Whether you’re a climate change denier or doomsayer, an avid recycler or rabid consumer of plastic bottles, there is one very good but little-known reason to oppose carbon offsets: their immediate and dire human costs. Offset opponents have always maintained that using them to reduce greenhouse gas emissions is like trying to lose weight by paying someone else to go on a diet. But I argue that even more critical is that fact that such proxy schemes present human dangers on both sides of the equation.

Briefly, offsets are based on the idea that greenhouse gases mix rapidly throughout Earth’s atmosphere -- fewer emitted in one place makes up for greater emissions someplace else. Offsets originated with the Kyoto Protocol. In order to make carbon reductions more palatable, Kyoto negotiators established the Clean Development Mechanism (CDM) by which industries in developed nations could cut their emissions by investing in programs in developing nations that reduce, avoid, or sequester CO2 or other greenhouse gases in some other place. As an extra bonus, those programs were also supposed to stimulate sustainable development. Offsets rapidly became a popular alternative for industries unwilling or unable to reduce their own emissions. Experts predict that the CDM will deliver more than half of the European Union’s planned carbon reductions to 2020. In addition, a secondary carbon offset market (known as the voluntary market), for individual consumers and businesses not obligated by Kyoto, reached $705 million in 2008. With the likely passage of the U.S. climate change bill, those numbers are expected to skyrocket.

But mounting evidence shows that carbon offset projects often create more problems then they solve for the communities that host them. Moreover, an exclusive focus on greenhouse gas emissions means that other highly-toxic releases are often overlooked. I recently compiled some of these findings and took them a step further by tracking the path of offsets generated by some well-known projects from the site of their production to the industries they benefited. As it turns out, the trail of carbon offsets might be washed in green, but from start to finish, it is lined with human rights violations.

From the Mountains of Uganda to the Mountains of US Appalachia

Mount Elgon, Uganda offers one of the more well-documented examples of an offset project that went awry for a local community. But further research reveals that problematic human rights issues extend far beyond Mount Elgon, all the way to the U.S. Appalachian states.

The case begins in the Netherlands in 1990 when the Dutch Electricity Generating Board vowed to surpass Kyoto Treaty goals partly through offsetting its emissions. In 1994, the Board established a non-profit offshoot known as the Forests Absorbing Carbon Dioxide Emissions (FACE) Foundation. FACE then partnered with the Uganda Wildlife Authority (UWA) to plant 25,000 hectares of trees inside Mount Elgon National Park. In exchange for financing the planting of the trees, FACE received the rights to the carbon sequestered by those trees estimated at 2.11 tons of CO2 over 100 years. While the trees have thrived (especially in areas where agriculture had been encroaching on them), a number of research reports have found that the people surrounding the tree plantations have had the opposite experience.

A year before the FACE-UWA project began, the Ugandan government declared Mount Elgon a National Park. In so doing, it evicted approximately 6,000 people (some of whom had been living there for 40 years), giving them nine days to vacate their homes. A year later, UWA took over management of the Park, which entailed protecting the biodiversity of the area, managing the carbon plantations and securing the park’s borders. Evicted villagers, who were left homeless and without access to land to graze their cattle or grow subsistence crops, attempted to continue using park land, prompting UWA rangers to respond with violence. For instance, a 2006 World Rainforest Movement report details villagers descriptions of UWA rangers committing rape, arson, shootings and other violent acts. According to the report, villagers retaliated by throwing stones, burning trees, and sabotaging rangers’ vehicles.
In addition, villagers complain that the forest project has not lived up to its commitment to sustainable development. Initially, project leaders promised to employ local people to work in the national park and tree nurseries. However, local council officials contend that the project employs very few people and most of the jobs are only available during the planting period. To this day, the UWA continues to prevent local people from using the land, and violence and retaliations continue, despite a 2005 court ruling that an area of the national park should be set aside for villagers to live on and continue farming. To be fair, land disputes on Mount Elgon predated the FACE Foundation’s offset project, and the UWA maintains that the offset forest has nothing to do with its conflict with surrounding villagers. At the same time, the funding generated by the project likely provided additional incentives and justifications to administer evictions and violently patrol the area.

If we follow some of that funding and track the carbon credits generated on Mount Elgon, we find a maze of corporations, subsidiaries, and carbon-emitting ventures (indeed, one of the major criticisms commonly leveled at carbon trading schemes is that they create an opaque web of financial instruments ripe for corruption). For example, the FACE Foundation is a non-profit organization, but the offset reductions generated by its projects are marketed by a Dutch for-profit partner, known as the Climate Neutral Group (CNG). CNG sells credits to over 500 businesses. It also partners with another for-profit company, Green Seat, which sells offsets (including those created on Mt. Elgon) exclusively to individuals and corporations wishing to balance out emissions from airline travel.

After several major news outlets reported on the violence on Mt. Elgon in 2007, Green Seat posted a notice on its website claiming that neither it nor CNG used offsets from Uganda forestry projects any longer. The FACE Foundation also claimed to have stopped planting trees in the park and to be disengaging from the project. "At this stage we don’t get any carbon credits for this project," Denis Slieker, director of the FACE Foundation, told the LA Times in 2007, "We do not plan to expand anymore in Mount Elgon before these matters are resolved." Yet a recent visit to the FACE Foundation’s website describes the Mount Elgon project as “ongoing.”

Although after 2007, it is unclear exactly what kinds of carbon-production the Mount Elgon project offset, it is certain that it has enabled the building of at least several coal-fired power plants. First, the FACE Foundation was initially established to offset emissions from a new 600 MW coal-fired power station in the Netherlands. Second, CNG customer Enesco is one of the top three energy companies in the Netherlands. Considered to be a particularly green energy company, in 2008, Greenpeace ranked Enesco the “cleanest” power company in the Netherlands. On January 1, 2008, the company proclaimed that its internal business operations were 100% climate-neutral. Yet, my research revealed that 61.2% of the company’s energy supply comes from natural gas, a fossil fuel, and 19.7% -- nearly one-fifth -- comes from coal. Importantly, one quarter to one third of all carbon dioxide emissions worldwide come from burning coal. Additionally, coal plants produce sulfur dioxide, nitrogen oxide, coal monoxide, mercury and arsenic (among other pollutants).

Even if the Ugandan project were able offset the climate harm generated by coal-fired power plants, it would not be able to offset the human costs of coal mining. In fact, the Netherlands closed all of its coal mines in 1974 due to their dangerous conditions. Yet, in 2008 the country imported 3.6 million short tons of coal from the U.S. making it one of the world’s top coal importers. The global demand for coal has expanded a controversial method of coal extraction, known as mountaintop removal, which uses explosives to blast away a mountain peak and expose coal seams. While coal companies claim the practice is safer and more efficient than traditional shaft mining, critics contend that it has already ruined more than 500 mountains while dumping tons of toxic waste into streams and valleys, and that its blasts are driving nearby residents (those who can afford to move) from their homes. Even the U.S. Environmental Protection Agency (EPA) estimates that by 2012, mountaintop removal projects in Appalachia will have destroyed or seriously damaged an area larger than Delaware and buried more than 1,000 miles of mountain streams.

Without foliage and natural layers of soil, the land is rendered unable to retain water. As a result, floods carrying highly toxic debris have increased. For instance West Virginia resident Maria Gunnoe’s home sits directly below a 10-story valley fill that contains two toxic ponds of coal mine waste. Before mining began, Gunnoe’s property was not prone to flooding, but since the mine became operational, her property has flooded seven times, covering her land with toxic coal sludge. In 2007, Gunnoe and her colleagues at the Ohio Valley Environmental Coalition (OVEC) won a federal lawsuit against the U.S. Army Corps of Engineers that repealed some permits for mountaintop removal (the practice of burying streams under mining debris) in southern West Virginia and banned the issuance of new permits. But less than two years later, the Corps defied the federal judge’s orders and granted permits to construct two new valley fills above Gunnoe’s community.
The battle over mountaintop removal continues into the Obama Administration. During his 2008 campaign, President Obama expressed concern about mountaintop removal projects, and in June the EPA signed an interagency plan to regulate it. However, a month earlier, the EPA stated that it would not block 42 of 48 mine projects under review, including some of the most controversial mountaintop mines. Obama has also been a proponent of so-called â€œclean coal technology, which captures the carbon released by coal-fired power plants. Yet this technology does not address the immediate dangers of the mining process, itself. Here again, an emphasis on greenhouse gas emissions provides an excuse for ignoring other kinds of environmental hazards. Moreover, the coal industry and its lobbying power remain strong, thanks in part to carbon offsets, which facilitate the production of coal-fired power plants and the demand for coal. In fact, international coal lobbyists are currently working to establish clean coal projects as certified carbon reduction programs.

To summarize, we return to Mount Elgon where the human ramifications of carbon offsetting are clear â€“ the offset forest intensified existing land disputes and accelerated displacement, violence and impoverishment among local villagers. If we then follow some of those offsets to their buyers, we eventually find certain Dutch energy companies whose portfolios include coal-fired power plants. Tracking the coal firing those plants, we come to the Appalachian region of the U.S., where it is extracted at great cost to local communities. In short, this carbon offset trail â€“ from Uganda to Appalachia â€“ is lined with immediate and real threats to human rights to health, safety and well being.

From Eastern Scotland to Eastern Brazil

On the East Coast of Scotland, one of Europeâ€™s largest oil refineries flares excess gas into the sky, sending sulfur dioxide, nitrogen dioxide and other particles into the nearby town of Grangemouth. Six thousand miles away in eastern Brazil, the villagers of Sao Jose do Buriti struggle against rapidly diminishing water sources and the disappearance of plants that they have subsisted on for generations.

About ten years ago, a foundry near Sao Jose do Buriti threatened to switch from using charcoal to carbon-intensive coal, due to a dwindling supply of charcoal-producing eucalyptus trees. Enter the World Bank, which gathered funding from various sources and initiated a project to expand the foundryâ€™s eucalyptus forest and generate carbon offsets. British Petroleum (BP), then owners of the Grangemouth refinery, had already invested in the World Bank fund as part of a major effort to â€œgreenâ€• their image. BP was also able to continue to operate Grangemouth and still adhere to national carbon emissions standards by counting the Brazilian offsets as emissions reductions.

However, in Sao Jose do Buriti the eucalyptus treesâ€™ enormous roots almost immediately began to soak up vast amounts water, drastically lowering the water table for the entire area. Villagers now had to travel increasingly far to find water, as well as traditional subsistence and medicinal plants. In addition, the tree plantation relied on herbicides and pesticides, which local farmers claim killed crops and poisoned streams. Furthermore, the water shortage destroyed some small businesses that had been in families for generations. Finally, a 2008 report by the Sustainable Energy and Economy Network notes, â€œPerhaps more seriously, groups allege that Plantar pressured local residents to sign letters of support for the project or forfeit employment at the plantations.â€• Those who did publicly oppose Plantar claim that they and their family members were either threatened, or coerced into working for the plantation.

Meanwhile, Grangemouth, which is one of Europeâ€™s largest oil refineries, emits sulfur dioxide, nitrogen dioxide and small particulate matter into the air. In addition, officials at the Scottish Environment Protection Agency (SEPA) have cited the refinery as "one confirmed source" of an oil slick covering several square miles of the Firth of Forth. Grangemouth residents have long complained about high rates of asthma, as well as the smells and noise coming from the plant. The refinery has a similarly noxious track record on a social level: in late April 2008, the Unite union (Grangemouthâ€™s workersâ€™ union) became embroiled in a dispute with the refineryâ€™s current owner, INEOS, over pension policies. The union accused the company of buying assets and then cutting costs by introducing new working practices, lowering wages, and terminating pension schemes.
But the offset trail does not end in Scotland. As in the previous case, offsets bolster the business of multiple multinationals. For example, in 2005 BP sold Grangemouth to INEOS, the third largest chemicals firm in the world, for GBP 5.1 billion. INEOS has come under fire for its involvement in another carbon offset project with its own set of human rights violations. The same year it acquired Grangemouth, INEOS partnered with Gujarat Fluorochemicals Limited (GFL), a company in Gurjarat, India that produces HCFC 22, a refrigerant gas for air conditioning units and refrigerators. GFL wanted to institute a program to capture and recycle HFC 23, a potent greenhouse gas that is a byproduct of producing HCFC 22. INEOS supplied the technology for the program, and both companies received the right to claim the carbon reductions. However, residents of Gujarat claim that the factory has made them sick with joint aches, bone pains, unexplained swellings, throat and nerve problems and temporary paralysis. A recent investigation by the UKâ€™s Daily Mail found dangerously high levels of fluoride and chloride in local water and soil (according to their report, fluoride in the water was more than twice the international acceptable limit). But these chemicals do not contribute to global warming. Thus, those monitoring the program considered it successful in so far as it reduced greenhouse gas emissions.

In 2005, the CDM Executive Board approved the Gujarat project and awarded INEOS and GFL an undisclosed number of Certified Emission Reduction units (CERs) over time (INEOSâ€™ website predicts that together with a second, similar project in Korea, the Gujarat project will generate 3 million tons of CERs annually ). Both companies were then free to sell their CERs to industries in danger of falling short of their national emissions caps. In 2006, GFL made news for doubling its sales revenue by selling a record number of carbon credits. The Daily Mail reports that it then used some of the proceeds from those sales to build a Teflon and caustic soda manufacturing facility â€“ both are highly polluting processes.

This example thus illustrates another way in which carbon credit schemes violate human rights -- by creating dangerously perverse incentives for polluters to continue to pollute.Â First, carbon offset schemes reward corporations for lowering greenhouse gas emissions while allowing other highly, and deadly, toxic emissions.Â Second, GFLâ€™s handsome profits from capturing HFC-23 have inspired other HCFC-22 to follow suit, drastically lowering the cost of its manufacture. Experts predict that soon, a global over-reliance on the chemical, itself a powerful greenhouse gas, will result.

To conclude, this case has ramifications for human rights across the globe. Most directly, offsets allowed the continued pollution of the Grangemouth community, and they introduced new hardships for people in Sao Jose do Buriti. More indirectly, the notion that Grangemouthâ€™s emissions were being neutralized made it an attractive asset that increased the profitability of its various owners, enabling them to invest in other toxic projects. In the case of INEOS, I propose that purchasing Grangemouth made it an even more powerful player in the petrochemicals industry which in turn made it better able to fight off opposition from workers or local communities, or perhaps to lobby for the certification of new kinds of climate change reductions. As well, the acquisition may have bolstered the companyâ€™s ability to continue financing its investments in other offset projects such as the GFL-23 program.

At the same time, this case also demonstrates how awareness about carbon offset projectsâ€™ trails of tears can connect communities in very tangible ways and catalyze collective action. For instance, in 2003 activists opposed to the Sao Jose do Buriti project attracted the attention of global NGOs, which helped local activists disseminate information about their situation. Eventually, Carbon Trade Watch (a project of the Transnational Institute) initiated a project to connect residents of Sao Jose do Buriti and Grangemouth through the exchange of video diaries. As the resulting documentary film depicts, residents of both communities reacted powerfully to a new awareness of their connected plights and spoke of newfound determination to continue their local struggles. In Scotland, the video diaries inspired one participant first to become an activist with Friends of the Earth and then to run for local office.

Thus, while offsets link communities around the globe in extended chains of emiseration, they also bring new opportunities for transnational alliances and partnerships to challenge market-based solutions to climate change. Fostering such opportunities, though, requires a concerted and well publicized stripping of the green veneer in which offsets are currently washed. Only then can we reveal the ecological and social tarnish hidden beneath and implement alternative solutions.
Conclusions

The need for such efforts is urgent. Certainly, not all offset projects violate human rights as egregiously as some of the cases presented here. But these examples are also the tip of an impending iceberg—carbon markets now trade over US $1 billion annually, and the climate bill currently under debate in the US Congress could send those numbers soaring.

Such prosperity creates ever more perverse incentives to pollute. For instance, in Nigeria, energy companies routinely disregarded a national law prohibiting the flaring of methane gas, a practice that creates acid rain, ruins crops, and causes respiratory and skin diseases for local people. Now, those companies can receive offset dollars for recycling the gas (and complying with the law) thanks to the CDM Executive Board’s recent decision to certify programs that fund the enforcement of existing laws to curb greenhouse gases, if local governments are unable to afford enforcements without offset financing.

This December, world leaders will gather in Copenhagen to revisit and renew elements of the Kyoto Protocol. They will also consider certifying several new carbon offset mechanisms, including biofuels, forest conservation, and clean coal programs, although climate scientists have questioned the value of all of these initiatives in mitigating climate change. Even worse, all of these programs have been known to threaten the health and well being of surrounding communities.

As the Senate debates the Waxman Markey bill, and in the months leading up to Copenhagen, we have a narrow but important window of opportunity to redirect the course of climate change mitigation. Myriad non-market based solutions to climate change exist which promote rather than violate human rights. Given the stakes of the system currently in place, we have no choice but to establish more humane and effective alternatives.

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References and endnotes available from the author upon request.

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