



Photo: Brian Perkins

OIL, ENVIRONMENT AND DEVELOPMENT IN NIGERIA

AN INTERVIEW WITH
PROFESSOR OBIOMA UCHE

ANGELA ODAH, RLS PROGRAMME MANAGER

RLS: Petroleum is the mainstay of Nigeria's economy. As a Professor of Petroleum Chemistry, what do you think are the factors responsible for Nigeria's inability to process crude oil locally?

Corruption and mismanagement are rife in the oil sector. It's a very serious situation as we certainly do not maintain our existing refineries. I believe that in terms of efficiency and capacity utilisation, Nigeria's refineries rank at the bottom of all those in Africa, which is ridiculous when you think of our status as the big oil producer on the continent.

A recent audit report showed the government spent almost \$1.5 billion on turning around and maintaining refineries but we still don't have a functioning refinery on the ground.

We usually take field trips to Kaduna Refining and Petrochemical Company (KRPC), apart from having many students who complete their internship at KRPC at the Kaduna refinery. The standard response when they return is, "Yes I was there but for the most part the refinery was not in operation".

So it's an ongoing problem that money is budgeted for the maintenance of these refineries but there are clearly no results.

Another factor that contributes to our inability to process crude oil locally is our inability to build new ones. We have not built a single refinery in the last 20-30 years. Licenses are issued but, due to corruption in the sector, the people who get these

licenses may not have the capacity or ability to actually operate them.

The good news is that the Dangote Group was given a refinery and has certainly been able to employ people that have the necessary knowledge and ability. I believe the refinery is expected to come online within the next year. Despite this positive news, when you consider that Nigeria produces 2 million barrels per day and Dangote refinery has a capacity to produce 650 barrels per day, you realise there is quite a gap.

RLS: There is a school of thought that suggests that renovating our refineries is not wise due to the huge financial investment involved and rampant corruption in the oil sector. Do you agree with this view?

I certainly don't agree. It's definitely a capital intensive process trying to renovate refineries or build ones but is a worthwhile venture. One of the reasons for this is that if we are able to get local refineries fully operational we will be able to limit corruption in the sector. The major source of corruption is due to the subsidy scheme, a consequence of importing crude oil products. Producing petroleum products locally would mean we wouldn't be reliant on importers and their inflated or padded numbers.

RLS: The various militant groups in the Niger Delta area threatening to attack oil installations is a danger to national security and oil revenue, which Nigeria's economy depends upon. What do you think can be done by government and other stakeholders to promote sustainable peace in the region?

That's a rather difficult question because depending on who you ask and where they are from, there are different answers.

The majority of people in the Niger Delta want resource control. Being a civilian in the region, it's a big ask from government because as part of the country as a whole, you share the rewards and the losses.

I think the way forward would not be resource control but rather an upward review of the percentage of profit derived by the producing states. Currently they get 13%, but Niger Deltans recall when oil was first commercially produced and they derived 100%. That was possible in the past because all the other sectors were producing some sort of natural resource and were major players in the global economy.

Unfortunately for Nigeria we have a situation where we have become an oil producing economy to the detriment of all other sectors. Even though 100% benefit for the oil producing states is currently impossible, there could be an upward review of the constitutionally guaranteed 13% they currently get. Over the last 20 years, even though the constitutional requirement is 13%, the oil producing states probably get a little more than that because there have been Commissions such as the Niger Delta Development Commission affecting the percentage. But clearly it is still not enough to compensate the Niger Delta for the environmental damage they have unfortunately been exposed to due to oil production.

Apart from this upward review of the percentage that accrues to the oil producing states, another avenue would be the establishment of local commissions that ensure funds are actually channelled into regional development. Here again, corruption plays a role because while money could be ring-fenced for oil producing states, will it actually filter through to community level for regional development?

You see newspaper articles about former warlords in the Niger Delta living affluent lives and you wonder whether the money they use to fly their private jets or live in their mansions, could have been used to improve the lives of thousands of people in their communities.

Tying this to your question about Nigeria's inability to process crude oil, I'm sure you are aware that there are many illegal refineries in the Niger Delta. Another thing the Nigerian government could do is, instead of destroying them, rather regulate the industry.

The Nigerian government does have a point that the quality of products the illegal refineries produce is not as high as it should be. This naturally could translate into environmental pollution associated with sub-standard production of crude oil and government revenue losses. However, I think if correctly regulated, it could deliver higher local production of crude oil and employment and resources to people in that region. According to an old proverb, *necessity is the mother of invention*, investigating methods being used in illegal refineries in the Niger Delta, might reveal some innovative techniques that Nigeria could contribute to the world. By regulating the industry the government could promote sustainable peace in the region.

RLS: What are the benefits of processing crude oil locally?

Processing crude oil locally will create more employment opportunities. I'm an instructor and I usually teach 300-400 level courses. I know how difficult the job market is for students once they leave and it's a very frightening time for them when they realise: "I need to stand on my own two feet, I need to be able to get a job", we know how difficult this is in Nigeria today.

Part of the reason for this is an over reliance on the oil sector. About 30-40 years ago when our dependence on the resource was not as great as it is today, there was greater emphasis on the agricultural sector and the good thing about this sector is that it produces jobs so people can support themselves.

With an economy heavily reliant on oil, jobs are scarce because you need skilled professionals. Creating job opportunities for youths is essential as is promoting some of the indigenous techniques being used in the illegal refineries.

Reducing disruptions we have due to fuel shortages is another must. I saw a headline a few days ago where no filling stations in Lekki were selling PMS and the buzz was that this was a result of suppliers hoarding products because they expected a price increase. They expected a price increase because they believed the government was going to have to allow the marketers to sell at a higher rate in order to achieve the subsidy scheme increase. So if we have a situation where we are producing locally we wouldn't have to rely on these marketers. By doing this we will create a situation where disruptions, that occur pretty much every year, are significantly reduced.

Crude oil could be distilled to produce a number of products. In Nigeria we primarily focus on PMS and diesel but you can also get by-products such as jet fuel and bitumen used as a binder in road construction. In a developing country such as ours we need road infrastructure, particularly in cities outside Abuja and Lagos. So if we were refining our crude oil locally we could produce these by-products.

Admittedly Nigerian crude oil is lighter than some of the other global crude grades so we are not going to get as many of the heavier fractions as we would refining crude oil from other countries. But

we have dealt with this before, for example at KRPC, there are actually two towers that carry out distillation. The one processing Nigerian crude oil produces greater quantities of the lighter products. The other refines imported heavier crude so you get heavier stuff. So even if our own crude oil does not generate as much of the heavier products as we would like, we can still import crude oil of heavier grade. It's certainly going to be cheaper to produce locally than to import.

RLS: There are very few women in science in Nigeria and Africa in general. What spurred your interest in petrochemistry and how can science be made attractive to young girls as a career choice?

I was not as concerned about the gender issue as my father was. I liked chemistry, maths and physics but not biology, so I knew going into the health sciences was not an option. Chemical engineering seemed the perfect fit. So I went into my area of study because these were subjects I liked and I knew I would be exposed to them in greater detail if I went into that field, but of course, I believe for a lot of women it's an area of concern. My father was very worried that I might not be able to support myself as a female engineer.

About making science attractive to girls, I have seen during the course of my teaching, one of the reasons that makes science, and especially advanced sciences, scary to most girls is the reliance on maths. I feel that if we can really demystify maths and show that this is something that should not be a barrier it will encourage girls to study science.

RLS: What are your research interests and why is the seminar on violence (to be held in Austria) of particular interest to you?

My research interest is actually very different from the topic of the seminar. The seminar is on learning from past experiences and how we could combat extremism. My research interest is traditional petrochemistry. Considering complementary sectors of the petroleum industry, another interest is biofuels - taking petroleum products and asking how we can actually come up with a renewable source.

For example, you find plastics are ultimately derived from petroleum products. Plastic containers litter the entire country, so we can try to solve a two-fold problem by taking these petroleum "derivatives", I use derivatives in quote because people don't traditionally think of plastics as being petroleum derivatives, but at the core of it, they are still hydrocarbons. Instead of this plastic degrading and polluting the environment you could attempt to recycle it to obtain fuel.

So one area of interest is to begin experimenting with plastic bottles to obtain liquid fuels because, ultimately, plastic products are really just hydrocarbons.

The seminar was of interest because of my passion for STEM education (Science, Technology, Engineering and Mathematics). As an advisor for an honours society and have been involved in developing a scholarship fund for educating students in the local community. Particularly important to me, and relevant to the seminar, were reports about the Boko Haram bombings in the north east carried out predominantly by young people, especially young girls and women.

I believe people are both coerced and brainwashed to carry out these bombings. It is easy to brainwash someone devoid of critical thinking skills and who is unable to combat subversive messages.

So my interest in STEM education, and in education in general, in the local community was a small way of trying to ensure that kids stay in school and do not think that this is a method of escaping issues they face in their lives.

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