



## Nigeria: Energy Infrastructure Firestorm

Posted by [jeffvail](#) on March 11, 2007 - 11:10am

Topic: [Supply/Production](#)

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When a fire becomes sufficiently intense, its heat creates a rising column of air so strong that surrounding air is drawn into the void, creating a draft that sustains and intensifies the fire. It becomes a self-sustaining, self-intensifying organism: a firestorm. The violence in Nigeria's delta region has become a firestorm, and the consequences of this transformation will fundamentally impact that nation's ability to export oil. Recent events in the delta region have transitioned the violence there from a negative-feedback loop where there was a disincentive to militants to shut in too high a portion of Nigeria's oil exports to a positive-feedback loop where militants will compete to completely destroy Nigeria's capacity to export oil.



*Figure 1: Nigerian Militants in a Speedboat*

## MEND & the Ijaw Insurgency: A Negative-Feedback Loop

A little background: Nigeria is a construct of post-colonial cartography. It is one of history's foremost examples of the [fiction of the Nation-State](#), a forced amalgamation of over 250 distinct ethnic groups and numerous religions (see illustration) to effect efficient British control of the region. In the post-colonial era, three dominant ethnic groups, the Hausa-Fulani, Igbo, and Yoruba, continue to joust for control of Nigeria's huge oil revenues—and for control of Nigeria itself, though this is truly and ancillary concern to the oil. One thing has remained constant: the ethnic Ijaw, who inconveniently live where all the oil is, have been almost entirely excluded from sharing in the oil riches in their own backyard. As a result, the Ijaw resorted to violence to advance their political aims of representation in Nigeria's government and a real share in the oil revenues.

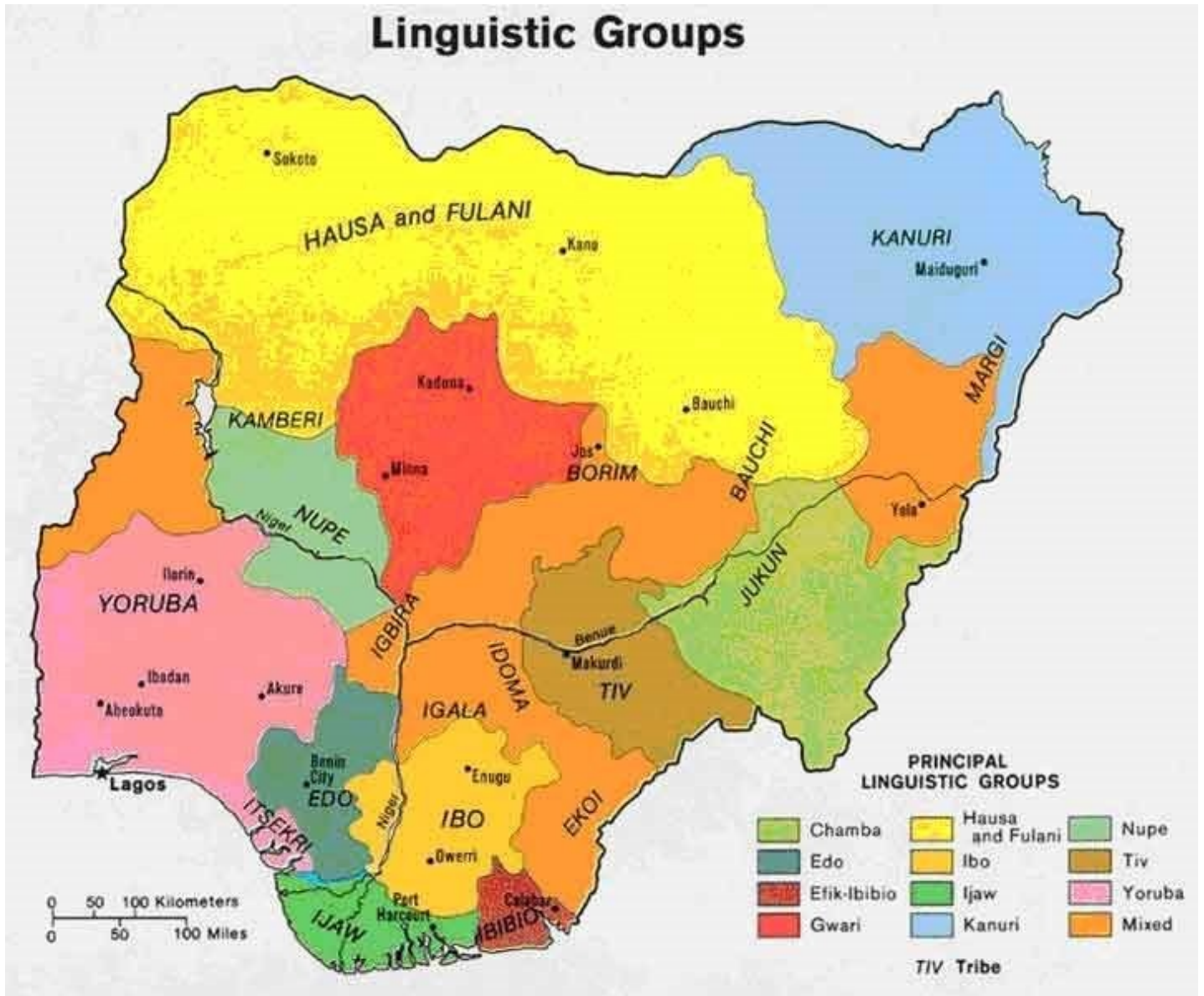


Figure 2: Overview of Nigerian Ethnic Groups

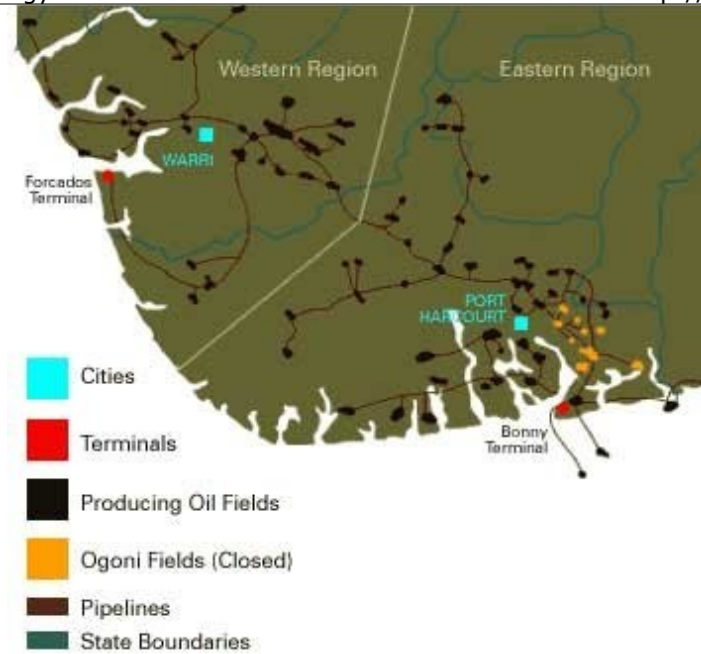


Figure 3: Overview of Nigerian Oil Infrastructure

MEND, the Movement for the Emancipation of the Niger Delta, was the military branch of the Ijaw struggle. It was relatively easy for the government of Nigeria to reign in the violence in the Niger delta for two reasons: MEND had clearly defined political motivations, and a long-term interest in the viability of Nigeria as an oil exporting state. Further, as a coherent tribal society, the traditional system of tribal relations and leadership exerted effective control over the actions of MEND. Because the motivations of the Ijaw power structure were clearly defined (setting up transparent game rules), the Nigerian government and foreign oil companies operating in the Delta had two effective tools to reign in violence when it threatened their profits: offer talks on political issues, or buy peace with aid and development projects. The situation was violent yet stable—the slow diplomatic dance between parties with predictable motivations acted as a negative feedback loop preventing the violence from escalating out of control.

## Free-Market Insurgency: A Positive-Feedback Loop

Over the past year this relatively stable system has rapidly broken down, and the result is the likelihood of a runaway escalation in violence. MEND fractioned amidst infighting among Ijaw tribal alliances. Various factions, with various political agendas, neutralized the ability to push for peace through negotiations—there was no single party, nor accession to a single set of demands, that could defuse the motivation to violence. In addition, the ransom money that foreign oil companies now routinely paid for the return of western employees spawned a market for [guerrilla entrepreneurs](#)—actors who were less motivated by traditional Ijaw political goals than by a return on investment. The lure of easy money has led to a proliferation of militant groups (now perhaps best characterized as criminal gangs) and a dramatic increase in attacks. This infusion of easy money to youthful militants broke down the traditional tribal structure of respect for leadership by elders—much as the infusion of easy drug money makes urban street gangs in the US less accountable to traditional cultural and familial restraints.



*Figure 4: Grim Economic Reality Pushes Ijaw Youth to Crime*

Finally, because of the shift from a political motivation to a profit motivation, militants are no longer invested in preserving the long-term viability of Nigeria as an oil exporter. As a result, the targeting strategy has shifted from the temporary sabotage of infrastructure for political ends to threats of permanent destruction of key infrastructure nodes—targets that can force higher protection payments and therefore higher returns on investment. All three of these factors are contributing to the rapid tipping of the violence in Nigeria’s delta from a stable, negative-feedback system to an escalating, positive-feedback system.



*Figure 5: Heavily Armed Youth Gangs in Speedboats Rally in Permissive Terrain*

## Ramifications

The escalating violence in Nigeria has two important ramifications:

First, the tip from stable violence to perpetual escalation of violence represents a sea change in the level of disruption to Nigeria’s oil exports. The controlled Ijaw violence under a unified MEND had a strong disincentive to either shut-in excessive portions of Nigeria’s oil exports or to inflict long-term damage on that export capability. The new entrepreneurial violence is comprised of

multiple actors, each competing to extort money from a limited target list of oil installations, foreign workers, and foreign oil companies. Because the actors are now militant youths seeking short-term financial gain, rather than careful elders seeking long-term political concessions, there is a strong market incentive to fill the available market space—in other words, to escalate kidnappings and infrastructure attacks until all Nigerian production is shut in. Admittedly, these militants will face diminishing marginal returns as the level of Nigeria production approaches 100%. But for the disaffected youths of the Niger delta, living amidst broken tribal structures, ballooning populations, and the environmental devastation of the local oil industry, a very small marginal return on investment in violence is still the best economic prospect available.



*Figure 6: A Hostage Surrounded by Ijaw Militants*

Second, this transition from ideologically motivated violence to financially motivated violence portends problems for energy infrastructure throughout the world. As peak oil exacerbates already tight global energy markets, record energy prices will allow energy firms everywhere to accept the kind of ransoms and payoffs that are fuelling the escalation of violence in Nigeria's delta region. There is good reason to believe that today's sectarian or ideologically driven violence in Iraq and elsewhere may transition to financially motivated attacks on energy infrastructure. This transition will be accompanied by the same critical change observed in Nigeria: there will no longer be the motivation to keep the majority of production on-line, or to prevent long-term damage to production capacity. Instead, as long as marginal returns on investments in energy infrastructure attacks remain positive, there will be a strong incentive to escalate these attacks no matter how completely a region's export capacity is destroyed. If one accepts the proposition that peak oil will lead to global economic hardships, then this incentive will be further increased. The ability to pay "protection" for oil infrastructure is a direct function of the profitability of producing oil, and as such the peaking of world oil production—to the extent that it increases prices faster than production costs—will perpetually increase the incentive to attack energy infrastructure targets.



*Figure 7: Hyperspectral Satellite Image of Oil Installation in Nigeria—Note dense jungle in close proximity to facility perimeter, a result of economics-driven design.*

Finally, it is worth considering that energy infrastructure was designed to optimize economic performance, not security and defensibility. Economic considerations force an infrastructure design methodology consisting of largely centralized structures with multiple single points of failure, and networks vulnerable to cascading failures. As a result, even in oil producing states with functional security services, there is a high vulnerability to financially motivated infrastructure attacks. While a Nigerian scenario may seem unthinkable in the United States, consider our nation's success in interdicting the drug trade. The market for energy is significantly larger than the market for drugs—and so is the incentive to militants to conduct financially motivated attacks on energy infrastructure. If this analysis is correct, the increasing incentives to attack energy infrastructure will become yet another factor accelerating the rate of decline of global energy production.

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