



GHANA: THROUGH THE LENS OF CITIZEN SCIENTISTS

Protecting Maritime Ecosystems
in Ghana's Oil-Producing
Coastal Areas.

Extractive Industries
Knowledge Hub



OXFAM

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INTRODUCTION

Oxfam in Ghana's Extractive Industries program, funded in part by the Norwegian Agency for Development Cooperation (Norad), contributes to responsible management and governance of Oil and Gas (O&G) resources through the promotion of active citizenship and the protection of community rights. The program aims to build the capacity of Civil Society Organizations (CSOs) to support communities to advocate for fair governance of O&G resources; engage the public on O&G issues through media and online platforms; and build the capacity of communities to influence decisions about how O&G resources are managed. This case study documents the power of citizen engagement for generating knowledge and action on environmental protection. With Oxfam's support, citizen's scientist clubs are monitoring the environmental health of their communities in Ghana's Western coastal areas and contributing to broader policy reform.

CONTEXT

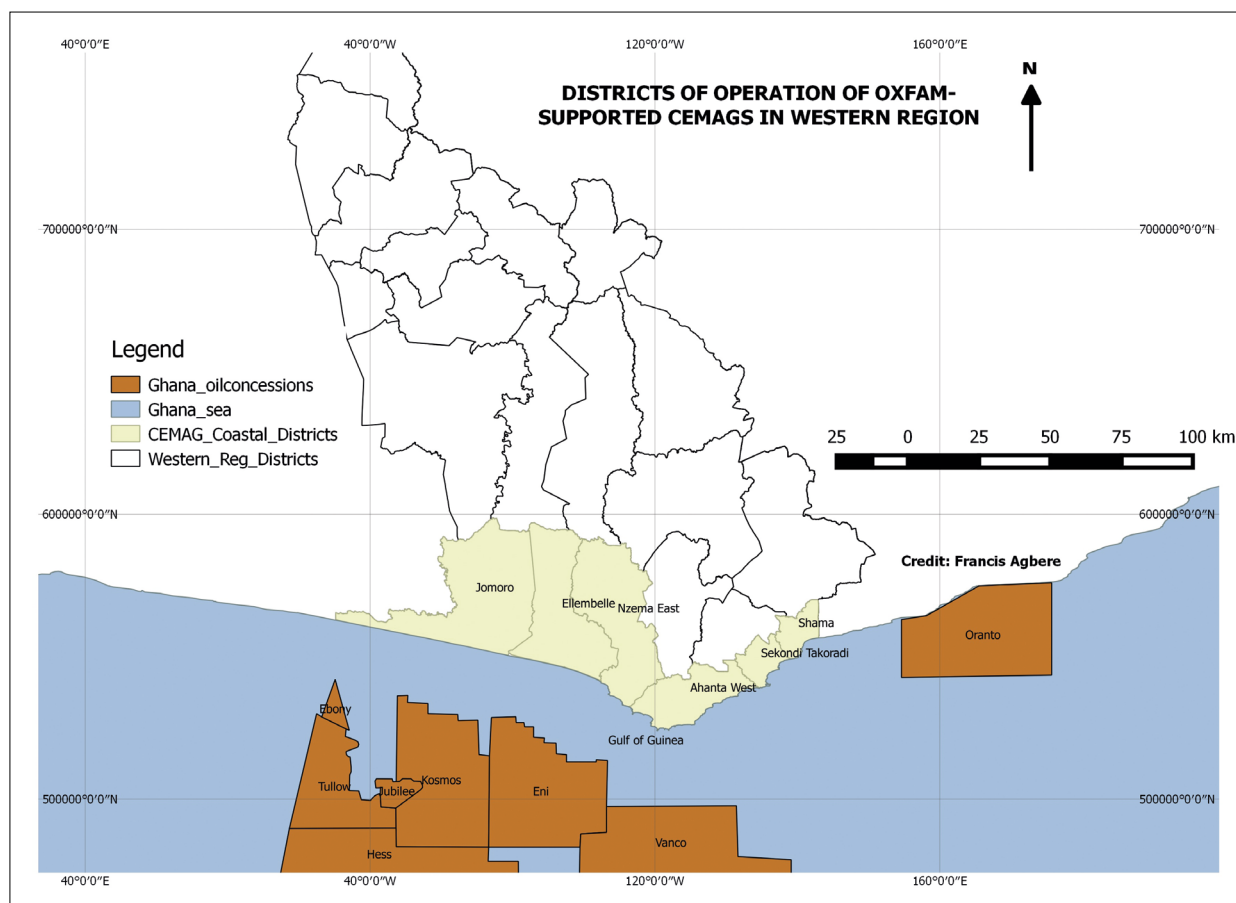
Ghana found crude oil in 2007. Communities in coastal areas where the off-shore oil deposits lay soon surfaced concerns based on the experience of neighbouring countries that struggled to make meaningful economic progress and that were plagued by environmental crises and spill pollution of farmlands and water bodies. Citizens, CSOs, and even government started raising questions about the adequacy of environmental protection laws, the lack of institutional oversight, and the low capacity of the state to regulate the new oil sector. When oil company Kosmos spilled about 706 barrels of low toxicity oil-based mud¹ in 2010, Ghana's Environmental Protection Agency (EPA) struggled to identify the incident on time or remedy the situation. In response to this void, civil society started pushing for the adoption of industry best practices and proposing improvements to existing regulatory frameworks.

Oxfam and partners Friends of the Nation (FON) and Centre for Public Interest Law (CEPIL) maintained consistent pressure around environmental governance with state regulators following Ghana's 2010 oil spill. In 2015, with an eye to generating broader knowledge, transparency and accountability on O&G issues, Oxfam and partners conducted an analysis of the laws that govern the country's extractive activities. Three years later, partners deepened this analysis by examining the gaps in existing environmental frameworks such as the Marine Pollution Bill and the National Oil Spillage Contingency Plan. The analysis looked at spillage-prevention provisions, commitments for protecting biodiversity, requirements for environmental

sensitivity mapping, and contingency planning. The gaps identified in these frameworks pointed to a lack of legislative preparedness for environmental governance and formed the basis for a policy paper outlining a comprehensive oil prevention and spillage contingency plan that Oxfam and partners have been using to influence the EPA towards better environmental protections. In parallel, CEPIL published a report that put forth concrete steps for action. Among these was the recommendation for an early warning system that placed communities at the front lines of identifying and reporting potential spills.

Building on the success of Ghana's Community Environmental Monitoring and Advocacy Groups (CEMAGs), in 2018 FON created citizen scientist clubs as working groups within the CEMAGs to provide a first line of defence in the case of potential oil spills. Citizen scientists are trained in marine ecological hazard detection using simple scientific enquiry tools. Men and women selected for the citizen's initiative examine ocean currents and tides, sample marine organisms, and trace their survival rates at different conditions to gauge any need for intervention by state regulators. Basic laboratories are set up in the communities to carry out these analyses. If citizen scientists determine there has been a disruption in the ecosystem, they promptly reach out to FON, who cross-checks the findings and offers further support as needed. FON in turn may escalate to the EPA sub-national offices. Citizen scientist have also been trained to champion biodiversity and have participated in local debates and national consultative processes on the need to improve contingency planning for wildlife conservation.

Since 2009, thanks to the community building efforts of FON, Ghana enjoys the presence of Community Environmental Monitoring and Advocacy Groups (CEMAGs) in its six Western coastal regions. CEMAGs are local structures tasked with monitoring issues of human rights, public financial management, and company and government behaviour around the governance of O&G resources. They are made up of community representatives including religious and traditional leaders, women leaders, and youth. Over the past ten years CEMAGs have built their authority as community advocacy groups and strengthened their influence over petroleum politics. Citizen scientist clubs are specialized units within the CEMAGs trained specifically on coastal early warning systems and biodiversity protection.



OUTCOMES/IMPACT

The impact of the citizen scientists is visible both at the community and at the policy level. At the **community level**, citizen scientists have built knowledge and elevated the profile of community work by giving CEMAGs, their parent structure, greater visibility and expertise. Citizen scientists have developed the theoretical foundations on environmental governance and basic marine biodiversity and have gained an understanding of different laws and frameworks governing the petroleum industry in Ghana. They have also learned about their rights in the face of oil exploration. Their laboratory work has demonstrated their preparedness in the event of a spill and their ability to sound the alarm for the early warning system.

Women leaders were instrumental in driving the enthusiasm for citizen scientists' work and transferring knowledge to younger generations. In fact, leaders not only took action as citizen scientists in their fishing communities, but they are teaching their children the

importance of protecting biodiversity for the future. Women play a major role through informal discussions with non-trained community members to educate them on their responsibility to care for the environment, which has helped ensure community support for the initiative.

"I have since the trainings collected brown mussels from the ocean and taught my son who is in Junior High School how to also record survival rates of these marine organisms and we are both leading this work" Citizen Scientist

At the **policy level**, well-functioning citizen scientists clubs advocate for commitments by the EPA and provide concrete examples to support Oxfam's and partners' asks for a stronger spillage contingency framework. To complement the efforts of the citizen scientists, the project engaged high school students on wildlife

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CASE STUDY EMELIA ABAKU-EDU, CITIZEN SCIENTIST

Source: Face-to-face interviews, 11th February 2020

Since 2014, Mrs Emelia Abaka-Edu, a native of Axim where Ghana's biggest oil fields are deposited offshore, has been a CEMAG member. She has taken part in many trainings on environmental and OSG regulations and related issues to promoting accountability in Ghana's petroleum sector. But according to her, becoming a citizen scientist has represented a turning point, both as a woman and as a parent. She says the citizen scientists initiative gave her a better appreciation of her role as an activist on environmental monitoring despite her lack of a formal science education. It showed she could take the lead in analyzing marine organism's survival rates, recording data, and tracing ocean currents to inform of any hazards exposure.

"I see myself now as a model in the community", she says with excitement about the lead role she plays in protecting fisheries against oil spillage. Emelia is happy that her son supports her in keeping records of ocean tidal levels and joins her in collecting samples for experiments. "My son is moved by this", she says. "This is motivating him to take his science studies

seriously". Currently, Emelia is one of many monitors who have set up home-based laboratories and are demonstrating to government regulators that citizen activism is crucial for oil spill-prevention and detection.



Emelia Abaka-Edu, a citizen scientist recording environmental data with her son.
Photo: Friends of the Nation

conservation efforts, and together they were able to shift the narrative around this important topic. In fact, in 2019 the EPA committed to incorporate wildlife protection contingencies in the Oil Spill Plan and to ensure that dedicated funds are allocated for the plan's implementation. While Oxfam and FON will continue pushing the EPA to concretize its commitment, given that Ghana's oil operations are maritime, any measures to ensure protection for biodiversity comes as considerable progress.

Citizen scientists are further contributing to demands for refocusing government resources on prevention (versus response), on systemic collection of geospatial data for potential impacted areas, and on improving legal protocols for addressing oil spillage. Equally as important, citizen scientist clubs provide evidence for broadening citizens environmental advisory committees within the local government.

WHY WAS THE INITIATIVE SUCCESSFUL?

While still a nascent initiative, we can identify several factors that contributed to making the citizen scientist clubs a success in a just a short time.

First, layering the citizen clubs on the CEMAGs allowed the program to capitalize on the presence of well-organized community leaders already advocating on OSG issues. The trainings to become citizen scientists deepened their existing knowledge of the petroleum sector, environmental consultations, and community mobilization. As members of the communities where they operate, citizen scientists have legitimized their work and elevated the profile of the CEMAGs as more focused and specialized units.

Second, carefully crafted policy asks based on sound research by Oxfam and partners combined with scientific evidence from the citizen scientists proved paramount in securing the EPA's commitment to including biodiversity

contingencies in its Oil Spill Plan. The citizen scientists' grasp of environmental topics and their credibility and ability to present concrete examples for the need for reforms ultimately moved the agenda forward. The approach further proved the feasibility of community oversight on oil spillages and is opening the doors for a structural response to enhanced community-led early warning reporting systems.

Third, a strong collaboration between Oxfam, FON, and CEPIL provided the right balance of skills and carefully knitted inputs. CEPIL brought knowledge of the legal system; FON brought environmental governance and community mobilization expertise; and Oxfam brought sophisticated research and strategic advocacy capacities. The deep relationships that these organizations held with

the EPA and other government entities from years of work on OSG governance opened spaces for citizen scientists to advocate the environmental agenda and provided leadership, guidance, and consistency.

LESSONS

Several lessons on the viability and sustainability of the citizen scientist clubs have emerged from this work:

- **Simplified and carefully-tailored trainings are crucial in fostering community activism on environment and oil and gas management.**

The unparalleled enthusiasm for this initiative was due to a carefully planned model that considered the citizen scientists interests and capabilities and that made their work pertinent to the oil producing communities where



A citizen scientist examining sample mussels in a laboratory. Photo: Friends of the Nation

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they live. Trainings allowed them to connect real life situations to their work. Links were made, for instance, between the need for clean maritime ecosystems and the food security of fisher communities. Exchanges with fellow citizen scientists from nearby communities further contributed to the enthusiasm and self-motivated action on environmental data collection and tracking.

- **Local knowledge, enthusiasm, and commitment are more important than formal scientific education.**

With even just basic reading and writing skills, citizen scientists had promptly understood the basics of environmental systems management and demonstrated capacity in delivering quality environmental monitoring, proving that technical and formal educational attainment are secondary to enthusiasm and commitment.

- **Community level environmental early warning systems are conducive to knowledge transfer.**

Since gaining new skills, activists returned to their villages and set up mini laboratories in their own homes. They started reading ocean tide levels, collecting sea organism samples, and conducting basic analysis of hazard exposure signs, while inviting others in the community to participate. Women scientists consistently demonstrated a transfer of knowledge to their children. These multiplier

effects of the training are contributing to the sustainability of the initiative and proving that the citizen scientists clubs are a viable approach to scale-up interventions in environmental early-warning systems.

CONCLUSION

Given their success, Oxfam and partners will continue leveraging the citizen scientists clubs to advocate for better legislative preparedness for environmental governance and improved environmental protections in Ghana's coastal regions. Oxfam will take forward its advocacy with the EPA to ensure that its recent commitment to include biodiversity in the Oil Spillage Plan is formalized into the next revision.

Furthermore, as a sustainability measure, Oxfam and partners are aiming to register the CEMAGs as formal community-based organizations. Their registration will cement the citizen scientists as experts in environmental governance and allow them to access funds for grassroots petroleum and environmental governance activities.

Finally, the project plans to formalize the relationship between the citizen scientists and the high school students by periodically bringing them together for knowledge sharing, thus building on early advocacy wins.



A THREE STEP APPROACH TO COMMUNITY-DRIVEN ADVOCACY IN GHANA



IDENTIFY ACTIVISTS

Identify activists in the community and train them as citizen scientists to monitor and report on marine hazards exposures

01



CONSOLIDATE ADVOCACY ASKS

Consolidate advocacy asks based on practical evidence provided by citizen scientists, as well as policy and gaps analysis carried out by Oxfam and partners

02



SECURE COMMITMENTS

Secure commitments in policy reform efforts from regulators through evidence roundtables and formalized advocacy spaces

03

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Oxfam's work on Extractive Industries

Oxfam supports the rights of communities to know about oil, gas, and mining projects, and to decide if they want these projects. Oxfam also helps track the revenues paid by companies to governments so that more of that money will be spent fighting poverty. Today Oxfam works to find just solutions to oil, gas, and mining issues in approximately 30 countries. This case study is part of a knowledge and learning series focused on Oxfam and partners' work influencing the oil, gas, and mining activities in selected countries.

Acknowledgements

We acknowledge the contributions of Friends of the Nation for organizing the annual learning event that provided insights into this case study. Special thanks to Scott Sellwood and Kate Stanley for curating the case study series.

Endnotes

¹ A drilling fluid used in drilling engineering



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