

Global Perspectives on  
Environmental Politics  
and The Issue of Climate  
Change

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-Rachel  
Carson

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# Environmental degradation in the Niger Delta, Nigeria

*by Ibrahim Sangare*



Petroleum products are the most usable and useful commodity that the entire world consumes the most every single day and its producers make more revenues. Unfortunately, oil spills continue to destroy the environment, killing the water creatures, damaging the wildlife and pollute the air. Nigeria is one of the Organization of Petroleum Exporting Countries (OPEC) members which Southeast region has been suffering from the oil spills since 1950s.

In our study, we will analyze the impacts of the environment degradation of the Niger Delta in Nigeria by the oil spills and how it affects the life of Ogoni people who live the region. Also, we will explore the assessment of the oilfields in the Niger Delta, River State by the United Nations Environment Program (UNEP) experts' team. Then, we will talk about the reactions of the Ogoni people

in response for their survival and the rise of conflicts in the area. Finally, we will see how Nigerian government responded to the environmental damage for the benefit of Nigeria and the Ogoniland.

Nigeria is located in Western Africa on the Gulf of Guinea. Nigeria is the most populous country in Africa with approximately 181,562,056 inhabitants living within an area which is 923,768 square kilometers, about six times Georgia. (Agency, 2016). Its natural resources are natural gas, petroleum, tin, iron ore, coal, limestone, niobium, lead, zinc. Agricultural land represents 78%, including arable land 37.3%; permanent crops 7.4%; permanent pasture 33.3%, forest: 9.5%, other: 12.5% (2011 est.). (Agency, 2016). But since the discovery of huge deposits of oil in the 1960s in the Niger Delta, its economy turned into petroleum

industries abandoning the agricultural sector in the North. The oil industry provides large revenues and Nigeria is a member state of the Organization of Petroleum Export Countries (OPEC).

Despite its petroleum wealth, Nigeria still continues to face ethnic and religious confrontations between the North Muslim and the South Christian people, and between the transnational corporations backed by the national governments and the local indigenous for driven oil benefits. Oil exploitation on the Niger Delta has contaminated the lands, water, and air through its spills leading the pollution of the drinking water supply, the rivers and its fishes, forests, and making the air breathing dangerous for people in the areas such as the land of Ogoni people which protests were bloody sanctioned. United Nations Environment Program (UNEP) led an assessment on the affected areas and requested Nigeria to implement some recommendations that are emergent needs for the restoration of the environmental biodiversity.

The Royal Dutch Shell Company has been exploiting Nigeria's oil since before independence. The discovery of oilfields in the Southeast of Nigeria in the 1960s led the government to focus more to the petroleum industries and abandoning the agricultural activities. The urbanization of the South and the rural exodus from the North to the South increased the poverty rate because farms were not any more productive and lucrative. The Niger Delta city such as Port Harcourt started developing and growing in population size. The government seized native inhabitant's lands and lent them to the oil national and foreign companies. Unfortunately, people of the areas do not get benefits from the oil revenues because of government corruption. When Nigeria was ruled by many military regimes from 1980s to the late 1990s, it has been impossible to have a democratic rule of law and the violation of human rights was a current habit. The military regimes used violence to oppress opponents to their bad governance. That is one of the reasons why ethnic groups in the River State steal oil from pipelines to be sold in order to survive. Furthermore, they use sabotage to destroy the oil installations to manifest their discontents about their environmental damage. The majority in

the River State is the Ogoni people which is around. In 1990s to protest against their environment and health degradation, the "Movement for the Survival of the Ogoni People" (MOSOP) started a peaceful sensitization about petroleum industries wastes on their environment to alert the Nigerian government, Shell, and the international community. They also wrote a Bill of Rights containing recommendations for their people survival. (MOSOP, 1991). According to the Ogoni Bill of Rights, oil extraction has polluted and continues to poison their lands for four decades due to the oil spillages. The infrastructures built up in the 1960s have not been updated and there are no maintenance planning. On 4 January 1993, The Nigerian government banned public gatherings which could affect oil production but MOSOP mobilized over 300,000 people on January 1993 and during the manifestation, Ogoni people beat one of Shell employees. Following that government sent national police to secure the areas despite the slowdown of the oil production activities. On November 10, 1995 the leader of MOSOP, Ken Saro-Wiwa, and nine activist colleagues were hanged by a military-appointed tribunal for incitement to murder of four Ogoni chiefs (Lewis 2005). Amnesty International and Nigerian human rights activists called for economic sanctions on Nigeria's oil and its ban to the Commonwealth membership. Unfortunately, United States refused to adhere to that economic embargo.

Land pollution has impacted the farming so that crops' cultivation is a failure and peasants do not have any alternative means of income. The food scarcity becomes alarming for the people who are now obliged to buy from other regions. That situation impoverished farmers who only rely on the cash crop export. Desperate at the national level, four Nigerians farmers and environmental group "Friends of Earth" filed lawsuits against Shell in Netherlands, Europe for the clean-up of their lands in 2012 (Smith-Spark, 2012). In addition to the land pollution, oil spills go under the ground and threaten the water supply. The clean water is not anymore available in the Niger Delta. The groundwater is mixed with oil. The population of the River State draw contaminated drinking water from their wells which is dangerous for human health.

They have been complaining for years to the successive military regimes but nothing has been done to improve the situation. Oil industries also degraded the rivers. Fishes in the streams are poisoned with hydrocarbons so that fishers have to go further on the offshore for fishing. The mangroves lose their origin shape. Also, the vegetation has been affected by the high density of the oil factories wastes (UNEP, 2011).

The air is contaminated by the oil wastes. The burning of gas flares puts in the atmosphere substances such as hydrocarbons, carbon monoxide and carbon dioxide 24 hours a day for 33 years, according to the "Ogoni Bill of the Rights", and it provokes health hazards. The bill claims that the environmental pollution and degradation reduce their life expectancy. If any action is taken that will result the extinction of their ethnic group. In her report, Laura Smith-Spark states that: "Control and maintenance of oilfield infrastructure in Ogoniland has been and remains inadequate: the Shell Petroleum Development Company's own procedures have not been applied, creating public health and safety issues" (Smith-Spark, 2012).

The environmental degradation has not known any efficient improvement because Nigerian economy is based on oil activities. Nigeria is one of the strongest economy in Africa. The GDP of Nigeria is estimated at US. \$1.1 trillion in 2015 and oil is the dominant source of income. Oil export represents 80% of Nigeria federal government revenue and the Niger Delta is the source of 90 % of Nigeria's oil. (CIA, 2016). Oil exploitation is so productive that the federal government strived to maintain transnational corporations' investment by any means. Like many developing countries, the International Monetary Fund's Structural Adjustment Programs led the country to focus on the massive exploitation of its natural resources and a huge deterioration of the environment, the ecology, ecosystem and the people life's quality. The oil drills destroyed "the world third largest wetland" to "the most polluted places on Earth" where 9 million to 13 million of barrel of oil spillage. (Smith-Spark, 2012). Thus the dependency on oil sector was an obstacle to the Niger Delta region amelioration.

The country's military regimes violated the human rights of Ogoni. The Niger Delta, River State did not benefit from the oil revenues. Government did not provide public welfare such as clean drinking water, electricity, roads, and health facilities which they claimed in vain for years. Instead Sani Abacha's regime molested Ogoni people by killing individuals and burning their villages. The military governments were corrupted by Oil companies through bribes. By 1999 civilian government took the head of the country through democratic election after the mysterious death of President Sani Abacha.

After many years of protests and negotiations, the Nigerian government and some actors have reached a study agreement of Ogoniland in the Niger Delta under the supervision of United Nations Environment Program (UNEP). The Environment assessment of Ogoniland started in 2011 and the team was comprised of national and international experts to study different affected sites for two years evaluation. During fourteen months, experts went to 200 places to take 4,000 samples to be analyzed including 142 groundwater sites, and 122 kilometers of pipelines. They also registered 5000 medical records and met 23000 people of soil contamination. The work was impartially and independently done and drew conclusions available to the public knowledge, government, and oil companies. The findings mentioned major number of sites which represent severe dangers to human well-being from polluted drinking water (UNEP, Environmental Assessment of Ogoniland, 2011). According to the UNEP report, the environmental pollution has spread further and deeply infiltrated in the soil. The damage is significant and needs to be tackled with precautions in order to clean up and restore the land. The suggestion is to apply a strategic policy for a sustainable development of oil extraction that will also benefit the communities' lives and livelihoods (UNEP, Environment for Development, 2014).

In fact the team of experts made conclusions and proposed some recommendations. They states that the fully environmental restoration might take 25 to 30 years. To oversee the adequate monitoring of the projects, the government has to create the Ogoniland Environment Restoration Authority

(OERA) with \$1 billion budget financed by oil industry and the government. Thus, OERA will provide potable water to the population, inform them about contaminated wells by putting signs. Also, the authority will sensitize local communities to stop artisanal refining and illegal oil trafficking. Furthermore, the budget will finance the clean-up of surface water, swamplands and the decontamination of groundwater overtime.

As of today, the Ogoniland oil contamination remains unsolved. The delay of funding becomes problematic because Shell does not want to be considered as the main polluter which must endorse the price of the clean-up. Therefore it asks for other oil parties such as Nigeria national oil company, Total, and Agip to be fined too. Under the transparent authority installed by the government, the funds will be available: said Shell spokesman (Vidal, 2015).

Nigerian newly elected government of Muhammadu Buhari provides fund to the cleaning of the Niger Delta region from the oil contamination in 2015. Shell agreed to make a first payment of \$330 million.

In conclusion, it is noteworthy to say that oil production boosted Nigerian GDP since 1970s, making the country one of the giant in African economies and a member state of the OPEC. The exploitation of oil damaged lands in the Niger Delta in the South of Nigeria and destroyed the wildlife. Ogoni people who are farmers and fishers saw their crop production unsuccessful, wells containing hydrocarbons, Greenhouse gases spreading in the atmosphere and provoking acid rain. Thanks to the UNEP report in 2011 that Ogoni group fight for survival was recognized after their massacre by the military regimes of Ibrahim Babangida and Sani Abacha. Only in 2015 that Nigerian government planned to start the clean-up of the River State contaminated environment.

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Shell Petroleum is destroying The Niger Delta.  
This region is already facing pollution,  
corruption and human rights violations.

Growing plants provides an  
opportunity to revive this land,  
preventing further deterioration.

# Hydro-Fracking in America

*by* Faizi Javaid



Despite revitalizing American energy markets, hydro fracking remains one of the most controversial methods of extraction in the 21<sup>st</sup> century. Although it has provided employment and lowered The U.S.'s dependency on foreign oil, it pollutes a state's air, land and water. Point source pollution is when someone can identify the source of where the pollution is coming from. Meanwhile, non-point sources of pollution are not attributed to a particular source and its origins are difficult to find. Hydro fracking stimulates point and nonpoint water pollution because it accelerates ecosystem damage, the amount of chemicals found in water and provides a public policy issue needing to be addressed.

Before grasping hydro fracking effects, one should comprehend its fundamentals. A recent experiment illustrates the science behind how hydraulic fracturing is achieved. The demonstration shows

how rock formations are cracked open through stress waves. First, water pressure is used to create a blast. Next, the blast encounters the interface of the aqueous medium with the borehole wall. Soon after, the blast inhibits the expansion of the bubble pulse. Finally, a stress wave is made. Stress waves are imperative because they express the degree cracks are made on formations. The magnitude of a stress wave determines whether a rock formation functions in releasing deposits of natural gas.

After these waves are made, a high pressure water mixture is directed at the rock, releasing gas accumulations. Water, sand and chemicals are injected, penetrating the rock and allowing the gas to flow to the head of the well.

Fracking grants access to natural gas from previously unavailable underground formations such as tight sandstone and coal bed methane.

Tight sandstone are formations with unconnected pores with low permeability. Likewise, coal bed methane is natural gas removed from coal beds.

This activity is typically produced along The Marcellus and Barnett Shales. Shales are fine-grained, sedimentary rocks composed of mud mixed with clay and mineral. Furthermore, The Marcellus Shale is located in the northeastern region of The United States. Meanwhile, The Barnett Shale is found in the Fort Worth Basin in Northeast Texas. Stress waves are the building blocks to hydro fracking because each wave generated contributes more to extraction. Shale production will make up half of American natural gas production in the next twenty five years.

The harms from this multimillion dollar industry are abundant on a local, domestic and global level. The vast amounts of water discharged from a fracking site are substantial. This water is filled with numerous chemicals yet only a handful of individuals know its contents. Industries citing trademark rights protect its brine. Flow back deprecates aquatic life, contributes to stream bank erosion and salt deposition. This results in infertile soil, sodium buildup and altering surface hydrology. In 2013, The Environmental Protection Agency estimated that 2.3 billion gallons were used daily.

Despite this process tilting the battle of sustainable development towards big business, wastewater treatment plants are available to mitigate this problem. These facilities are successful at removing flow back chemicals but they cannot remove them all. In addition to trademark privacy, big business has also benefitted from Congress. In 2003, Congress exempted fracking from The Safety Water Drinking Act (SWDA) through The Haliburton Loophole.

This loophole is instrumental in how The EPA monitors hydro fracking. This escape clause was initiated by former Vice president Dick Cheney by lobbying a Republican controlled Senate to pass The Bush-Cheney Energy Bill in 2005. This permitted coal bed methane plants to directly discharge their flow back water into streams. Fracking also remains to be regulated by The Resource Conservation and Recovery Act (RCRA)

because it is yet to be designated as a hazardous waste.

Another aspect needing further examination is the role of the EPA. The EPA views Congress as a source of never ending problems while Congress perceives The EPA as always lagging behind to make ends meet. Despite The EPA making sound and critical advancements overtime, their budget remains underfunded since The 1980s. In 1988, The EPA issued a regulatory determination, stating if it classified oil and gas wastes as hazardous, it would result in an increase in administrative burdens. From an environmental standpoint, it is unfortunate The EPA took this position. The EPA failed to realize the severity of this mistake as flow back water is a reusable danger to ecosystem management. Conducting less paperwork at the cost of biodiversity is not a fair and balanced contract.

If The EPA classified oil and gas wastes as hazardous waste, it would create a ripple effect on a social, economic and political level. Gas industries would be under strict scrutiny on when they drill, what they deposit and where they put their waste storage. They would be subject to RCRA TSDF permit requirements. They would not be allowed coal bed methane flow back to be directly discharged into waterways.

Fracking would decrease due to increased expenses in overhead costs by abiding by newer regulation. The battle of sustainable development would turn to environmental conservation as natural resources would be viewed as an end to itself instead of a mean to making money. This would be one of many steps to alter and reverse the pyramid of the triple bottom line.

Hydro-fracking stimulates point and nonpoint water pollution because it accelerates ecosystem damage, the amount of chemicals found in water and provides a public policy issue needing to be addressed. Flow-back creates substantial long term harm to American citizens, ecosystems, and wildlife. It propels a systemic inclination to increasing revenue and decreasing the amount of research and development in viewing this problem from a public health perspective. Hydro fracking

also encapsulates Congress's inability in keeping up with current developments as well as highlighting the problem of dark money in politics. Finally, it exemplifies how the agency that is capable of producing great change is being derailed by the government that is meant to support it.

Despite the optimism of relying less on foreign oil imports from intergovernmental organizations such as OPEC, fracking presents a significant threat to environmental security. Stalemates occur in Congress because Republicans insist fracking should not be placed under RCRA & SWDA. Unlike Democrats, they argue it enters the earth below the water table and doesn't pollute groundwater. A perfect example of this dilemma is when The Pittsburg City Council voted unanimously forbidding natural gas drilling due to health and environmental safety concerns in 2010 but their governor Tom Corbett pledged to remove this. Not only do the elected officials, town hall voters, and scientists have to deal with the bureaucracy, they have to constantly adapt with technological advancements. Modern technology advances more rapidly than lawmaking and regulation. If political parties had a rivalry in which party came up with efficient and practical ideas, it would be beneficial. Instead, the opposite occurs. With The EPA coping to keep up with new chemicals being produced at a ridiculous pace, it is understandable why Pittsburg presents flaws as well.

It is noteworthy mentioning hydro fracking is an energy issue. Natural gas remains attractive to world energy markets because of the volatility of energy prices and the need for cleaner sources. By 2020, fracking will contribute to a fifth of American gas. Despite natural gas being a fossil fuel and nonrenewable resource, it also encompasses positive aspects as well. Natural gas tends not to increase trade deficits and some environmentalists argue that natural gas could become the primary source of electricity in America while serving as a bridge from heavy carbon sources to renewables.

Hydro-fracking stimulates point and nonpoint water pollution because it accelerates ecosystem damage, the amount of chemicals found in water and provides a public policy issue needing to be

addressed. Political partisan stalemates contribute and metastasize environmental harm. While Democrats attempt to use their leverage in mitigating this dilemma, Republicans operate on an obstructionist basis and deny climate change's existence. Although both agree on depending less from Persian Gulf states, they thwart one another's efforts domestically. Corporate lobbying remains the primary cause of dysfunction as egregious campaign contributions are donated. Without a modern day Glass Steagall, this vicious cycle continues. Furthermore, natural should be perceived as a link between renewable and nonrenewable resources. It should not be viewed as a permanent alternative.

Despite its achievements, it continues to contribute to point and nonpoint water pollution.

Another lens hydro fracking is seen is how it relates to civil law. When it comes to allocating fault, who is to blame in the struggle of negligence versus strict liability is central. The question most lawsuits relating to fracking attempt to answer is whether gas companies should be strictly liable for contaminated drinking water wells. In *Branch v. Western Petroleum*, one observes how the judge ruled in favor of landowners but by a slim margin. In *Berry v. Shell Petroleum*, the court ruled that the water supply of a state is of greater importance than the operation of a business at a reduced cost. Despite an impermissible harm and entanglement present in cases, homeowners are forced to deal with gas companies and their army of lawyers finding loopholes; despite being at fault.

Most lawsuits are associated with water well contaminations. Despite no clear evidence linking fracturing fluid from a gas company to a landowner's well, a noticeable trend emerged in New York and Pennsylvania. The closer a well was to an active drilling site, the more likely methane was detected. The former EPA head of Pennsylvania John Hanger states poor well construction and design are at fault yet landowners believe he's misplaced his concern. Despite Pennsylvania enacting stricter laws in February 2011 curtailing this issue, the main problem stems back to fracking not being placed under SWDA.

The primary issue of who is responsible is imperative because concerned citizens do not know exactly what is in flow back. A recent study specified what is in flow back, how micro bacteria interact with chemicals within flow back, and why it causes entropy in stable ecosystems.

The experiment occurred along The Marcellus Shale in Westmoreland County, PA. The conclusion confirmed elevated levels of salts, metals, hydrocarbons and radioactive elements. Furthermore, it found microbial communities in flow back water utilize hydrocarbons as ATP and transform redox labile salts and metals.

The study verified these events increase water management challenges and production costs. The sulfidogenic and acid-producing bacteria found in flow back causes corrosion for metallic infrastructures. Biocides are a precautionary tool available in removing these bacteria, most popularly, Alphaproteobacteria. The bacteria's use of sodium ions present a new threat to environmental security where man made interaction forms a unique change in nature's setting in which both species are being harmed. This experiment demonstrates drilling for shale deposits not only harms our health but an entire environmental network.

Flow back had sodium, chloride, bromide, arsenic, barium and naturally occurring radioactive elements. There were also data discrepancies between the public data available and actual occurrences. They found the closer a location was near flow back activity, the less durable it was. Accidents are underreported because an estimated quarter of hazmat truck accidents involve intrastate carriers and federal statistics are only collected on interstate carriers. Not only does hydro fracking create harm and pollute waterways with these chemicals, asymmetrical information is presented, leading to data inconsistencies. State sovereignty rights are impairing analysis instead of aiding it.

Hydro fracking stimulates point and nonpoint water pollution because it accelerates ecosystem damage, the amount of chemicals found in water and provides a public policy issue needing to be addressed. Despite having a better understanding

of what is in flow-back, civilian lawsuits against massive corporations lead to no traction. Due to the fact the tenth amendment generally allows state laws to supersede federal laws, each state has to work with its own circuit courts to establish new regulations. One proponent dramatically increasing the velocity of this work is if federal courts found state courts unconstitutional and reprimand their ruling but this remains unlikely.

The Barnett Shale, however, presents different problems and solutions. The Railroad Commission of Texas has stated hydro-fracking had zero effect on water wells. However, earthquake averages have dramatically risen from twenty one per year in the last three decades to one hundred and thirty four in 2011. Not only do Texans have to deal with unpredictable earthquakes, they struggle against flow-back as well. A US geological survey estimated about 15,000 chemicals additives of waste are returned to the surface in a three million gallon fracking job. Despite some Texans receiving compensation as this activity is near their land, this hurts Texans overall. Confidential settlements are interfering with risk assessment because of copyright infringement. Settlements are a short term gain for a long term loss as residents receiving compensation will eventually acknowledge arable land will become a scarcity.

Spills, leaks, mechanical malfunctions and illegal dumping have all been reported. Particularly crucial are leaking underground storage tanks, pipelines and spills that have caused extensive contamination with the oxygenate MTBE. MTBE does not degrade easily and is challenging to remove. About twenty states have banned MTBE all together. After February 1<sup>st</sup> 2012, Texas enacted stringent laws to stem these issues. They've increased data consistency with CAS numbers and MSDS sheets.

In order to deal with toxic tort litigation, Texas created TEHI in 2001 as a joint venture between The Texas Department of Health and The Texas Natural Resources Conservation Commission. They adopted a system for tracking waste, monitoring and reporting clear requirements and standards to govern cleanup operations. Another aspect that should be lobbied is additional chemical

disclosure requirements through The Freedom of Information Act as public health should outweigh brine content rights. The ongoing activity in The Marcellus and Barnett Shale hydraulic fracturing stimulates point and non-point water pollution because the process accelerates ecosystem damage and increases the amount of chemicals found in water wells across America. Chemicals like methane, MTBE and more are found much too close to civilian households and their health can deteriorate at the cost of pro industry profit. Both shales have significant issues needing to be addressed as The Marcellus Shale's accidents remain underreported and The Barnett Shale has MTBE.

Hydro-fracking stimulates point and nonpoint water pollution because it accelerates ecosystem

damage, the amount of chemicals found in water and provides a public policy issue needing to be addressed. By analyzing how fracking in The Marcellus and Barnett Shales correlates to The United State's domestic and foreign interest, one gains insight how why its methodology is controversial. By breaking down Congress's role as well as how much of a factor The EPA plays, one comprehends why stalemates occur and how to progress forward with eco-friendly solutions. By investigating how hydro-fracking interacts with civil law, one grasps how entanglement leads a straightforward case into a complex nightmare. Hydro-fracking continues to push American domestic and foreign interests as the severe cost of harming our wildlife, ecosystem and citizens.

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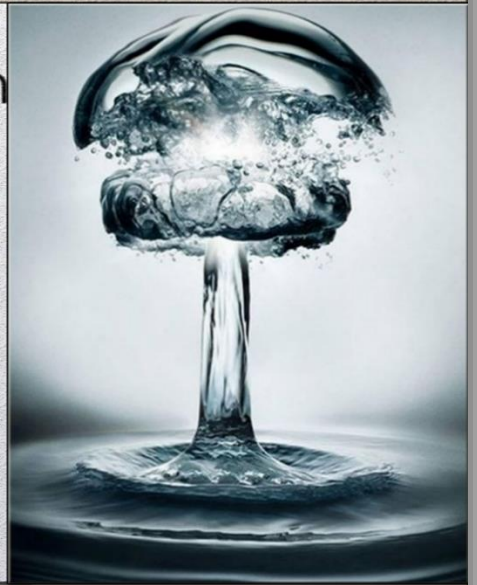
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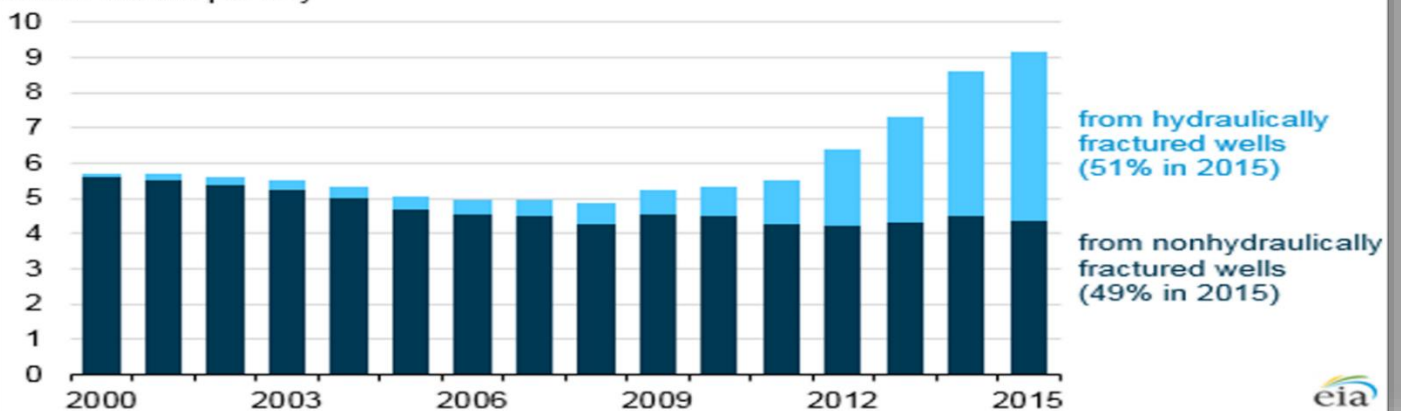
*Water pollution affects every city, country and continent. By lowering our carbon footprint, we can save planet Earth, one step at a time*



Water pollution  
the growing threat



**Oil production in the United States (2000-2015)**  
million barrels per day



# Water Negotiations in the Euphrates-Tigris River Basin and Its Role on Drought in Syria

*by* Britteney Laurenceau



The debate about the role of climate change and its impact on the recent episodes of conflict has inspired new research to examine individual cases of possible climate change-induced conflict, like water scarcity in the case of with Syria and other countries in the Fertile Crescent. While climate change may have contributed to the damaging effects of drought in Syria, some media and policy analysts believe that overstating this point diverts attention away from the region's contentious political issues, and long-term mismanagement of

water sources (Gleick, 2014). Others also claim that placing excessive emphasis on climate change shifts the burden of responsibility for the depletion of Syria's natural resources, away from the exploitive Syrian governments since the 1950s, and allows the Assad regime to unjustly blame external factors for their government's failure to respond to increasing environmental pressures (De Chatel, 2014). President Assad's lack of response to Syria's drought was a major catalyst for the recent civil unrest in Syria, mainly because his

government failed to understand the tenuous position of Syria for water allocation in the Euphrates-Tigris region.

International politics, even on a regional level, although necessary to implement environmental policies, most often is adversative to the political atmosphere within a state. The recent history of water governance in the Euphrates-Tigris river basin, amongst the neighboring nations of Turkey, Iraq, and Syria portrays a case-study where the evidence of this friction between regional politics concerning water allocation and national management of water resources within the different states. The main focus concerning the recent history of water governance is the water negotiations between three riparian states of Turkey, Syria, and Iraq. It is extremely necessary to analyze the present context of a region's ever-dwindling water supply due to environmental stressors, which include climate change-driven droughts, the destruction of water infrastructure, and the disruption of water conservation policy implementation.

In Syria, four years of war has displaced nearly 12 million people. Prior to the uprising in 2011, the country suffered the worst drought recorded in the region, which was also linked to climate change by a study from the National Oceanic and Atmospheric Administration. The drought has been deemed by many researchers as a "threat multiplier" for the instability that ensued in Syria during those years of drought from 2007 to 2010. Crops failed, while food prices rose steeply, and farming families were forced to migrate to urban centers. The new urban influx exacerbated the mismanagement of resources, especially the already scarce water supply, throughout the country, further straining the country's weak infrastructure.

There is growing evidence that the drought of 2007–2010 is likely to reoccur in the Euphrates-Tigris river basin, and with more dire circumstances for Syria, as well as Iraq, as a result of Syria's recent internal conflict (Kelley et al., 2015). Studies have found that higher temperatures and longer dry seasons are likely to continue in the Middle East and North Africa to the year 2100 (Bohmelt et al., 2014). These changes over time would drastically

increase the effects of already scarce water conditions. This situation highlights the need for regional coordination in the immediate future. However, Turkey, as the more prosperous riparian state amongst the three, has currently severed relations with Syria, due to the civil war in the last couple of years; and has present tensions with Iraq due to its implementation of public-works projects which is harvesting water through the use of 22 dams, which is stifling water supply in Iraq who is still trying to recover from recent years of conflict. Regional coordination, especially on the regulation of new dam construction and water withdrawals, will be more than necessary to prevent a potentially more serious environmental crisis in the future. Nevertheless, briefly assessing regional coordination in the recent past to see where shortcomings and loopholes may have occurred, could explain how we arrived at the current water dispute in the Euphrates-Tigris river basin.

The current transboundary water dispute in the Euphrates-Tigris river basin was originally a result of the emergence of large-scale water development projects initiated by the major riparian states-- Turkey, Syria, and Iraq-- in the early 1960s in competition with one another (Kibaroglu and Scheumann, 2013). The purpose of these dam projects was to control and allocate the waters of the two rivers, particularly at times of flooding and drought. At the national level, in each state, other interests for the water sources later included the generation of hydropower and the provision of water for irrigation and drinking purposes (Kibaroglu, 2011). However, at the transboundary level, national water development projects were implemented in an uncoordinated fashion and increased the pressure on the limited supply of water in the rivers. As the demand for water exceeded the supply, each of the national water authorities attempted to engage in dialogue and set up impromptu institutions for negotiations (Kibaroglu 2011).

The 2008 drought in Iraq sparked new negotiations between Iraq and Turkey over trans-boundary river flows. Although the drought affected Turkey, Syria, and Iran as well, Iraq complained regularly about reduced water flows. Iraq particularly complained

about the Euphrates River because of the large amount of dams on the river. Turkey agreed to increase the flow several times, beyond their means, in order to supply Iraq with extra water. Iraq experienced significant declines in water storage and crop yields because of the drought. To make matters worse, Iraq's water infrastructure has suffered from years of conflict and neglect.

Consequently, in 2008 and 2009, the governments of Turkey, Syria and Iraq embarked upon cooperative foreign policy initiatives. The political resolve expressed at the highest levels had reflected recent cooperative initiatives related to transboundary water development and management in the Euphrates and Tigris region. For instance, Turkey and Iraq signed the Joint Political Declaration on the Establishment of the High-Level Strategic Cooperation Council (HSCC) in July 2008 (Kibaroglu, 2014). On the other side, a similar bilateral HSCC was created between Turkey and Syria in December 2009. Broadening the scope of the bilateral accords to include sectors of socio-economic development, including water, and as well as fostering a situation of regional interdependence were in fact the main goals for the establishment of both the Turkish-Syrian and Turkish-Iraqi HSCCs. The strategic nature of the HSCCs resulted in a groundbreaking approach to transboundary water issues in the basin region, where water and diplomatic bureaucracies were devoted to drafting and signing a series of memoranda of understandings, MoUs, or water protocols, to addressing increasing problems associated with water development, management and use (Michel et al., 2012).

Among the forty eight MoU's, signed between Turkey and Iraq in October 2009, the most important one was on water. With that protocol, the two sides agreed to exchange hydrological and meteorological information as well as exchanging expertise in these fields. Both sides also emphasized the utilization and management of regional water resources in an efficient manner. A couple of months later, in December 2009 Turkey and Syria signed fifty MoUs at the first meeting of the HSCC in Damascus including four, which are related to regional waters, namely the Euphrates,

Tigris, and the Orontes rivers (Michel et al., 2012). For the MoU on the Tigris Waters in October 2009, Turkey and Syria signed the MoU on the Tigris in which Turkey agreed that Syria could have access to a specific amount of water from the Tigris annually, when the flow of water is within the average. The water withdrawals were to be arranged according to monthly water flows, and it is indicated that pumping will be done when the time and place allowed. This MoU enabled Syrian authorities to expand irrigation in northeastern Syria by pumping water from the Tigris River, which forms the boundary between Turkey and Syria and between Syria and Iraq. From the Turkish point of view, achieving an agreement with Syria about the use of the Tigris waters was real progress in terms of developing a regional understanding on transboundary waters which includes both Euphrates and Tigris waters.

In recent years, the fact that in Syria's neighboring countries, particularly southeast Turkey and northern Iraq, a long drought also occurred, but to a lesser extent, solicits the following question: why were the effects of the most recent drought so much graver for Syria? Syria was far more vulnerable to drought, given its heavier dependence on year-to-year rainfall and declining groundwater for agriculture. Water scarcity in Syria has always been far more severe than in Turkey or Iraq. Syria's total annual water withdrawal percentage of internal renewable water resources reached 160%, with Iraq at 80% and Turkey at around 20% in 2011 (Kelley et al. 2015). Furthermore, Turkey's geographic diversity and investment in the southeast region's irrigation allowed the country to better buffer itself against the drought, and similarly, the population in northwest Iraq was far less dependent on agriculture than their counterparts in northeast Syria (Kelley et al. 2012). Government agricultural policy is also among the many prominent factors that contributed to Syria's vulnerability to drought. For instance, despite the growing water scarcity and frequent droughts in the region, the government of President Hafez al-Assad (1971–2000) initiated policies to further increase agricultural production, including land redistribution and irrigation projects, quota systems, and subsidies for diesel fuel to garner the

support of rural constituents (Kibaroglu and Scheumann, 2011). These policies gravely threatened Syria's water security by exploiting limited land and water resources without regard for future sustainability.

One critical consequence of these unsustainable policies is the decline of groundwater. Nearly all rainfall in the Fertile Crescent occurs during the 6-month winter season, November through April (Yucel and Sen, 2014). In Syria, the rain falls along the country's Mediterranean Sea coast and in the north and northeast, the primary agricultural region. Farmers depend strongly on year-to-year rainfall, as two thirds of the cultivated land in Syria is rain fed, but the remainder relies upon irrigation and groundwater (De Chatel, 2014). For Syrian farms without access to irrigation canals linked to river offshoots, pumped groundwater contributes to more than half of all water used for their irrigation purposes, and this groundwater has become increasingly limited as extraction has been greatly overexploited. The government attempted to stem the rate of groundwater depletion by enacting a law in 2005 requiring a license to dig wells, but the legislation was not enforced (Yucel and Sen, 2014).

The reduced supply of groundwater dramatically increased Syria's vulnerability to drought. When the severe drought began in 2007, Syria's agricultural system collapsed, causing devastating circumstances for food security. Bashar al-Assad, who succeeded his father in 2000, liberalized the economy by cutting the fuel and food subsidies on which many Syrians had become dependent. These cuts continued despite the drought, and further destabilized the lives of those affected (Kelley et al, 2014). Consequentially, Syria's heavy year-to-year reliance on agricultural production left it unable to outlast a severe prolonged drought that occurred from 2007 to 2010; and unable to accommodate the mass migration of rural farming families to urban areas due to the drought. Whether it was substantial factor in the crisis in Syria is impossible to know, but the 2007-2010 drought led to devastating consequences for Syria, when coupled with the country's preexisting vulnerability, poor policies, and unsustainable land use and water allocation practices. Nevertheless, one factor

that is certain regarding the recent unrest in Syria is that the slow and negligent response of the Assad regime has undoubtedly perpetuated the immediate effects of the drought.

The biggest challenge that remains is how to facilitate water resources management and establish transboundary water cooperation in the midst of current state of affairs in the region. Major regional political problems, namely the Syrian civil war and the deterioration of bilateral political relations between any pair of the three riparian states, indicate a depleted political background for the implementation of efficient and reasonable water policy in the Euphrates-Tigris river basin. The ratification procedures and implementation of the recent (2009) bilateral MoUs could not be achieved mainly because of strained political relations that resulted shortly after.

However, even in the case of restoration of peace and stability in the region, there could still be the danger of inadequate implementation of the MoUs and misguided actions to implement projects and distribution of the water project benefits disproportionately. Moreover, there continues to be an enduring problem of the lack of coordination in transboundary water management in the Euphrates-Tigris basin, with that of the national water management for each riparian state. That is to say, lack of analysis of the national water policies and management for Turkey, Syria, and Iraq, at the meetings intended for joint regional cooperation, demonstrate the fact that the three riparian states have complex national water management systems, but their systems are institutionally and legally incompatible. Therefore, the successful implementation of water protocols and treaties would mainly depend upon the institutional capacity of the riparian states, as well as proper coordination of water policy.

In sum, with Syria experiencing violent internal unrest, and Iraq recovering from two decades of sanctions and war, water resource management capacities in both countries are considerably diminished. On the other hand, Turkey's water policy has been evolving since the early 1990s, which is shaping up to a more intricate legal and organizational framework, and demonstrating

partial progress in water resources protection and public participation in water policy-making process. The hope remains that the three riparian states in this region could eventually come to some amends

on how to capitalize on and emulate Turkey's water protection plans; especially in Syria, where drought and water scarcity consequences have become so devastating.

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## Tigers: An Endangered Species

*by Oluwagbemisola Adesanya*



**W**ild tigers (*Panthera tigris*) are in danger of extinction across their entire range. For centuries, these beautiful cats lounged at the top of the ecological pyramid in the Asian continent. At this time, however, there are only about 3,200 to 3,600 tigers in existence, with their population spread out among the 13 Asian Tiger Range Countries (TRCs): Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Russian Federation, Thailand, and Vietnam. From 1996 to 2006, their population and habitat have declined by 40 percent as a result of fragmentation, degradation, habitat loss, poaching of both tigers and their game, human tiger conflict, and illegal wildlife trade (Global Tiger Initiative Secretariat, 2011).

Tigers are not only on the brink of extinction, but so are their diverse, rich, and underrated ecosystems. Tiger Conservation Landscapes (TCLs) provide support to tigers, their prey, an extensive amount of biodiversity, and human well-being. Yes, believe it or not, tigers actually contribute to your well-being through their landscape's provision of ecosystem services such as, food security, provision of water, fuel and fiber, supply of medicinal plants, reduction of natural hazards like flood, drought, and storms, and the opportunities of community-based tourism. At present, tigers inhabit fragmented forest and grassland habitats that constitute a measly seven percent of their previous habitats (Global Tiger Initiative Secretariat, 2011). Three subspecies are already extinct and six other subspecies are highly vulnerable. Of these six, four are listed as

“endangered” on the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species, while the last two have already been labeled “critically endangered”. The remaining subspecies are Bengal, Indochinese, Malayan, Siberian, South China, and Sumatran (Kasnoff, 2016).

#### Why are tigers on the brink of extinction?

In order tigers to survive in the wild, they access to water, prey, and vegetation in which to hide. The more forests, jungles, long grasses, and mountains disappear, the more tigers will equally disappear. For decades, tigers have lost more and more of their habitats to human settlements, new roads, agricultural expansion, industrial expansion, timber cutting, and projects such as the construction of hydroelectric dams, etc. It is not enough that humans are settling and displacing tigers, but these settlements mostly consist of an increasing poor human populations, and a rapidly growing number of illegal hunters and poachers (Kasnoff, 2016). Humans love to be very mobile, and need to drive everywhere, including into the wilderness. However, the construction of roads and transport systems around tiger habitats takes away their freedom to roam, and this is critical to their survival as endangered species. Tiger range countries are not willing to bear the costs of smart road systems that will have underpasses and take the habitats of tigers into consideration (Yadav, 2014).

The explosive population growth rate in Asia requires more and more land to be converted for agricultural use. For instance, in a country like Indonesia, which has an estimated 261 million population and a 1,904,569 km<sup>2</sup> land area, a large share of the lowland forest have been cleared to allow for the cultivation of rice. Palm oil, which is now in high demand, and is used for food, cosmetics, bath product and biofuels, is one of the largest contributing factors to deforestation, which in turn leads to the loss of tiger habitats. Indonesia, Malaysia, and Thailand are the top 3 palm oil producers in the world, and a 2014 study reveals that Malayan tigers now number a mere 250-340 (Paterson, 2014). Another crucial example is China. China's population, which is the largest in the world has more than doubled during the course of the last

40 years. The impact of this on tigers' habitats is painstakingly clear in light of the fact that 99 percent of China's original forests are no more (Kasnoff, 2016).

In a desperate bid to protect tigers from the illegal activities of poachers, wildlife conservationists have collaborated with governments to create wildlife reserves. These reserves are large protected areas ranging from Indonesia's Kerinci Seblat at 14,846 km<sup>2</sup> and China's Xioaling at 21 km<sup>2</sup>, where tigers can roam freely and hunt prey. The reserves are, however, not without their own challenges, which a key factor in the debate on their level of effectiveness. For one, many of these wildlife reserves are isolated islands, making it difficult for tigers to find mates, therefore encouraging in-breeding. It is imperative to mention that these “protected areas” are immensely difficult to actually protect because departments concerned with forestry and wildlife are too under-budgeted and understaffed to protect tigers from the force and strength of poachers. This is not all, the workers are inadequately compensated considering the highly risky nature of their jobs, they lack motivation, training, organization, recognition, essential resources like communication equipment, vehicles and firearms, and a weak power of enforcement of anti-poaching laws (Kasnoff, 2016).

In spite of all this, the single greatest threat of tigers and much of the Asian wildlife is the huge demand for traditional medicine. This is particularly interesting when one thinks about the fact that this is the 21st century, the rapid level of globalization sweeping through the world, and the increasingly industrialized nature of Asian countries. On a yearly basis, the consumption of traditional medicines made from tiger bones, the gallbladder of bears, the horns of a rhinoceros, and a host of other animal parts is massive. An estimated 60 percent of China's 1.3 plus billion population uses this form of traditional remedy. The buoyant economies and personal incomes of Southeast Asia have done nothing but cause both the demand and prices to rise, and the international trade in wildlife products is estimated to be \$6 billion annually (Kasnoff, 2016). The demand for tiger body parts is relentless. There are people who are enthusiasts of

rugs made from tiger skins; you will not believe how many traditional medicine consumers there are, who believe that tiger bones are better than Viagra; or those who drink tiger wine because it is “exotic” (Yadav, 2014).

### International Responses

The conservation of tigers is the global responsibility primarily assigned to 13 sovereign states where tigers reside, also known as the Tiger Range Countries (TRCs). In June 2008, as a form of support to the TRCs in tackling with the global biodiversity crisis and with a vision to emphasize tigers as the face of biodiversity, the World Bank, the Global Environmental Facility, the Smithsonian Institution, and other significant partners initiated the Global Tiger Initiative (GTI). Since then, the GTI has evolved into a partnership of governments, including the 13 TRCs, international organizations, and the civil society, managed by a secretariat accommodated by the World Bank. In a bid to achieve real progress, all parties involved convened in January 2010 at the First Asian Ministerial Conference on Tiger Conservation in Thailand, where the Hua Hin Declaration encouraged the international community to support TRCs, and obligated TRCs to increase and accelerate their priority national activities. The Declaration also set the goal of doubling tiger population by 2022, which is the next Year of the Tiger (the tiger is the third in the 12-year cycle of animals on the Chinese calendar), and authorized the plan for an International Tiger Forum (Global Tiger Initiative Secretariat, 2011).

At an unprecedented International Tiger Forum, which took place in November 2010 in St. Petersburg, Russia, the leaders of the 13 TRCs convened to address the problem of the extinction of wild tigers. The outcome of this Summit was the adoption of the St. Petersburg Declaration on Tiger Conservation and its implementation mechanism, the Global Tiger Recovery Program (GTRP). The main goal of the Declaration and the GTRP is to double the number of wild tigers on a global scale from an estimated 3,200 to 7,000 by 2022. This was the first Summit to be ever dedicated to an endangered species and it represents an important landmark in tiger conservation and a larger extent,

biodiversity conservation (Global Tiger Initiative Secretariat, 2012)

The GTRP is aimed at empowering TRCs to deal with the complete range of threats to tigers, whether domestic or transboundary in nature. To achieve its goal of doubling the current population of tigers by 2022, the GTRP was established to: (i) efficiently maintain, manage, protect, and advance tiger habitats; (ii) eliminate the poaching, smuggling, and illegal trade of tigers, their body parts, and byproducts; (iii) promote cooperation in transboundary issues or illegal trade and landscape management; (iv) enhance the effectiveness of tiger and habitat management; (v) restore tigers to their former range (Global Tiger Initiative Secretariat, 2011).

The International Consortium for Combating Wildlife Crime (ICWC) was launched at the International Tiger Forum in order to unify the efforts of CITES, INTERPOL, the World Customs Organization, United Nations Office on Drugs and Crime, and the World Bank to provide capacity building and support for national wildlife law enforcement; reduce trafficking in wildlife and their parts and products; and encourage transboundary cooperation (Global Tiger Initiative Secretariat, 2012)

A powerful system of law enforcement monitoring (LEM) in protected areas is the projected best practice to curb wildlife crime. Many TRCs, including India, Indonesia, Cambodia, Thailand, Laos, Nepal, Vietnam, Malaysia, and Myanmar have begun the implementation of such a system. India established, trained, and equipped several Special Tiger Protection Forces, and Indonesia and Cambodia expanded their informant networks to reduce poaching. Another effective practice is interagency cooperation to combat poaching and illegal trade. An example of this can be found in Nepal, where strengthening its central Wildlife Crime Control Bureau and creating Wildlife Crime Control Units (WCCU) resulted in zero rhino poaching in 2011. There have also been efforts to reduce demand and consumption of tigers and their derivatives. Vietnam and Cambodia worked to raise awareness of the illegality of wildlife crime, and Myanmar established bush-meat free markets in

one landscape. Regionally, unifying Pakistan, Bangladesh, Sri Lanka, Bhutan, India, Nepal, and Maldives, the South Asia Wildlife Enforcement Network (SAWEN) was launched to contribute to efforts aimed at addressing wildlife crime (Global Tiger Initiative Secretariat, 2012).

By 2012, all the TRCs reported progress in their efforts to conserve tiger habitats, albeit with differences in the intensity and scope of their efforts. Indonesia expanded tiger protection to the Berbak-Sembilang landscape and proposed the establishment of a tiger sanctuary in Riau Province. In 2010, Nepal created a new protected area and constructed ponds in dry areas to facilitate steady water supply. China drafted a regional plan for tiger conservation in strategic tiger range provinces, it also set up plans for relocating forest industries, their staff and families, and an extensive system of recovery of farmlands to be converted to forests in tiger range regions. India launched two new tiger reserves totaling 2,594 km<sup>2</sup>, initiated a 5% increase in tiger habitat under protection, with five more tiger reserves under establishment and another six proposed. India also completed measures to improve water availability (Global Tiger Initiative Secretariat, 2012).

### How Can You Help?

There are more ways you can contribute to the global movement to save tigers. Now that you are aware of the precarious fate of tigers, it is incumbent that you educate the public, whether or not they use tiger parts and products (Henn, 2015). Many people are oblivious to the risk of extinction faced by tigers and there are many mediums one can employ to spread the word. A social networking site like Facebook or Twitter, even by word-of-mouth to friends, family, and colleagues. In addition to spreading awareness, you can actively participate in tiger conservation by supporting the numerous organizations working hard to protect the tigers (Henn, 2015; Paterson, 2014). Some organizations that you can support are the World Wildlife Fund (WWF), Big Cat Rescue, Panthera, and Save Tigers Now. If you can do nothing else, the most important thing is to stay informed. Many tiger conservation websites have online newsletters that you can subscribe to in order to receive updates from all over the world. It is important to keep tigers alive and they should not be something to be seen only in the museum like dinosaurs by future generations (Paterson, 2014).

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JUST LIKE YOU, I AM A LIVING BEING. I HURT, I BLEED, AND I FEEL PAIN. I AM **NOT** A RUG AND YOU SHOULD **NOT** WALK ON ME.

## Indonesia's Challenges with Palm Oil Production

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*Edited by* Britteney Laurenceau



**P**alm oil is ubiquitous in today's global marketplace. Body soaps, chocolate bars, skin moisturizers, toothpaste, peanut butter, dietary supplements, sunscreen, and cosmetic products make up a modest list of everyday products that contain palm oil. It is an essential ingredient in thousands of everyday products. It is used to fry fast food, and fuel cars and trucks in many places around the world. Unfortunately, current palm oil production methods contribute to the destruction of most of the world's carbon-rich tropical forests and peatlands, and is also a major contributor to the global problem of climate change. Nevertheless, it appears that growth in palm oil production is likely to continue in the foreseeable future, primarily

because of its high yield and relatively low labor costs, making palm oil the cheapest and most accessible vegetable oil on the market today.

Around 85 percent of the world's palm oil is produced in Indonesia and Malaysia. The tropical forests destruction, which is a direct result of the high demand for palm oil, is extremely detrimental to forest ecosystems. When tropical forests are cut down to make way for palm oil plantations, carbon is subsequently released into the atmosphere as carbon dioxide, contributing to the (already) high levels of greenhouse gases that are currently in the Earth's atmosphere. Tropical deforestation accounts for about 10 percent of total greenhouse gas emissions. Indonesia is the biggest palm oil

producing country, and as of 2015 was the world's third highest emitter of greenhouse gases. Deforestation in Indonesia, due mostly to palm oil plantations, made up around 30 percent of these emissions this past year. Nevertheless, Indonesia has already announced plans to double its palm oil production by 2020. Both Indonesia and Malaysia aim to commit millions of metric tons of palm oil to producing biofuels. While the use of fuels made from vegetable oils is growing very quickly as an alternative to fossil fuels, a number of countries, including the United States, have limited or omitted palm oil-based biofuels because of environmental concerns.

This paper aims to provide insight on how countries in the developing world are undertaking the daunting task of reconciling their accountability to international efforts of environmental sustainability and reversing climate change, with their national goals of economic development. The case of Indonesia and its palm oil industry reveals the negotiation that happens at the national level between the long term benefits of environmental sustainability, and the shorter term benefits of economic development. Therefore, Indonesia has been working on ways to implement environmentally sustainable practices of palm oil production. The palm oil industry targeted by transnational campaigns that criticize unsustainable production practices and point to serious environmental and social conflicts caused by the expansive plantations. Civil society organizations are criticizing the loss of biodiversity and deforestation in the tropical rain forest of the producing countries. The rapid and massive expansion of oil palm makes it hard to avoid significant impacts on remaining ecosystems, including the endangered habitats of rare and threatened species like the Orangutan, Sumatran tiger and the indigenous elephant.

The Roundtable on Sustainable Palm Oil (RSPO), a not-for-profit that unites stakeholders from all sectors of the palm oil industry; processors, traders, plantation owners, retailers, environmental and social nongovernmental organizations, was established in 2004, in order to develop and implement global standards for sustainable palm

oil. The RSPO established voluntary protections that some companies along the palm oil supply chain, from growers to consumer brands, have adopted. Although the RSPO guidelines still allow for forests to be cleared and peat soils to be drained in order to plant oil palm, the organization has promoted that transparency of its all palm oil practices be reported by its members. This action was included in the RSPO code of conduct drafted in 2006, in Jakarta, Indonesia. Leveraging power through the use of campaigns against unsustainable palm oil production, has led many multinationals to make a pledge to source their palm oil from sustainable producers, commit to deforestation. For instance, one of the world's largest palm oil trader, Singapore-based Wilmar International, announced last year that it would stop working with suppliers that deforested virgin forests, drained peatlands, or displaced local communities. In 2010, the Consumer Goods Forum (CGF), and its members committed to zero net deforestation by 2020. This was followed by individual and collective pledges, notably the Sustainable Palm Oil Manifesto (SPOM), the Indonesia Palm Oil Pledge (IPOP), and the New York Declaration on Forests in 2014. As of December 2015, Supply Change, another manufacturer conglomerate, estimated that 188 companies had made commitments to support sustainable supply in the palm oil sector, 61 of which included commitments to zero deforestation. These pledges to purchase sustainably and commit to zero net deforestation have been embraced by many processors and traders, but have yet to be fully understood and embraced by their third-party suppliers, including smallholders (Pacheco, 2016).

Despite these ambitious moves to adhere to environmental sustainability, we cannot disregard that palm oil demand is predicted to double by 2030. Although major companies have committed themselves to the national law and the regulations of the Roundtable on Sustainable Palm Oil (RSPO), the use of fire for land clearing is still widely reported. The UN's Environmental Program (UNEP) portends that a massive amount of Indonesia's rainforests could be destroyed by 2022 due to palm oil production (Oakford, 2014). The problem is not simply deforestation, but the way

that deforestation is taking place. In Indonesia, forests are often cleared out by setting fires, which unfortunately can be done legally with a permit. There are also cases where deforestation is often carried out illegally, when local loggers give bribes local forest communities to allow them to cut down forest wood or burn down forest lands for agricultural purpose. Indonesia, as a result of the mass deforestation, is in the middle of a public health crisis from forest fire haze. The greenhouse gas contribution from those fires has been a major cause for global concern about Indonesia's consciousness of its carbon emissions. At times, last year, emissions from Indonesian forest fires exceeded all emissions from the U.S., which is the second highest emitter of greenhouse gases, behind China. (McDonnell, 2015).

The International Monetary Fund, or IMF has also had an indirect role on increasing Indonesia's palm oil industry and environmental issues. The IMF had set a course for economic recovery in the 1980s that required Indonesia to sell off state assets and generate revenue by exploiting natural resources. Forestry policy reform was included as one of the conditionalities for IMF loans. In the late 1990s, the IMF insisted on the removal of "export quotas and punitive taxes" on Indonesian palm oil exports as a condition of its economic rescue package. The move by the IMF, only strengthened the economic incentive for the Indonesian government to expand the production of palm oil and the area of plantations (Glastra, 2002).

The Indonesian government is currently balancing pressures between its economic sector and the international community to remedy the issues palm oil with production. The government is pursuing two parallel agendas, each with implications for both forest conservation and palm oil development. It has put in place policies to protect primary forests and peatlands, while also promoting palm oil production and seeking to make it sustainable. The Yudhoyono administration (2005–2014) implemented several policies to protect primary forests and peatlands, the most important of which was the Presidential moratorium on the issuance on new plantation licenses on forest and peatland. However, in July 2015, the Indonesian government

launched the Crude Palm Oil (CPO) fund, built on a duty from palm oil exports. The fund is to be used mostly for biodiesel subsidies, as well as to complement activities that support the development of sustainable palm oil plantations, expand the processing industry, and build capacity among smallholders. This dichotomy makes sustainable development and deforestation very difficult to accomplish at a national and international level (Pacheco, 2016).

Furthermore, the Indonesian government had recently decided to dissolve the country's REDD+ Agency. REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation and it is a global initiative designed to pay groups or countries for protecting their forests and reducing emissions of greenhouse gas pollutants, especially CO<sub>2</sub>. Its primary goals are to reduce net emissions on a global scale. In Indonesia, the REDD+ Agency will now become part of the Ministry of Environment and Forestry. The dissolution of Indonesia's REDD+ agency, will make transparency more difficult to achieve, and thus allow the government to pursue more deforestation for its economic gain (Lang, 2015).

The problem of palm oil production in Indonesia and many other tropical forests is two-fold; it leads to deforestation, and it increases amounts of greenhouse gas pollution. Palm oil is considered a cash crop not only in Indonesia, but also for many other tropical countries. Efforts to limit palm oil production or monitor its production practices in many instances, is viewed as an attempt to stifle a developing nation's economic development. These sovereign governments wish to exploit their lucrative natural resource (palm oil) as much as they can, and given the high demand for vegetable oils, it is in their economic interests to do so. The political friction exists, as it does in most developing nations, like Indonesia, between the international standards for environmental sustainability, and the national goals of economic development. Deciding which to prioritize or how to balance between the two, as Indonesia is seeking to do in the case of maintaining their palm oil industry while curtailing deforestation, is a daunting decision to make.

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## Field Research on Peru's Andean Extraction

*by George Ygarza*



In late March, I traveled to the land once known as Tawantinsuyu. With a generous travel stipend from the Tow scholarship of Brooklyn College, I spent over three weeks in this Andean region of Peru and greatly enhanced my academic work through field research. Originally apprehensive about traveling abroad in my final semester while working on completing my thesis, I quickly realized I had made the right decision. The trip has been beneficial not only to the completion of my thesis, but also for my goals that lay ahead.

My trip began by reaching out to various groups abroad, which I had gotten to know through my participation in a delegation to the People's Summit in Lima, which was an alternative to the COP20, the Conference of the government Parties to the UN Framework on Climate Change, which was held in 2014 in Peru's capital of Lima. Under the guidance of my department chair, Mark Ungar, I was able to develop an itinerary that considered many social and political dynamics I would expect

on the trip. The department was very helpful and amicable in responding to all of my inquiries and pointing me to the resources and contacts I needed to make this a successful trip.

My project was centered on the struggles that emerge from the periphery of the Peruvian state against mining and extractivism, which is the economic dependence that many countries have on ecologically destructive mineral extraction. The focus was to understand how indigenous youth, women, campesinos and other marginalized groups challenged the state and redefined citizenship in 21st century Peru with struggles for land, water and dignity. With nearly a quarter of its land under mining concessions, Peru was a good case study to research how forces from below confronted the realities of a neoliberal hegemony.

The trip was timed to engage in research against the backdrop of the electoral campaigns for president and congress. This provided a unique

opportunity to observe how the state and society interacted and what forces prevailed in this convoluted matrix that is the modern state. Very little has been written about the domestic politics of Peru over the past decade compared to other countries in the region. A large share of the reports and analysis on the Latin American region have primarily focused on the progressive epoch it has gone through. Only a few states - Peru included - have remained stewards of the older neoliberal order; for this reason, international political conversations have ignored Peru. Yet, while macro politics may have gone on as usual, the internal dynamics of power and social relations faced constant challenges. With this trip, I hoped to highlight the actions in the grassroots and in the periphery of the neoliberal hegemony of underdevelopment, providing new contributions to understanding local actors in Peru and their roles in challenging existing power structures.

Such challenges were central this year during Peru's tense Presidential campaign. Such tensions were rooted in an ideological struggle for the administration of the country, extending from the lowest to the highest rungs of society. The leading candidate was Keiko Fujimori, daughter of Alberto Fujimori, President from 1990–2000, much of that time ruling as an authoritarian. Under his rule, the progressive left was decimated. Dissidents were branded as terrorists and silenced through defamation, marginalization, or disappearances. Far from being frozen in the past, though, the Peruvian left was kept alive in the periphery as clandestine student groups, indigenous people, and women continued to organize. Following Fujimori's downfall in 2000, these groups took to the streets again. One of the first post-Fujimori organizations to emerge was the National Federation of Female Peasants, Artisans, Indigenous, Natives, and Salaried Workers of Peru (FENMUCARINAP). This national organization is now active in nearly all of the country's regions, with over 126,000 members who fight and defend women in Peru, connecting struggles across elements of subsistence, such as land and food.

Given the fact that Fujimori ordered the sterilizations of over 300,000 women, I wanted to

hear from the sisters and daughters of those who were not sterilized. With the complex and ridiculous Peruvian elections dominating the headlines, I decided to reach out to this women's organization in order to get a perspective and analysis of Peruvian society from the grassroots.

On April 7, just days before the first round of the general elections, I spent the afternoon with Lourdes Huana Atencio, an indigenous leader from southern Peru who is president of FENMUCARINAP. Our conversation spanned topics from the oppressive institutions that women in Peru face, to what the general elections meant for marginalized groups. Her inspiring and powerful words instilled in me a renewed sense of commitment and solidarity with the struggles in the country. Upon my return to the United States, I translated and transcribed our interview, which was picked up by a few outlets, including UpsidedownWorld and NACLA.

Throughout the trip, I was able to interact with people both within and outside social movements; leaders and organizers on the ground that have recently been responsible for the country's large youth mobilization. These movements and social phenomena are the pilots of new epochs and eras.

Traveling abroad and immersing in my research firsthand gave me a perspective I would have never found confined to the libraries or classroom. This invaluable experience has benefited not only my academic work, but also my development as a conscious individual and social activist. Because of this valuable experience, I strongly encourage other students to apply for the Tow travel fellowship in future years. It is imperative that young scholars take advantage of the resources available in their institutions. It is particularly important that people of color take up these opportunities, which are seldom available for us, especially in the academia, and empower ourselves as we uplift our work and contributions in various fields.

After completing my master's degree, I will continue on to a PhD program in Global Studies where I will further my research on social movements through a post-colonial and subaltern lens. In particular, I have been interested in non-western philosophies

and subjectivities that challenge dominant structures. I believe that this trip has prepared me immensely for the rigors and demands of a PhD program. The Global Studies discipline emphasizes research abroad and a global perspective. The research I was able to conduct on this trip as well as the networking I engaged in has given me a great foundation on which to build my academic career.

