

THE IMPACTS OF OIL AND GAS EXPLOITATTION ON FISHER FOLKS AND CONSUMERS: EXPERIENCE OF SIX WEST AFRICAN COUNTRIES

Introduction

The fisheries sector is a vital source of trade and income for financial needs and social development in most parts of the world. Indeed, fishing is a source of food for mankind; securing jobs and economic benefits for many people. In addition to the provision of food, fishing contributes to the gross domestic product (GDP), provides livelihoods for fishermen and processors, and is, beyond that, a source of foreign exchange. It increases government revenue through fisheries agreements and taxes for many countries. In 2016, world fishery production reached a record value of around 171 million tonnes, estimated at USD 362 billion (FAO, 2018). It should be noted that the average annual increase in world consumption of fish intended for human consumption has outstripped population growth by twice (3.2% against 1.6%), thus surpassing that of meat from all land animals. combined (2.8%) (FAO, 2018). It is estimated that the fisheries sector in Africa employs 12.3 million full-time and part-time fishers and processors. This represents 2.1% of the African population aged 15 to 64 years with 42.4% in fish processing, mostly occupied by women (FAO, 2014).

Fishing, a sector seriously threatened by oil and gas exploitation

The environmental and social impacts and risks of oil and gas exploitation are significant and destroy the economic, social and health fabric of fishing communities, women involved in processing and consumers. Ecologically, marine and aquatic, terrestrial and wetland ecosystems are negatively impacted resulting in environmental destruction and loss of biodiversity. This compromises the survival of species and weakens the livelihoods of communities bordering fossil fuels' extraction site.

Actors involved in oil and gas extraction in West Africa

Three types of players are concerned, these are: the six giant oilcompanies Shell, Exxon-Mobil, BP, Total, Chevron Texaco and ENI); the national companies NNPC, GNPC,

PETROCI, NACOL, etc..; and the smaller independent companies Tullow Oil, Kosmos Energy, etc. They come together in consortia to maximize profits and minimize drilling and exploitation risks.

Impacts of oil and gas exploitation on fishermen in Benin, Côte d'Ivoire, Ghana, Liberia, Nigeria and Togo.

A study was carried out in each of the aforementioned countries, which revealed the consequences of oil and gas exploitation. These studies are accompanied by recommendations for the relevant actors.

Nigeria

The study in Nigeria, based on data collected through focus groups, field visits to polluted places and a literature review of the empirical literature, reveals, among other things, that fishermen not only suffered severe loss of income in traditional peasant fishing, but also that their livelihood capacities declined.

The fishermen were unanimous on the impact of the two large oil spills that occurred in Goi in 2008 on household income and well-being. Prior to these oil spills which destroyed mangroves and affected aquatic life in the Goi River, the daily income from fishing was in the range of \$ 12.8 to \$ 51. With the oil spills, fishing activity declined. For example, income from periwinkle fishing was higher in areas not affected by the oil spill. Before the oil spills, fishermen earned between \$ 178,744 and \$ 255,480 per week. In contrast, those in communities affected by the oil spill earned a symbolic income of US \$ 485 per year. The income disparity of \$ 1,041.38 per year represents a decrease of 55.25%.

The destruction of mangroves from oil spills means more than a loss of biodiversity. It has an indirect impact on fish processing. It also means that the impact goes beyond the depletion of fish species that previously depended on the mangrove forest for their reproduction. This destruction also limits the scope of economic and commercial activities related to fishing. Therefore, women are seriously affected by the lack of alternative livelihoods. For men and women without formal education and skills for employment in a modern working environment, the loss of traditional livelihoods has intensified poverty.

Ghana

Referring to the existing literature, we note that Ghanaian fish production from marine fisheries has been declining since 1999, dropping from nearly 420,000 tonnes to 202,000 tonnes in 2014. Total fish exports reached a peak in 2003, with a value of 120

million USD, but sharply decreased to 44 million USD, while the peak of total fish exports in quantity was around 60,000 tonnes in 2001. In order to support the annual consumption of fish per capita (estimated at around 24.2 kg in 2010), imports have increased significantly in recent years, reaching USD 373 million in 2013. As a result, the seafood trade balance has grown from a surplus of 33 million dollars in 1997 to a deficit of 319 million USD in 2013. It is estimated that fishing, mainly artisanal, employs more than 29,300 fishing boats, more than half of which are non-motorized. It concerns more than 250,000 fishermen.

Field observations confirm that, based on the existing evidence, the decline of Ghana's fishing industry could reach an irreversible level due to offshore oil development.

Côte d'Ivoire

The Ivory Coast, which plans to be an oil exporting country, has for decades launched extensive exploration of the Gulf of Guinea sedimentary basin. Since the 1980s, several discovered wells have started producing oil and gas. This is causing a situation which today results in the decline in the activity of artisanal fishing. Indeed, the economic stakes presented by this oil exploitation have relegated to the background this jobgenerating activity on which several communities in the district of Abidian depend. The study revealed socioeconomic and environmental impacts of oil and gas exploitation on the fisher folks' communities: loss of fishing grounds; increase in working time which affects the revenue to be earned; 50% loss of their monthly income which fluctuates around 300 USD, or 220 Euros / month; difficulty paying charges (tax, fuel, insurance); the inaccessibility of certain fishing areas due to the presence of oil companies.

Benin

The study on the potential impacts of oil and gas exploitation showed, on the one hand, that Benin is a potential candidate for oil and gas exploitation and, on the other hand, that the coastal sedimentary basin du Benin is subdivided into 17 oil blocks, namely: 2 blocks on land (onshore) A and B and 15 blocks at sea (offshore). Among these 17 blocks, blocks B, 3, 4, 5 and 6 are occupied and blocks A, 1, 2, 7 to 15 are free.

The presence of the oil production platform and the gas pipeline requires, for safety measures, an easement area all around the platforms and pipelines. This zone is closed to all fishing and other maritime activities. Fishermen and fish smokers say they have negative impacts on their activities and on their income following the installation of platforms and pipelines. Regarding

the damage caused by the fossil fuels facilities, 19% said they had already observed the death of fish. Regarding the consequences of the installations on the fishermen, 42% claimed to have lost income and 2% of the surveyed fishermen claimed to already see their nets torn during their activities. Regarding the potential damage in the event of future installations, 77% of those surveyed fear that this will affect their future income.

Liberia

Fishing in Liberia contributes around 10% to the country's GDP. The sector provides full-time or parttime employment to around 15,000 fish harvesters and 25,000 other fish processors and traders, providing at least 50% of the national protein requirement. It should be noted that artisanal fishing employs 33,000 people, 60% of whom are women. Small-scale fishermen provide the majority of the national fish supply, while the industrial sector is mainly exploited by foreign companies which export their catch. Women who live in coastal communities often engage in subsistence fishing for their households. The marine fishing sector contributes significantly to the socio-economic development of Liberia.

In general, the different operational phases of the offshore oil and gas industry, from exploration to production, are known to have negative socio-economic and environmental impacts on fisheries and fishermen.

Le Togo.

Togolese fishing is a source of employment for 10,000 fishermen (made up of native and non-native fishermen), 60% of whom are full-time, and 12,000 traders, traders and processors of fishery products. Fishing directly supports 150,000 people (FAO, 2007). It contributes 4% to the GDP of the primary sector. The value of the production of artisanal fishing can be estimated at more than 5 billion CFA francs (USD 10,000,000) and the value added by the processing and marketing of fishery products at more than 10 billion CFA francs (USD 20,000,000) (FAO, 2007). Togolese fisheries are carried out on sea, lagoon and river water bodies, dams and fish ponds. They are artisanal and industrial at sea and exclusively artisanal in other fisheries. Despite their relative poverty, fishery resources allow fishermen to make permanent catches at sea and in lagoons and seasonal catches in rivers whose annual estimates vary between 12,000 and 17,000 tons (DPA, 2018). Apart from fishery resources, the Togolese maritime system is full of oil resources, the first discoveries of which date back to the end of the 1960s (Direction des Hydrocarbons, 2011). This deposit is reported offshore. The oil reserves discovered and which can be exploited for the moment are offshore, in particular the blocks: Block-1 and Block-2 called OTI-1 and KARA -1, respectively located at 17 km and 63 km of the Togolese maritime coast.

The fishing industry faces challenges related, in part, to oil and gas activities. Over the past 10 years, incomes have declined for both women and men. The majority of respondents (47%) experienced a decrease in the order of 20 to 50%. 37% of those questioned admit a drop in income of more than 50%. For a proportion of 16%, the decrease is less than 20%. The reasons for the decrease in income of fishing communities are dominated by: illegal fishing practices (85% of respondent); the presence of gas pipelines (9% of respondent); oil exploration and exploitation (6% of respondent).

Conclusion

In the context of this study, the analysis of the real and potential impacts of oil and gas exploitation on the fishing world established important aspects of the exploitation of these deposits in West African countries. We notice different situations with regard to oil exploitation, the place of oil and gas in the economy or the real risks of environmental degradation, and the socio-economic conditions of fishermen in the countries.

Regarding oil and gas producing countries, the environmental and social impacts and risks are significant and destructive of the economic, social and health fabric of the fishing communities, of the women involved in processing. Consumers also suffer. Ecologically, marine and aquatic, terrestrial and wetland ecosystems are negatively impacted, leading to the destruction of the environment, calling into question the survival of species and the livelihoods of communities bordering the sites. exploitation of hydrocarbons. As a result, poverty and ill-being are gradually taking hold in the artisanal fishing sector in these countries.

Recommendations for minimizing the risks of operation and investing in renewable energies.

To governments (?) and regional governance bodies (?)

 Improve basic essential services as well as the financing conditions of loans to fish processing associations and fishermen for the financing and professionalization of their activities;

- Promote renewable energies by encouraging operators in the petroleum products sector to invest in the just energy transition.
- 3. Set up a community compensation fund.
- 4. Establish a regional legal framework with neighboring countries for offshore oil and gas exploitation, and collaborate with other regional legal frameworks on the marine environment;
- Encourage the ministry responsible for the environment to increase environmental monitoring;
- Enforce legal provisions and treaties aimed at protecting environmental resources, particularly marine resources, from oil and gas companies;
- 7. Establish a national fund in the event of accidents or oil spills;
- Associate riparian communities in the exploration and exploitation process of current oil projects; and CSOs in the management of hydrocarbons;
- Adopt a policy for the protection of current fishing grounds in order to guarantee women a real source of income and empowerment;
- 10. Set up a monitoring and evaluation system to deal with the damage inflicted on fishing boats and nets, as well as the loss of income associated with the reduction in fishing catches;
- 11. Promote livelihoods alternatives led by women;

To oil companies

- 12. Clean up the waterways affected by the oil spill in the communities;
- 13. Divest from fossil fuels and consider largescale investments in the production of alternative renewable energies in the interest of the global effort to safeguard the climate and vulnerable indigenous communities whose livelihoods are threatened:
- 14. Stop gas flaring and replace all sensitive and corroded petroleum pipes at short notice.

To Civil Society Organizations

15. Advocate with government authorities to provide assistance to stakeholders impacted by oil and gas exploitation;

- 16. Ensure compliance with the measures proposed in the impact studies;
- 17. Position yourself as a spokesperson for fishermen and fish processors;
- 18. Position itself as a control body for the management of hydrocarbons;
- Raise awareness among consumers / populations;
- 20. Support the empowerment of women, and demand environmental justice from oil companies and government;
- 21. Sensitize communities to the problem of pipeline vandalism and oil siphoning;
- 22. Advocate for adequate compensation for fishermen by companies responsible for pollution of water, soil, mangroves, and air.

Bibliography

- Osuagwu, E. S., & Olaifa, E. (2018). Effects of oil spills on fish production in the Niger Delta. PLoS ONE, 13(10), 1-14. https://doi.org/10.1371/journal.pone.0205114
- National Bureau of Statistics (2017) Nigerian Gross Domestic Report Q3
- Adekola, O., Mitchell, G., & Grainger, A. (2015). Inequality and ecosystem services: The value and social distribution of Niger Delta wetland services. Ecosystem Services. https://doi.org/10.1016/j.ecoser.2015.01.005;
- Adekola, O., & Mitchell, G. (2011). The Niger Delta wetlands: Threats to ecosystem services, their importance to dependent communities and possible management measures. International Journal of Biodiversity
 - Jacob Ainoo-Ansah (2013). The Successful Experience of Tilapia Farming in Ghana.
 - http://www.infopesca.org/sites/default/files/complemento/conferencias_eventos/documentos/919/Ocultos//2.1_The%20successful%20experience%20of%20tilapia%20farming%20in%20Ghana%20-%20Jacob%20Ainoo-Ansah.pdf.
 - Kassam, L. (2014). Aquaculture and food security, poverty alleviation and nutrition in Ghana: Case study prepared for the Aquaculture for Food Security, Poverty Alleviation and Nutrition project. WorldFish, Penang, Malaysia. Project Report: 2014-48. http://pubs.iclarm.net/resource_centre/2014-48.pdf.
 - Kwadjosse, Theodore. LOS: Impacts on the Conservation and Management of Fisheries Resources of Developing Coastal States: The Ghana Case Study. The United Nations The Nippon Foundation of Japan Fellowship Programme 2008 2009.http://www.un.org/depts/los/nippon/unnff_programme_home/fellows_pages/fellows_papers/kwadjosse_0809_ghana_ppt.pdf
 - Kwame Nkrumah University of Science and Technology (KNUST), Dept. of Fisheries & Watershed Management, Faculty of Renewable
 - GI WACAF (OMI / IPIECA), 2010. Plan National D'intervention D'urgence (PNIU) en cas de pollution marine accidentelle par les Hydrocarbures, 67 pages.
 - MEHU/ABE, Guide sectoriel d'étude d'impact sur l'environnement des projets du gazoduc. Collection ABE : Procédure d'évaluation environnementale, p. 32.
 - ASSEMBONI-OGUNJIMI (A. N.), 2006. Le droit de l'environnement marin et côtier en Afrique occidentale, Cas de cinq pays francophones, Thèse de doctorat en Droit public,
 - KLOFF (S.) et WICKS (C.), 2004 Gestion environnementale de l'exploitation du pétrole offshore et du transport maritime pétrolier, CEESP-UICN, Octobre 2004
 - PNUE http://www.unep.org/
 - http://www.nocal.com.lr/operations/block-status)
 - MERF, 2007. Etudes de vulnérabilité, identification des principales mesures d'adaptation et des options prioritaires de riposte aux changements climatiques Secteur Zone Côtière. Ministère de l'Environnement et des Ressources Forestières et PNUD MERF,

- 2009. Plan d'Action National d'adaptation aux changements climatiques PANA. Ministère de l'Environnement et des Ressources Forestières et PNUD
- PNAE, 2001. Plan National d'Action pour l'Environnement, Ministère de l'Environnement et des Ressources Forestières, Lomé, 173p.
- Eni Togo B.V., 2012. Etude d'impact environnemental et social de l'exploration pétrolière dans les blocs-1 et 2 de l'offshore togolais : phase de forage
- http://www.fao.org/3/a-i3917f.pdf (FAO 2014) circulaire sur les pêches et aquaculture n° 1093.