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Abdulkadir Kabir

PETROLEUM DISTRIBUTION IN NIGERIA: ACTUAL STATE AND CHALLENGES

The first iteration in description the problem of the petroleum distribution in Nigeria is implemented. Due to that current state of the practical problem is presented by set of categorizations (physical flow of oil products, actual functionality of the refineries, actors on the fuel market by form of property and by size) and actual challenges. Fig. 5, ref. 14.

Key words: petroleum sector, distribution, fuel crisis, petroleum market actors, classification, challenge.

Problem statement and actuality. Nigeria is blessed with abundant natural resources of which petroleum products play a major role. At present, Nigeria is the ninth world producer and sixth world exporter of crude oil. On the domestic economy, the petroleum sector generates over 90% of the country's foreign exchange earnings, and provides employment in various forms to Nigerians [1]. Unfortunately, the domestic management of petroleum resources is fraught with a Number of problems [2-6, 10]. To make their review is the aim of this aticle.

Aim of the research. This article is focused at contributing to the collecting facts in the area of the various challenges facing Nigeria in petroleum distributions and the oil theft associated.

Main findings. Essential part of facts we faced were presented and analized in [7]. Let's consider them in more details putting attention to appropriate "age" of appropriate statistics and conclusions given by authors.

First of all it's important to look at the petroleum as at the product. Product is an important element of the marketing mix. According to Kotler and Armstrong [8], a product is "anything that can be offered to a market for attention, acquisition, use or consumption which might satisfy a want or need. It includes physical object and intangible objects". From the above conception petroleum and its bye products may include the following: premium motor spirit (PMS OR PERTOL); automotive Gas Oil (AGO or Diesel); household Kerosene (HHK); aviation turbine kerosene (ATK or jet-Al); industry fuel (high pour Fuel Oil (HPFO) and low pour Fuel Oil (LPFO); liquefied petroleum gas (LPG); bitumen; base oil.

In any established organization, decision about how to distribute products and services to ultimate consumers are among the most important decisions confronting management because distribution decisions must be made in terms of various and sometimes divergent objectives and strategies. Under such situations, Kotler and Armstrong suggested that distribution decisions should be guided by three overall criteria as follow:

1) market coverage i.e. the size of the potential market that needs to be served;
2) control i.e. control over the product and;
3) costs i.e. fixed and variable.

Petroleum products distribution is therefore concerned with the movement of refined petroleum from the refinery to the final consumers across various locations of delivery in the country.

In the Nigeria situation, the pipelines and products Marketing Company (PPMC) is responsible for the wholesale supply, distribution and marketing of petroleum products in Nigeria (fig. 1). Until recently, the petroleum products available for distribution were through an elaborate, network of nearly 4,000 kilometres of pipelines

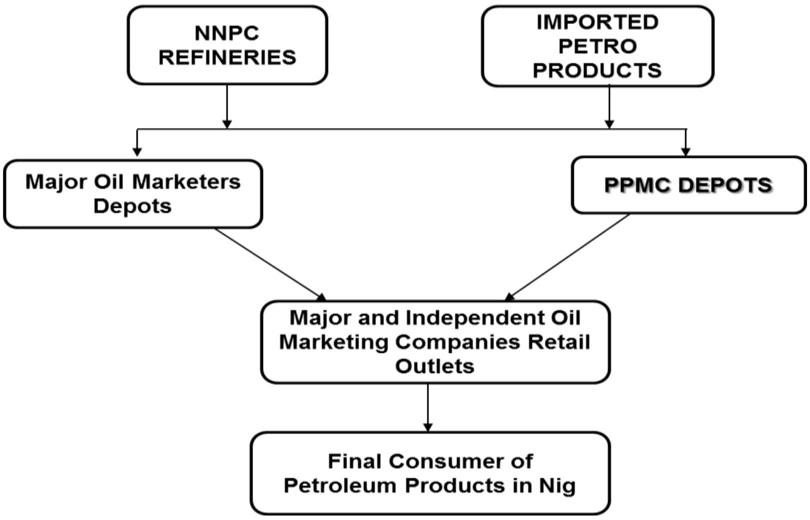

Fig. 1. The physical flow of products: the retail route used by major and independent companies in Nigeria [7, p. 237]

interconnected to 21 widely dispersed depots across the country. The products may be obtained from the four local refineries or in the event of a supply short-fall from off-shore refineries by way of imports (fig. 2). In addition to pipelines, some twenty marine tankers are used to ferry from the coastal refineries of Warri and Port-Harcourt, heavy products and other products in high demand to Lagos metropolis. As mentioned above, Nigeria presently has four refineries owned by the federal Government but being operated by the NNPC with the following operation capacities. Movement of products from the depots is the responsibility of the six major oil companies and the numerous independent marketers. Imported refined products are received at NNPC-PPMC depots at Atlas Cove. From here, products are pumped to nearby depots at Mosimi in Shagamu, from which products are pumped into various other depots through the pipelines; booster pump stations are provided along the route and between two adjoining depots. This arrangement is necessary to boost the flow of products in the pipelines along the routes.

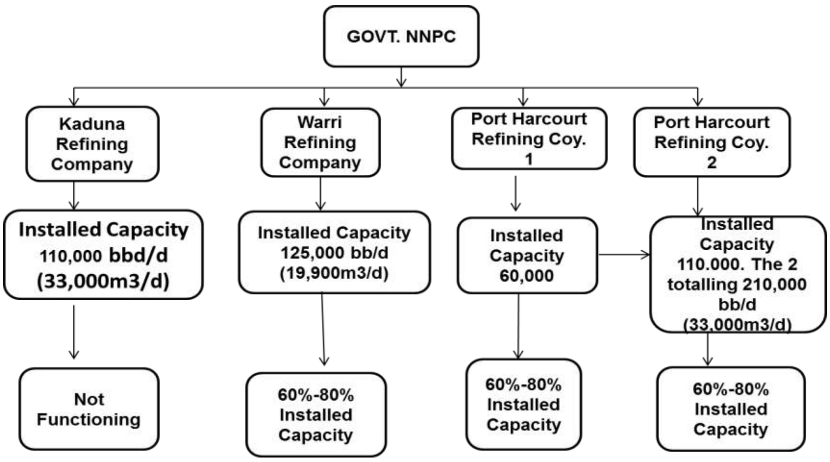

Fig. 2. Actual functionality of the refineries in Nigeria

The petroleum industry can be classified also by type of actors or by sector. The actors in the Nigerian industry consist of both private and public organizations (fig. 3).

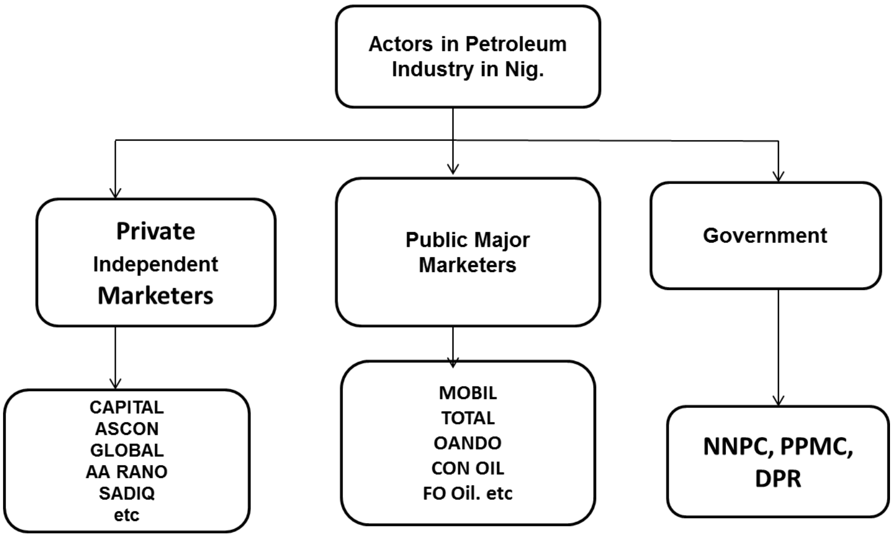

Fig. 3. Actors of the petroleum industry in Nigeria

The public actors are the government agents and functionaries such as the Nigerian National Petroleum Corporation (NNPC) and its subsidiaries, the Department of Petroleum Resources (DPR), the petroleum products pricing regulatory authority (PPPRA), among others. The private segment consists of both indigenous and foreign actors. The indigenous sector consists of private independent marketers. As far back as 1978, the concept of independent petroleum products marketing was introduced with a view to bringing indigenous independent marketers to that sector of the industry. According to Edoreh (1997) [8], in 1979 a year after the scheme of independent marketers was introduced, there were not more than 20 "independent marketers". By 1993, the number had risen to 1000. By the 2010, the indigenous independent marketers are well over 7,948 (according to the Petroleum Product Pricing Regulatory Authority, PPPR, 2010). As a measure of the growing involvement of the indigenous petroleum products marketers in the economic development process of Nigeria, it is interesting that in 1981, they accounted for less than half – percent in terms of volume of petroleum products marketed in Nigeria. By 1998, they had captured about 25 percent of the market. By the 2010, they account for nearly 40 percent of the volume of products marketed in country [1]. In terms of outlets, the major marketers have 2218 while the Independent marketers have 7948 outlets. The NNPC has 18 mega stations nationwide as at June, 2010. These indigenous independent marketers are competing with the established big (foreign) multinational enterprises usually referred to as the major oil marketers comprising:

- Mobil Oil Nigeria Plc;
- MRS Nigeria Plc;
- Total Nigeria Plc;
- Con oil Plc;
- Oando Nigeria Plc;
- African Petroleum Plc.

These six major oil marketers (fig. 4) control about 60 percent of the market.

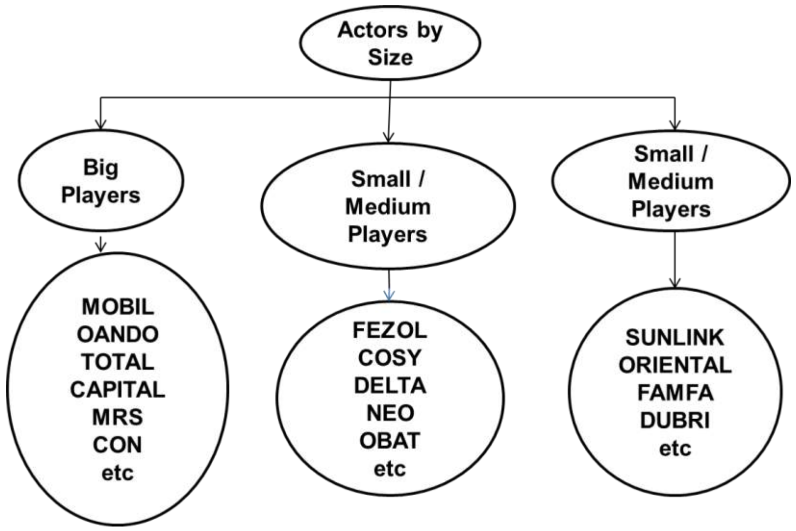

Fig. 4. Actors of the petroleum industry in Nigeria by cize

There are two major classification of petroleum industry by sector. These are the Upstream and Downstream sectors (fig. 5).

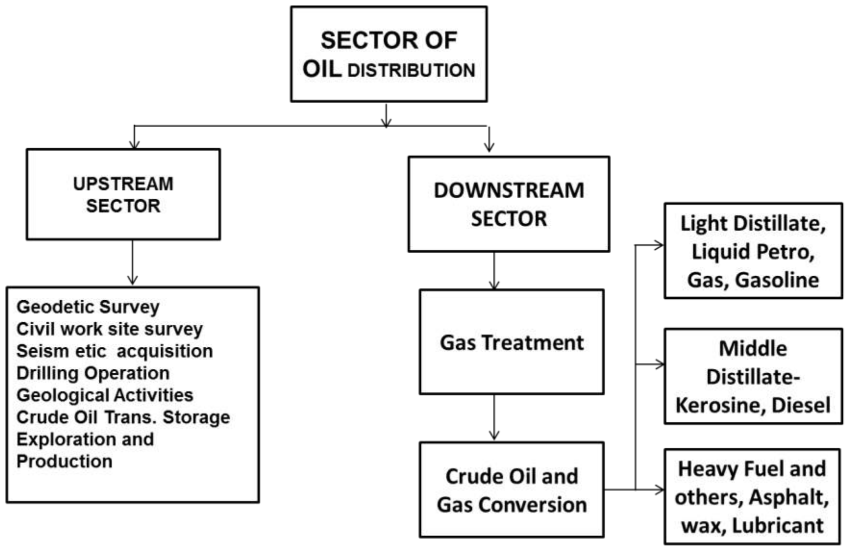

Fig. 5. Upstream and downstream sectors of the oil distribution in Nigeria

Upstream sector is presented by: Geodetic survey; Civil works such as site surveys and preparation of drilling locations; Seismic data acquisition; Drilling operations; Geological activities; Crude oil transportation and storage; Exploration and production.

The downstream sector of the petroleum industry which forms the basis of this study is characterized by such activities as: Gas treatment; Crude oil and gas conversion into refined and petrol chemical product; and Transportation and distribution of refined products.

In the downstream sector, activities are progressively falling within the control of private entrepreneurs, especially the indigenous independent marketers. It is the policy of the federal government that petroleum products be distributed by private companies.

Nigeria's perennial fuel crisis has defied all solutions by successive governments. The problem is not a creation by witches from outer space, but an entirely Nigerian problem by Nigerians Business & Economy Editor, Bassey Udo, who has reported several cycles of fuel crises in more than two decades, x-rays reasons the crisis has persisted. In spite of the efforts of government, the industry was still characterized by series of problems. The problems include the following:

- scarcity of petroleum products leading to long queues, at the service station in some;
- states and town of the country at regular intervals;
- low capacity utilization and refining activities at the nation's refineries;
- rampart fire incidents as a result of mishandling products;
- pipelines vandalization;
- large scale smuggling due to unfavourable economic product at home and higher borders prices with the neighbouring countries; and
- low investment opportunities in the sector.

In our review let's add more details about these challenges, collected in [7, 10].

Inadequate supply. Fuel scarcity is usually a result of limited or inadequate stock of products not replenished on time. But, how do you replenish the stock when nobody knows exactly what the country's demand is? From the Nigerian National Petroleum Corporation, through the Ministry of Petroleum Resources, to the Department of Petroleum Resources, and the Petroleum Products Pricing Regulatory Agency, no one can say categorically what the daily national fuel consumption figure is.The statistics are as varied as the purpose for which each agency is issuing them. When calculating subsidy claims for products, marketers, the NNPC and PPPRA put figure at between 45 and 60 million litres against conservative industry figures of between 30 and 35 million litres. If the agencies that are supposed to handle fuel supply do not know what we need or consume daily, how can we build an adequate and sustainable stock? How are we sure we are not spending our scarce resources building a stock that are being diverted and smuggled outside the country to service consumers in neighbouring countries to the detriment of Nigerians?

Dysfunctional refineries. The NNPC allocates 445,000 barrels of crude oil daily for domestic refining. If the four refineries in Port Harcourt, Warri and Kaduna, in their present state, were functioning optimally, total products yield cannot be more than about 10 to 12 million litres.Even at full capacity, the supply from those refineries will still be far from sufficient to take care of at least 50 per cent of the 45-60 million litres the NNPC says we consume daily. Despite the huge amount of money spent by government over the years on turnaround maintenance, the functional states of the refineries remain seriously impaired. With the poor condition of the refineries, the natural consequence has been the scarcity Consumers are currently facing.

No new refineries. The story would have been different if there were new refineries built either by government or private investors. But none of the 18 licenses issued by government to private investors since 2008 have led to any new facility on ground to help solve the fuel crisis puzzle.

Pipeline vandalism. Even if the refineries are in top shape, their optimal performance still depends on the availability of services from other facilities associated with their operations.The volume of refined products supplied depends directly on availability of crude oil feedstock. If crude oil is lacking because the pipelines are repeatedly attacked by vandals, there is no magic anybody can perform to guarantee sufficient products supply to consumers. The result would be scarcity and more fuel crisis. The NNPC says its biggest headache in its bid to find lasting solution to the fuel crisis over the Years has been how to deal with pipeline vandalism.

The corporation says over the last decade, it has reported a total of 16,083 pipeline breaks in different locations in the country, with ruptures accounting for 398 pipeline breaks, while 15,685 breaks were due to the activities of vandals. But the deeper issue has to do with reports that pipeline vandalism appears to be a very sophisticated insider crime with connivance of agents linking to even the highest reaches of the NNPC management echelon. That President Muhammadu Buhari recently threatened to treat persons involved in oil pipeline vandalism and other sabotage activities in the oil and gas industry like terrorists or saboteurs shows how frustrating the problem has been to the government, industry and Nigerians.

Fuel importation constraints. To make up for the balance of supply from the refineries, government's only viable option has been to import. Although that has been going on these years, the huge cost to the economy justifies why local production is still the best way out. Because crude oil and its derivatives – refined petroleum products – are subject to the gyrations of forces at the international oil market, a spike in crude oil price directly impacts retail prices of refined petroleum products at filling stations. With government opting to subsidize the difference between the landing cost of imported petroleum product and retail price above N86 per litre, it means huge amounts has to be paid as subsidy to petroleum products marketers for fuel imports But the corruption in the fuel subsidy arrangement made the arrangement very unattractive for the present administration, which at inception found it difficult to continue the payment of the subsidies. After inception, government inherited a backlog of over N600 billion subsidy bill due to marketers. Coming at a time the country's economy was bleeding from declining revenue earnings as a result of low global crude oil prices, paying the huge bill became a huge burden and a bitter pill for government to swallow. Although part of the money was paid in November 2015, it was hardly enough incentive for all the marketers to continue fuel importation. Apart from unpaid subsidies, claims for arrears of interests on bank loans, and differentials in foreign exchange made the new fuel price unattractive for the marketers. The result has been the scarcity and fuel crisis.

Drop in global oil prices. With global crude oil prices dropping to unprecedented levels of less than $25 per barrel late last year, landing cost of imported fuel translated to a retail price below the official pump priceof N86 per litre, necessitating the marketers to pay back money to government in the form of over-recovery. For marketers, the modulated fuel pricing mechanism introduced by government was not a good business, hence their resolve to drop out of the fuel importation programme. The modulation mechanism provides an automatic adjustment that regulated retail price of fuel at the pump against the movement of prices at the international crude oil market, to minimise or eliminate subsidy payment. The withdrawal of the independent and major marketers, which accounted for the supply of 55 per cent of the entire national fuel consumption, meant NNPC would move from providing 45 per cent capacity to 80 per cent initially, and ultimately 100 per cent of the supply. Out of more than 26,700 filling stations nationwide, only 2,453 stations belong to the Major Oil Marketers Association of Nigeria (MOMAN), comprising Mobil Oil, Total, Oando, Conoil, Forte Oil and MRS. NNPC has only 37 mega stations located only in the capital cities in the 36 states of the federation and the federal capital territory. The rest of over 24,226 outlets located in the country's hinterland belong to the Independent Petroleum Marketers Association of Nigeria (IPMAN). Equally, out of nearly 130 fuel depots in the country, IPMAN, MOMAN and NNPC own them in the ratio of 83:24:22 respectively. With inadequate capacity of the NNPC in terms of resources to handle the entire importation programme and the facilities to store and distribute even the inadequate quantity imported is part of the current fuel supply crisis. The scarcity is simply because the NNPC is unable to import enough to meet growing demand. The problem is worsened by the lack of involvement of the independent and major marketers in the fuel supply programme. If an idle man is known to be a devil's workshop, an idle marketer with a huge capacity than NNPC could be worse – a willing tool to sabotage the fuel supply effort for selfish reasons.

Poor import planning schedule. Even in the best of times, the NNPC has not been the best of planners.Under the current crisis, the situation appears to have worsened, because there are strong suggestions that the corporation did not do enough due diligence, in terms of advance planning and monitoring of the stock of fuel at the depots to know when they would run dry and ensure that fresh orders were placed on time to replenish depleting stocks. Even where such stocks were experiencing unusual pressures, every forward planning country maintains a healthy strategic reserve or national reservoir it could draw from in contingencies to make up for any shortfall in supply till the import consignments arrive. With the uncertainty and crisis the country is always exposed to each time there was a short delay in delivery of imported fuel cargoes, there are strong doubts that the country has any such strategic reserve or advance planning arrangement for fuel supply. If there is, how long is that reserve capable of sustaining supply before the next crisis? The effect of lack of planning has always been shortages, which always triggers ripples of panic buying by consumers perpetually unsure for how long the scarcity would last.

Corruption, diversion, smuggling. Despite a hugely inadequate supply by NNPC, a significant volume is being diverted by corrupt officials who connive with marketers and transport owners to divert allocations from depots either to hoard in underground tanks to create artificial scarcity, or smuggle to neighbouring countries to earn higher profits. The Minister of State for Petroleum Resources, Ibe Kachikwu, was stating the obvious when he said this week that at least 30 per cent of fuel allocations meant for different parts of the country were diverted daily to neighbouring countries like Cameroon, Chad, Togo and Benin Republic. Despite efforts by the NNPC to curb such sharp practices by publicizing the daily truck outs from the depots, it was hardly enough to deter these saboteurs, who work with insiders to undermine the system. Whereas marketers are supposed to get the product at the depots at about N77 per litre to retail at N86 at the pump, reports say corrupt depot officials give the allocations to marketers at about N105 per litre. To recover their costs, such allocations are usually diverted to remote locations in the hinterlands where they are sold at cut throat prices of between N150 and N200 per litre to desperate consumers.

Forex crisis. Even those marketers that had allocations to import and supply petroleum products are unable todo so due to lack of foreign exchange following the restriction imposed by the Central Bankof Nigeria on access to FOREX by some importers. Some fuel marketers are hardly able to access dollars and open letters of credit for their imports. Banks are reluctant to provide credit lines to enable marketers bring in more products. They are more interested in recovering outstanding amounts in terms of interests on previous loans and the differentials in foreign exchange rates. This is at the heart of the current fuel crisis.

Fuel crisis as good business time for some Nigerians. Fuel crisis, like break out of war, is the perfect time for good business for some Nigerians, who thrive in crisis situations, and would do everything to sustain the crisis. The belief of such people is that if they do not create a desperate situation through fuel scarcity, they might be deprived the opportunity to make extra profits from the crisis that would ensue. In the recent past, there were some Nigerians who amassed stupendous wealth from the murky waters of the fuel subsidy scam. Most of those marketers who have tasted the allure of the subsidy wealth have reinvested their loots in strategic downstream oil industry facilities like tank farms, depots and transportation facilities, and developed capacities to dictate to even the NNPC the direction the fuel supply issue should go. At will, such corrupt private individuals are the ones holding the government to ransom by cutting deals that are inimical to the collective interest of Nigerians.

Pay back time by marketers. The bulk of the marketers that enjoyed the subsidy fraud find the present administration's determination to stop that arrangement an affront to their selfish interest. For refusing to pay arrears of their subsidy claims, as was usually the case under the immediate past administration, the marketers would stop at nothing to frustrate government efforts, and have found the current fuel crisis the best time to get back at government. In the face of foreign exchange scarcity, the NNPC was made to become the sole importer of petroleum products, to the exclusion of the independent marketers, which have the bulk of the fuel storage and distribution facilities. Even when government negotiated with the upstream multinational companies for a $200 million foreign exchange buffer for their downstream affiliates over the next one year, the independent marketers were not involved. That is why the recently invitation by the minister for the independent marketers to join hands with the government and other marketers to ensure adequate fuel supply has not been attractive to some operators. Some of the marketers who responded are said to be cutting deals with some fuel importers on the high seas by delaying their import schedules to bring in products beyond the normal time, in a bid to attract costs that would make payment of subsidy inevitable.

NNPC internal politics. The current fuel crisis has lingered longer than Nigerians are used to because corruption is fighting back. Reports say there is a power tussle in the NNPC between loyalists of the old order in the oil industry and the new order led by President Muhammadu Buhari and Ibe Kachikwu. The old order feels threatened by the changes in the NNPC so far to uproot entrenched interests, particularly in the fuel supply front, and have resolved to frustrate every effort to change the status quo. Every attempt to reform the NNPC's operational processes, including the removal of fuel subsidy and rehabilitation of the refineries, have been criticized as 'one-man show'. When Mr. Kachikwu recently moved around some line managers and deputy managers in the Pipelines and Products Marketing Company, PPMC, while some others were asked to proceed on compulsory leave, most of the affected workers not only adopted a 'siddon look' attitude to work, but openly defied official directives, sabotaging efforts to turn the system around. Frustrated by the antics of this group, the minister was compelled recently to blame "saboteurs" for the persistent fuel queues across the country.

Absence of deregulation, PIB. Deregulation, as one of the key components of the Petroleum Industry Bill, is a policy that government expected would help open up the industry for more private sector participation in the downstream sector of the petroleum industry. With more participants in the fuel supply process, the scarcity problem would be resolved. The delay in the passage of the PIB, which would have paved the way for the take-off of deregulation, as a solution to the bad management of the oil industry, is seen as the reason for the perennial fuel shortage and the crisis consumers are facing.

If to conclude basing on official statistics and interviews, nearly a third of the country's fuel supply is being stolen in the midst of crippling shortages in Africa's largest oil producer. About 30 percent of Nigeria's refined fuel is being "diverted" and often smuggled into neighboring countries. But none of the trucks transporting fuel across the country are being tracked. "We need a whole army to stop this from happening," said Emmanuel Kachikwu, state minister for petroleum resources, referring to the widespread theft. The most severe fuel scarcity in a year in Africa's most populous nation has left motorists paying more than double the government’s official price for gasoline and put increasing pressure on a stagnating economy that’s been hit by tumbling oil prices. The national statistics office blames the shortages for contributing to an 8 percent drop in labor productivity in the fourth quarter.

“They’ve done this before,” Dolapo Oni, the Lagos-based head of energy research at Ecobank Transnational Inc. said, referring to Project Aquila, which put trackers on gasoline trucks. “Drivers tampered with them. It sounds like an interesting idea, but it’s difficult to implement unless you have a sanction for all those operating without a tracker.” The government of President Muhammadu Buhari, who came to power last year on a wave of support for his change and anti-corruption campaign, has been hit by criticism for failing to deal with huge queues at fuel stations across the country. The latest crisis has been worsened by central bank foreign-exchange controls that have left retailers paying higher costs to import supplies at a time when the government has removed subsidies and imposed a price cap at 87 naira a liter ($1.67 a gallon). Kachikwu told the Lagos audience to “please give us your patience” as the government deals with the shortages. “This one is challenging for us,” he said, before asking the crowd to stand and recite a pledge to “help this country change.”

Nigeria deployed police and soldiers to gasoline stations to maintain order as fuel shortages grip Africa’s biggest oil producer. The most severe fuel scarcity in a year in Africa’s most populous nation has left motorists paying more than double the government’s official price for gasoline and put increasing pressure on a stagnating economy that’s been hit by tumbling oil prices. The national statistics office blames the shortages, which have been on and off since May and have peaked in the last month, for contributing to an 8 percent drop in labor productivity in the fourth quarter.

“The fuel industry is holding the whole economy to ransom,” Nema Ramkhelawan-Bhana, an analyst at Rand Merchant Bank in Johannesburg, said by phone. “Nigeria is already suffering from low oil prices, and now fuel shortages are exacerbating the problem.” The latest fuel crisis has been worsened by central bank foreign-exchange controls that have left retailers paying higher costs to import supplies at a time when President Muhammadu Buhari’s government has removed subsidies and imposed a price cap at 87 naira a liter ($1.67 a gallon). As a result, gasoline is scarce, and the average cost on the market was 135 naira a liter in March, the highest since the country’s National Bureau of Statistics began compiling such data in June 2014.“The fuel shortage has reached levels where people are either having to temporarily close down their offices or to reduce their working hours,” Manji Cheto, an analyst at Teneo Intelligence in London, said in e-mailed responses to questions. “The effect of this on economic activities is obviously negative; the manufacturing sector, which has already taken a major hit in the last quarter, remains quite vulnerable.”

Nigeria's severe fuel shortage has started to cause widespread disruption to everyday services, with the telecommunications and banking sectors the latest hit hard by the worsening crisis. A major Nigerian bank announced recently that it would close all branches at 1pm local time, after major mobile phone networks announced over the weekend that a shortage of petroleum products may cause a disruption in services.In a statement, GT Bank said: "The current shortage of petroleum products in the country has limited our ability to supply diesel to all our branches in order to continue normal branch operations. Al Jazeera's Ahmed Idris, reporting from Kano in the country's north, said that public transport services have also been affected across the nation and that petrol stations were selling fuel at prices significantly above government-controlled prices." Things are gradually grinding to a halt in many areas of Nigeria at the moment," our correspondent said, noting that there were reports of schools and electricity networks being affected by the fuel shortage.The crisis started weeks before the March 29 elections, with oil suppliers hit by tightened credit lines amid halved international oil prices, a slump in the naira currency, and unpaid government debts the suppliers claim amount to nearly $1bn. The crisis is expected to be one of the most critical issues for the current President Muhammadu Buhari to address. We can support facts above by range of global indicators that characterize Nigeria's state in general [11-14]. According to 2015-2016 report data, by GDP Nigeria occupied 26th place aout of 191 countries all over the world (that is not bad). But by the Global Competiveness Index 124th place out of 140. And by the corruption index – 140th out of 168; and 9th place among 20 countries with highest Inflation.

Conclusion and prospects. Based on the made review of collected facts from different sources, we created more integrated and more structured picture of the problem of petroleum distributions in Nigeria. By now it is the first iteration in order to describe the problem and problematic as next step. It helped to understand better its field, as well as subjects involved, possible reasons and consequences, scale. Of course this problem has managerial aspect and allows to find out initial areas for decisions and changes. Next steps will be devoted to description of the practical problem and presenting it in more structured manner including specific project management terminology and instruments. This will allow to specify areas of he scientific problem as a base for futhure research.

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Рецензент статті
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