



# RESOLVING THE CHALLENGES OF PREMIX FUEL: A REVIEW OF GHANA'S PREMIX FUEL SUPPLY CHAIN

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APRIL 2020

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Premix fuel is a blend of marine mix lubricants and gasoline used as fuel for outboard motorised boats and canoes in the artisanal fishing industry. It is highly subsidized in Ghana to alleviate the challenge of high cost of fuel and provide incentives for the artisanal fisheries sector. Over the years, the allocation and supply of the fuel has faced a number of supply challenges. These challenges include diversion of the fuel from the fisheries sector and selling above government-controlled prices, all in the attempt to capture rents from the subsidies. These challenges have resulted in shortages, increased government subsidies and erratic supply of the fuel for fishing activities in the fishing communities.

Statistics from the National Petroleum Authority indicates that between 2000 and 2018, national premix fuel supply has increased from 42 million litres to about 73 million litres with an average annual growth rate of approximately 4 percent. However, there have been periods where supply goes so high. For example, in 2017, supply was 91.7 million litres due to extensive smuggling of the product and dropped to 73 million litres in 2018 when such incidence of smuggling

became subject of public discussion and stringent monitoring was enforced. As at the third quarter of 2019, premix fuel supply was about 51 million litres, which is estimated to rise up to about 76 million litres by the end of 2019.

This problem has persisted in spite of the elaborate institutional structures and policy interventions governing the distribution and utilisation of the fuel. These structures include the Ministry of Fisheries and Aquaculture Development, Ministry of Energy, the Fisheries Commission, the National Petroleum Authority, the National Premix Committee and the National Premix Secretariat. Beyond this, the management, distribution and utilisation of premix fuel is governed by National Premix Fuel Committee (NPFC) Regulations, 2016 (L. I. 2233). This policy paper reviews the premix fuel supply chain in Ghana and identifies specific defects along the value chain that allow the abovementioned challenges to occur and offers solutions to resolve the challenges to ensure the efficient allocation and distribution of premix fuel for improved fishing outputs and reduce the subsidy burden on government.

## Artisanal Fishing in Ghana

Ghana's marine fisheries sector contributes significantly to employment, livelihood support, food security and poverty alleviation. The marine fisheries sector consists of four main subsectors; artisanal fisheries, inshore fisheries, industrial trawl fisheries and tuna or large pelagic fisheries. The Artisanal fisheries subsector is the most significant of the four in terms of the landed weight of fish; it contributes about 67% of the total annual landings of the marine fishery and employs about 107,518 fishermen and 4,241 fish processors (Lazar et al., 2016).

Three types of fishing fleets are used in Ghana's fishing industry: there are the artisanal canoes, semi-industrial boats (wooden-planked vessels) and industrial vessels (large-scale trawlers and tuna boats). The small-scale artisanal fleet which contributes 60 to 70 percent of the total annual marine fish output is the largest of these fleets. As at 2010, about 12,000 wooden dugout canoes (FASDP, 2009 in CRC, 2010) which range from small, paddle powered canoes, to large boats up to 16 metres in length were recorded as Ghana's artisanal fishing fleet. It is estimated that about 55% of canoes are motorised, with large canoes usually powered by 40hp outboard motors and small canoes often carrying 8hp motors (Finegold et al., 2010).

### Subsidies in the Fisheries Sector

Governments around the world have used various forms of subsidies to help the fisheries sector to increase its economic viability. Fisheries' subsidies may be allocated to services, production, social assistance or access to inputs (Porras, 2019), and can be categorized as:

- **Direct payments**, including price support, grants, vessel buyback schemes and income compensation, which increase fishers' income and are paid directly to them.
- **Cost-reducing subsidies**, including fuel tax exemptions, subsidised loans and tax deductions, which reduce input costs for the fleet, and
- **General services**, including investments in management, research and infrastructure, which reduce capital and operating costs via indirect transfers to the fishing industry.

Sumaila et al. (2019) estimate that fuel subsidies (including fuel specific tax exemptions) is the largest type of subsidy, taking about 22% of the total global subsidy, followed by subsidies for fisheries management (19% of the total) and non-fuel tax exemptions (15% of the total). The global fisheries subsidies are estimated to be USD 35.4 billion in 2018 (Sumaila et al., 2019).

The government of Ghana has provided support to the fisheries sector through a number of subsidies programs. These include;

- Fishing port construction and renovation, and subsidies for fish landing site infrastructure
- Tax exemptions for fisheries inputs
- Subsidies for fishing gear and engines (selected fishing nets and outboard motors)
- Fuel subsidy program

### **Fuel Subsidy Program in Ghana**

The government of Ghana in the early 1990s introduced a fuel subsidy to alleviate the challenge of high cost of fuel and difficult economic conditions in the fisheries sector. Premix which is largely used by artisanal fishers has since been subsidized. Since its introduction, premix fuel has been the main source of fuel in the artisanal fisheries sub-sector. The introduction of the subsidy brought along challenges, principally, diversion of the product. Government has instituted various strategies to prevent diversion including tracking delivery, colouration of the fuel among others.

The subsidy on premix fuel is considered as a social product that benefits artisanal fishers, a group that is regarded as poor and vulnerable. The subsidy is paid from the price stabilisation levy charged on petroleum products in the country. The price stabilisation levy has two purposes: to stabilise the prices of petroleum products and subsidize the cost of premix fuel. However, the increasing demand for subsidies on premix exhausts almost the entire price stabilisation levy. The subsidy can be as high as 70% of the market cost of the fuel and costs the government about US\$44.4 million per year.<sup>1</sup>

### **The Roles of the Actors in the Supply Chain of Premix Fuel**

The premix fuel value chain involves several actors who regulate and supply premix fuel i.e. from the demand of the fuel through the main suppliers to the final consumer of the fuel. The main actors in the supply chain include;

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<sup>1</sup> Tobey, J., A. K. Normanya, P. Osei, K. Beran, & B. Crawford (2016). *Subsidies in Ghana's Marine Artisanal Fisheries Sector*. USAID/Ghana Sustainable Fisheries Management Project (SFMP). Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island. GH2014\_POL059\_CRC. 53 pp.

- *The National Premix Committee (NPC)*

The committee has oversight responsibilities on the allocation, distribution and sale of premix fuel. The NPC is mandated to set guidelines and modalities for the establishment of premix fuel sales points, purchasing procedures, transportation of premix fuel to sales points and sale to beneficiaries in consultation with stakeholders. It also determines the approved quantities to be supplied, depending on the needs of fishermen and the season and determines the price build-up of premix fuel in consultation with the National Petroleum Authority (NPA) (MoFA, 2011). The NPC was reconstituted in 2009 after several versions of it were abandoned in the preceding years. Membership of the committee includes;

- (a) a chairperson nominated by the Minister;
- (b) one representative each from the
  - (i). Ministry responsible for Fisheries;
  - (ii). Ministry responsible for Petroleum;
  - (iii). Fisheries Commission;
  - (iv). National Inland Canoe Fishermen Council;
  - (v). Ghana National Canoe Fishermen Council; and
  - (vi). National Fisheries Association of Ghana
- (c) the Industry Coordinator of the Association of Oil Marketing Companies; and
- (d) three other persons nominated by the Minister at least one of whom is a woman.

- *The National Premix Fuel Secretariat (NPFS)*

The National Premix Fuel Secretariat (NPFS) was established to support the NPC's mandate and also perform technical and administrative functions related to the distribution and management of Premix fuel. These administrative functions are to among others; develop a register for all Landing Beach Committees; monitor, evaluate and reconcile premix fuel requested by the Secretariat and supplied by the Tema Oil Refinery or any other licensed operator and lifted by Oil Marketing Companies with premix fuel received by the Landing Beach Committees; perform technical and administrative functions in relation to premix fuel and; receive complaints and other reports from beneficiaries of premix fuel and forward the complaints and reports to the Committee for redress.

- *The Landing Beach Committee (LBC)*

The Landing Beach Committee ensures the equitable distribution and sale of premix fuel to fishermen through a premix fuel sales point. The LBCs requests and ensures the delivery of the premix fuel to their designated discharging points for onward supply to the fisherfolks. The National Premix Fuel Committee (NPFC) Regulations, 2016 (L. I. 2233) also enjoins the LBC to undertake developmental projects within the community in consultation with the district assembly in which the community is located. These development projects are to be funded from proceeds of margins from the sale of the fuel of which 53 percent is allocated for community development.

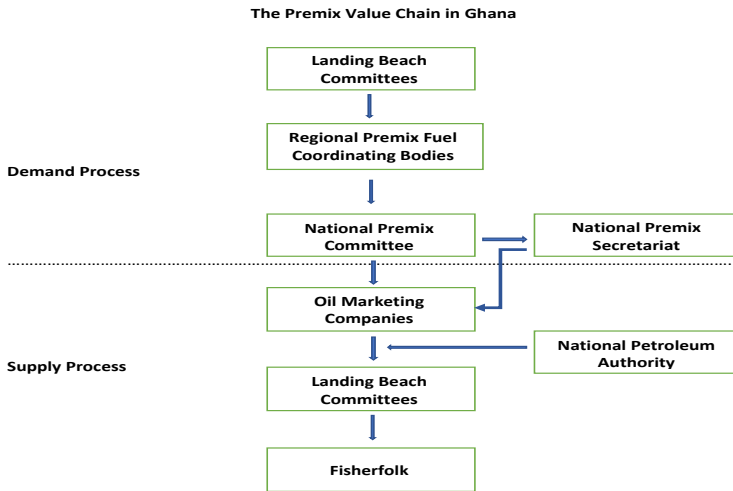
- *Regional Premix Fuel Coordinating Bodies*

Regional Premix Fuel Coordinating Bodies operate under the general oversight of the Regional Ministers to ensure proper accountability and monitoring of Premix Fuel in each region. These bodies were set up to collaborate with the National Premix Fuel Secretariat (NPFS) to monitor the distribution and efficient management of Premix Fuel. A new arrangement of the supply chain requires the Landing Beach Committees to make their premix fuel requests to the NPC through the Regional Coordinating Bodies.

- *Oil Marketing Companies (OMCs)*

The National Premix Secretariat selects prequalified Oil Marketing Companies to deliver premix fuel to the LBCs. The premix fuel, which is blended by the Tema Oil Refinery is transported and discharged by the OMCs using their Bulk Road Vehicles (BRVs) to the LBCs.

Figure 1: Framework of premix fuel value chain



*Source: Author's construct*

The diagram explains the demand and supply channels of premix fuel. The Landing Beach Committees demands fuel through the Regional Premix Coordinating Bodies who process and forward the demands to the NPC. The NPC, working with the secretariat considers these demands and instructs the Oil Marketing Companies to supply the fuel to the LBCs. The OMCs, using their Bulk Road Vehicles (BRV) deliver the prescribed quantities to the LBCs for onward supply to the fisherfolk.

The above chain shows a very minimal role for the National Petroleum Authority (NPA), the regulator of petroleum products in Ghana. The NPA mainly tracks and monitors the delivery of premix fuel across the country. However, the NPA Act, 2005 (Act 691) bestows the responsibility of protecting consumer interests and monitoring the standards of performance and quality of the provision of petroleum services on the NPA. The current arrangement takes this responsibility from the NPA to entities in the fisheries sector. This dilutes the responsibility of monitoring the standards of petroleum products across the country especially in the face of the evidence that the premix fuel may have been used outside the fisheries sector.



## Challenges of Premix Fuel Allocation and Distribution

The implementation of the subsidy has encountered a number of operational and management challenges in the allocation, distribution, and sale of the premix fuel. There is a plethora of evidence to show that the supply chain of premix has been compromised over the years, leading to shortages and sale of the fuel on the black market. These unintended consequences of the fuel subsidy have threatened the goal of reducing operating costs for artisanal fishermen and rather increased government's subsidy burden.

### *Premix Fuel Allocation Challenges*

The fuel subsidy is distributed based on frame survey results (i.e. based on the size of fishing villages and the distribution of landing sites and boats) (Tobey et al., 2016). The results from the frame survey are static and do not account for real time seasonal dynamics. Based on seasonal location of target species, fishermen move all the time. As a result, fishermen move from their designated LBCs to others increasing demand for premix and its attendant complains of shortages.

### *Distribution Challenges*

About 200 cases of premix fuel diversion were recorded by National Petroleum Authority (NPA) in 2017 causing a huge loss of about GHS7 million to the state.<sup>2</sup> The diversion of the fuel away from the intended destination for other uses than fishing breaks the supply chain of the fuel leading to the creation of a new market controlled by cartels or middlemen leading to limited supply or shortages. In many instances, premix fuel is sold twice the subsidized price of GHS7.30 by individuals hoarding the resource as exposed by a recent Joy News Documentary<sup>3</sup> on the supply of premix fuel in Ghana.

Another distribution challenge is the nature of the dispensing system at the LBCs. The fuel is dispensed into drums with no regulations on how much one fisherman can buy. This gives the opportunity to middlemen to buy and hoard large quantities of the fuel to sell at exorbitant prices.

### *Transparency and Accountability Challenges*

LBCs are mandated by law as the only body to sell premix fuel in the country. Regulation 22 of LI 2233 prescribes the nomination of the members of LBCs, but this is not adhered to. Rather, membership of the LBCs has been used as a reward scheme for political agents in the local

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<sup>2</sup> <http://citifmonline.com/2017/11/200-instances-pre-mix-fuel-diversions-recorded-2017/>

<sup>3</sup> <https://www.myjoyonline.com/news/2019/june-26th/premix-cartel-ghana-losing-about-23k-on-every-fuel-truck.php>

communities. This has made it difficult for the NPS to demand accountability from the LBCs. As a result, transparency and accountability in the supply and distribution of the premix fuel is sacrificed for the benefit of political agents.

Again, the regulation requires that 53 percent of the proceeds of margins from the sale of premix fuel is to be kept for the development of the fishing community. Some complaints from fishing communities suggest that the investment in community development is less than the intended percentage in some cases. Although we have not verified these complaints, it shows that the fishing communities do not have information on how much revenue is realized to determine how much is due them for development.

### Implications of the Challenges with the Supply of Premix

The allocation and distribution challenges with the supply of premix fuel has resulted in the shortages among fishermen, loss of government revenue through subsidy, the underdevelopment of fishing communities, the loss of income due the fishermen and the lack of accountability.

Firstly, because premix fuel is a subsidized product, diversion from its intended purpose results in government spending the price stabilization levy which is also intended to stabilize petroleum product prices to provide subsidies for the product.

Beyond the cost implications, there is a more significant impact on the output from the artisanal fisheries subsector. Erratic supply of premix fuel has implications for output: fishermen may not be able to produce optimal levels of output and some fishermen may be forced to seek alternative livelihoods outside the fishing sector due to the illegal and exorbitant premix fuel prices. This has further implications for food security and poverty reduction.

Moreover, the shortage and expensive premix fuel has in some cases resulted in some fishermen mixing the fuels themselves. However, they are unable to mix in the right specifications and this results in frequent breakdown of their engines. Again, this increases their cost of production because they buy unsubsidized fuel from the market to mix as fuel for their boats.

The impact of the fuel shortage is not only felt in fishing communities but also in island communities where fishing boats are mainly used as means of transportation. Also, fish traders, most of whom are women, and their consumers are also affected by fuel shortages because when

catches are low the fishermen demand higher prices. This also has implications on the food and nutritional security of the Ghanaian populace. Thus, there is a broader range of beneficiaries from the subsidy premix than the fishermen themselves.

### Regulatory Responses to the Challenges

Following the high incidence of diversion in the distribution of the premix fuel, the National Petroleum Authority responded by installing tracking devices and software to monitor the Bulk Road Vehicles (BRV) engaged in the distribution of the fuel to avert diversions. However, the introduction of tracking devices has not fully mitigated these challenges as premix consignments to some landing beaches still gets diverted. The NPS is also unable to go beyond tracking delivery to monitoring how premix fuel is stored and distributed at the landing beaches. This failure to track at the distribution end leaves further room for people to buy and hoard the fuel to sell above the government-controlled price.

It is however important to note that the NPS has taken restructuring measures to the number of landing beaches it serves to ensure close monitoring of the supply chain. The NPS has significantly reduced the number of landing beaches from 475 to 286 by 2019. The restructuring according to the NPS is based on weekly demand and level of fishing-based activity of the community and allows the NPS to restrict the supply of premix fuel to only the designated points.

Again, the National Premix Committee and the National Premix Secretariat has punished some OMCs engaged in fuel diversions to serve as a deterrent to others. In 2017, a total of 14 OMCs were banned from distributing premix fuel after being found culpable of premix fuel diversions.<sup>4</sup>

While these efforts are commendable, the NPC and its Secretariat have not been able to tackle the problem of hoarding and selling of premix fuel at exorbitant prices. This problem currently renders the tracking system redundant because despite the tracking the fuel still falls into the hands of middlemen to be sold at above-government regulated prices.

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<sup>4</sup> <https://www.graphic.com.gh/news/general-news/14-oil-companies-banned-for-diverting-premix-fuel.html>

### Fuel Subsidy Management in other Countries

There are many examples from other countries of alternative mechanisms for managing fuel subsidies. These include rebates by governments, discounts by distributors, and smart cards held by users (Sumaila et al., 2008).

In Australia, fuel suppliers can claim a fuel grant from the government to sell at a discounted price to fishing cooperatives with whom they have established agreements to service (Sumaila et al., 2008). In Malaysia, the mechanism used to allocate subsidized fuel is through an Information, Communication, and Technology (ICT) system. Fishermen, or operators of registered fishing boats use an “e-diesel” card to purchase subsidized diesel at select locations around the country (Sumaila et al., 2008). Fishermen who are registered on the system receive a monthly subsidized fuel quota, based on the size of their vessels. The quota is based on a scientific estimation of fuel consumption by the vessels. This mechanism was adopted as a result of misuse and illegal purchases of subsidized fuel by users other than fishermen. Each transaction is recorded and bears the vessel owner’s name, vessel registration number and total allowable quota.

### Conclusion

The premix fuel subsidy is intended to reduce the production cost of fishermen in the artisanal fisheries sector hence high prevalence of premix fuel diversion with its accompanying effects of exorbitant prices has brought about great losses to fishermen and government. While the National Premix Committee and its Secretariat have put in measures to tackle the challenge, it appears however that these measures are not enough to purge the system of its challenges. As the prevalence of diversion is reducing, hoarding and re-sale at exorbitant prices is currently on the ascendancy. The implications of this is the potential reduction of the output of the artisanal fisheries sector with its attendant livelihood and food security problems.

## Recommendations

Based on the challenges discussed in this paper, the following steps are recommended for the government in strengthening the allocation, distribution and supply of premix fuel in Ghana.

1. **Tracking Fishing Boats and their Activities.** Technology makes it possible for activity of the boats to be tracked to ensure efficient management of fuel purchases of boat owners and also map out consumption pattern for proper planning. They can collaborate with technology innovators and universities to design the appropriate solution for the Ghanaian context.
2. **Installation of Metered Fuel Dispensers.** The NPS through the OMCs should install metered fuel dispensers to supply premix fuel at the various landing beaches. This will ensure that the NPS is able to go beyond tracking delivery to monitoring how premix fuel is stored and distributed at the landing beaches. This system should replace the Landing Beach Committees who have become a tool for partisan politics and have proven to be inefficient in the distribution of premix fuel. This will require an amendment of the National Premix Fuel Committee (NPFC) Regulations, 2016 (L. I. 2233) which prescribes the LBCs as the only entities to sell premix fuel.
3. **The Management of Premix Should be Moved to the National Petroleum Authority.** Premix is a petroleum product and the NPA is mandated to protect consumer interests and monitor the standards of performance and quality of the provision of petroleum products and services in the country. It is thus important for the NPA to be responsible for the management of premix fuel like other petroleum products.
4. **Channelling the Development Responsibilities of the LBC through the District Assemblies.** The district assemblies are the government's development actors at the local level and should be made responsible for developing the fishing communities. The duplication of the assemblies' responsibilities by the LBC often lead to neglect of fishing communities by the assemblies, misappropriation of funds by the LBCs and the use of the LBCs as tools by political agents.

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