Environment and Sustainable Development in Bamako, Mali adopted the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous wastes within Africa or the Bamako Convention.<sup>34</sup>

The G-77 nations were instrumental in amending the Basel Convention to include Decision II/12, despite opposition from the United States. On September 1995, the third Conference of Parties to the Basel Convention (COP III) approved an amendment that would ban the export of hazardous wastes from highly industrialized countries (specifically OECD countries and Lichtenstein) to all other countries.<sup>35</sup> While Bamako and Basel may have made certain dumping formally illegal, in practice they have not prevented the transboundary movement of hazardous waste to developing countries.

Loopholes still allow hazardous wastes to enter countries that do not have the resources or infrastructure to handle the wastes. For example, Karliner reports that "products such as pesticides and other chemicals banned or severely restricted by the United States, Western Europe and Japan because of their acute toxicity, environmental persistence or carcinogenic qualities are still regularly sent to the Third World."<sup>36</sup> Having laws or treaties on the books and enforcing them are two different things.

Whether at home or abroad, environmental racism disadvantages people of color while providing advantages and privileges for whites. A form of illegal "exaction" forces people of color to pay costs of environmental benefits for the public at large. The question of who pays and who benefits from the current industrial and development policies is central to any analysis of environmental racism.

The Bhopal tragedy is fresh in the minds of millions of people who live next to chemical plants. The 1984 poison-gas leak at the Bhopal, India Union Carbide plant killed thousands of people--making it the world's deadliest industrial accident. It is not a coincidence that the only place in the U.S. where methyl isocyanate (MIC) was manufactured was at a Union Carbide plant in predominately African American Institute, West Virginia.<sup>37</sup> In 1985, a gas leak from the Institute Union Carbide plant sent 135 residents to the hospital.

### **U.S.-Mexico Border Ecology**

The conditions surrounding the more than 1,900 maquiladoras, assembly plants operated by American, Japanese, and other foreign countries, located along the 2,000-mile U.S.-Mexico border may further exacerbate the waste trade. The industrial plants use cheap Mexican labor to assemble imported components and raw material and then ship finished products back to the United States. Over a half million Mexican workers are employed in the maquiladoras.

All along the Lower Rio Grande River Valley maquiladoras dump their toxic wastes into the river, from which 95 percent of the region's residents get their drinking water.<sup>38</sup> In the border cities of Brownsville, Texas and Matamoros, Mexico, the rate of anencephaly--babies born without brains--is four times the national average. Affected families filed lawsuits against 88 of the area's 100 maquiladoras for exposing

the community to xylene, a cleaning solvent that can cause brain hemorrhages, and lung and kidney damage.

The Mexican environmental regulatory agency is understaffed and ill equipped to adequately enforce its laws. Many of the Mexican border towns have now become cities with skyscrapers and freeways. More important, the “brown pallor of these southwestern skies has become a major health hazards.”<sup>39</sup>

### **Radioactive Colonialism and Threatened Native Lands**

There is a direct correlation between exploitation of land and exploitation of people. It should not be a surprise to anyone to discover that Native Americans have to contend with some of the worst pollution in the United States.<sup>40</sup> Native American nations have become prime targets for waste trading.<sup>41</sup> The vast majority of these waste proposals have been defeated by grassroots groups on the reservations. However, “radioactive colonialism” is alive and well. Winona LaDuke sums up this “toxic invasion” of Native lands as follows:

While Native peoples have been massacred and fought, cheated, and robbed of their historical lands, today their lands are subject to some of the most invasive industrial interventions imaginable. According to the Worldwatch Institute, 317 reservations in the United States are threatened by environmental hazards, ranging from toxic wastes to clearcuts.

Reservations have been targeted as sites for 16 proposed nuclear waste dumps. Over 100 proposals have been floated in recent years to dump toxic waste in Indian communities. Seventy-seven sacred sites have been disturbed or desecrated through resource extraction and development activities. The federal government is proposing to use Yucca Mountain, sacred to the Shone, a dumpsite for the nation’s high-level nuclear waste.<sup>42</sup>

Radioactive colonialism operates in energy production (mining of uranium) and disposal of wastes on Indian lands. The legacy of institutional racism has left many sovereign Indian nations without an economic infrastructure to address poverty, unemployment, inadequate education and health care, and a host of other social problems.

In 1999, Eastern Navajo reservation residents filed suit with the Nuclear Regulatory Commission to block a permit for uranium mining in Church Rock and Crown Point, New Mexico. The Mohave tribe in California, Skull Valley Goshutes in Idaho, and Western Shoshone in Yucca Mountain, Nevada are fighting the construction of a radioactive waste dumps on their tribal lands.

The threats to indigenous peoples are not solely confined to the United States. Native and indigenous people all cross the globe are threatened with extinction due to the greed of mining and oil companies and “development genocide.” Sociologist Al Gedicks’ 2001 book *Resource Rebels: Native Challenges to Mining and Oil Corporations* traces the development of grassroots multiracial transnational movement that is countering this form of environmental racism.<sup>43</sup> Over 5,000 members of the U’Wa tribe of Colombia have organized to prevent Occidental from drilling on sacred U’Wa land.

### **The Threat from Military Toxics**

Private industry does not have a monopoly on ecological threats to communities of color. War and military activities are also big players. The U.S. Department of Defense (DoD) has left its nightmarish nuclear weapons garbage on Native lands and the Pacific Islands. In fact, “over the last 45 years, there have been 1,000 atomic explosions on Western Shoshone land in Nevada, making the Western Shoshone the most bombed nation on earth.”<sup>44</sup>

The Marshall Islands residents live under a constant threat from radioactive contamination from weapons testing. Many island residents were uprooted, relocated, and displaced from their homeland—never to be fully compensated for their losses. For decades, island residents have waged a campaign for reparations from the U.S. government.

The military has also spoiled pristine lands in Alaska. Over 648 U.S. military installations, both active and abandoned, in Alaska are polluting the land, groundwater, wetlands, streams and air with extensive fuel spill, pesticides, solvents, PCBs, dioxins, munitions, and radioactive materials. Many of these military installations are in close proximity to Alaska Native villages and traditional hunting and fishing areas. Military toxics threaten the way of life of Alaska Natives.<sup>45</sup>

Residents on the island of Vieques, Puerto Rico are engaged in a heated battle against the U.S. Navy. The tiny island is inhabited by 9,000 residents who are bordered on both sides by the Navy. The Navy has used the U.S. commonwealth island as a bombing range since 1941. In 1999, a stray Marine Corps bomb killed a civilian security guard.<sup>46</sup> Over 600 protesters have been arrested. Opponents contend that the bombing exercises threaten the environment and health of island residents. Several studies point to health-problems which are directly related to the level of noise coming from the ship-to-shore shelling of Vieques.<sup>47</sup>

### **Climate Justice**

Global climate change looms as a major environmental justice issue of the 21<sup>st</sup> century. Mounting scientific evidence documents that human activities are altering the chemical composition of the atmosphere through the buildup of greenhouse gases—primarily carbon dioxide, methane, and nitrous oxide. These negative impacts are expected to hit poor people in the developing countries and island states especially hard.<sup>48</sup>

Changing climates are expected to raise sea levels, alter precipitation and other weather conditions, threaten human health, and harm fish and many types of ecosystems. Climate justice advocates are calling for solutions to ward off global climate warming that do not fall hardest on low-income communities, communities of color, or workers employed by fossil fuel industries.<sup>49</sup>

Giant oil companies are major contributors to both local pollution and global warming. Not surprising, resistance to reigning in climate-altering activities through the Kyoto Protocol has come largely from the fossil fuel lobby, companies that either extract, process and sell fossil fuels, generate electricity using coal, oil or gas, and automobile makers. Communities of color from the Niger Delta to the Louisiana Chemical Corridor suffer from environmental and health assaults from being fence line with polluting industries, while reaping few economic benefits.

### **Conclusion**

The environmental justice movement emerged in response to environmental inequities, threats to public health, unequal protection, differential enforcement, and disparate treatment received by the poor and people of color. Poverty and environmental degradation are intricately linked and take a heavy toll on billions of people in developing and industrialized countries alike.

### **Recommendations**

Any search for sustainable development must address the root causes of both poverty and pollution and seek solutions to this double threat. A large part of global security rests

*Design a Holistic Approach to Environmental Protection.* Many environmental justice problems could be eliminated if existing environmental, health, housing, employment, and human rights laws were vigorously enforced in a nondiscriminatory way.

*Universal Access to Clean Water.* Governments should implement programs to make safe drinking water and adequate sanitation available and affordable to all. Conduct assessment and research on impact of privatization on poor people's access to clean water and sanitation.

*Poverty Eradication.* Governments should implement poverty eradication program that targets the world's poor that live on less than \$1 per day.

*Clean and Affordable Energy.* Governments should initiate an action program to make available finances and infrastructure to bring clean and affordable and sustainable energy sources to the 2 billion people who lack these energy service by 2012. Governments should adopt a target increasing the global share of new renewable energy sources to 15% by 2010.

*Decrease Pesticide Use.* Governments should institute protocols, plan, and regulations to decrease industrial pesticide use, including prohibiting the export of banned or never registered pesticides, implement integrated pest management (IPM), evaluate the hazards posed by pesticide exports, and improve the quality and quantity of information pesticide production, trade and use and publish information in the public record.

*Reduce Children's Exposure to Neurotoxicants.* Abate lead in older housing; complete global phase-out leaded gasoline and lead paint; target high-risk children, screening, early detection, treatment; increase allocation of medications that help reduce or remove lead; use new, safe lead removal techniques; and dietary improvements.

*Strengthen Legislation and Regulations.* A legislative approach is needed where environmental, health, and worker safety laws and regulations are weak or nonexistent. However, laws and regulations are only as good as their enforcement.

*Eliminate Jobs vs Health Tradeoffs.* Governments need to live up to their mandate of protecting public health and the environment, while at the same provide sustainable economic development.

*Close Corporate Welfare Loopholes.* State-sponsored pollution and lax enforcement have allowed many communities of color and poor communities to become the dumping grounds. Industries and governments (including the military) have often exploited the economic vulnerability of poor communities, poor states, poor nations, and poor regions for their unsound, "risky", and nonsustainable operations.

*Forge International Cooperative Agreements.* Governments will need to take responsibility and develop policies that address global environmental racism. The poisoning of African-Americans in Louisiana's "Cancer Alley," Native Americans on reservations, and Mexicans in the border towns all have their roots in the same economic system, a system characterized by economic exploitation, racial oppression, and devaluation of human life and the natural environment.

*Debt Forgiveness and Environmental Reparations.* Debt forgiveness and reparations for the harm, damage, contamination, destruction, and suffering caused by global environmental racism. Land reform and redistribution that redresses past discrimination.

*Build a Global Environmental Justice Movement.* Provide resources to organizations, networks, institutions, and associations to strengthen the global environmental justice movement.

## **Authors**

Robert D. Bullard, Ph.D., is the Ware Distinguished Professor of Sociology and Director of the Environmental Justice Resource Center at Clark Atlanta University. Professor Bullard is a leading expert on environment justice. He is the author of eleven books that address environmental justice, environmental racism, poverty and pollution, sustainable development, urban land use, community reinvestment, housing, transportation, suburban sprawl, and smart growth. His most recent book, edited with Julian Agyeman and Bob Evans, is entitled *Just Sustainabilities: Development in an Unequal World* (Earthscan, Winter 2002) addresses global sustainable development.

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- <sup>43</sup> Gedicks, *Resource Rebels*.
- <sup>44</sup> LaDuke, *All Our Relations*, p. 3.
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- <sup>47</sup> See CNN.com, "Second Day of Protest Greets Vieques Exercise," (April 28, 2001), posted on CNN.com website: [www.cnn.com/2001/US/04/28/vieques.protests/](http://www.cnn.com/2001/US/04/28/vieques.protests/).
- <sup>48</sup> Environmental Justice Climate Change Initiative, "EJCC Press Release," New York, NY (January 29, 2002).
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