

MANAGING FOR GENDER EQUALITY RESULTS

Empowerment of women for equitable participation in the oil and gas sector

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SYNOPSIS

As Africa continues to set policies and frameworks for managing its fast-growing oil and gas industry, it has to ensure equal participation of men and women. Africa is home to some of the world's fastest-growing economies. In 2010, 16 of the 54 countries in Africa were exporters of oil¹. In 2011, 22 African countries produced crude oil, and 16 were net exporters. In 2012, 21 countries in Africa had proven oil reserves, and 24 had proven natural gas reserves. Yet in this bright picture, women stay mainly in the shade. This case study focuses on women's involvement in the oil and gas value chain in Africa, to generate insights on how it can be increased.

Key findings: In Africa, women currently represent a negligible fraction of the energy industry's workforce, and are particularly rare in engineering and the other technical fields that are the lifeblood of the oil and gas value chain. According to a Gender Assessment of the Ghana Energy Sector in 2010, women were underrepresented in energy sector organizations, hence their influence in decision making in energy was insignificant.² This was attributed to the low increase in the number of women in engineering and energy over the years due to the perception that engineering is a "man's field." This pattern prevails across Africa.

Key lessons: Gender stereotypes, discrimination, inexperience, limited education, weak policies, reproductive and child care responsibilities are the main challenges preventing greater input even if real efforts have been made the last years to increase women's role in strategic decision making. These challenges need to be tackled as part of a broad package of the general problems undermining women's participation in all socioeconomic sectors.

Key recommendations: A conducive environment for scientific talents to rise is required. African leaders need to support initiatives such as the African Institute for Mathematical Sciences (AIMS), the Next Einstein Fellowship, the African Union's Pan African Universities, and the World Bank's centers of excellence. African governments and partners need to build women's capacity, and encourage them to have a wider executive skills set to run companies. The continent's leaders should also develop national policies that encourage and support the participation of indigenous people in the sector more effectively, making special arrangements for involving more women. Civil society organizations should increase advocacy for governments to increase incentives for girls' education in general and in fields such as engineering, mathematics, and other science-related subjects. Finally African institutions should conduct evaluations to increase understanding of the hydrocarbons value chain and gender mainstreaming. African regional bodies and think tanks need to support in-depth research and discussions on these issues to ensure increased benefits for Africans from the sector.

¹ Nigeria, Angola, Libya, Algeria, Sudan, South Sudan, Equatorial Guinea, Republic of Congo, Gabon, Chad, Egypt, Tunisia, Cameroon, Côte d'Ivoire, Democratic Republic of Congo, and Mauritania.

² <http://afrik4r.org/forum/topics/economic-empowerment-of-african-women-building-their-capacity-for>.

Introduction

Income discrepancies between men and women

Women earn less money than men and have less workplace stability. They perform 66 percent of the world's work and produce 50 percent of its food, yet earn only 10 percent of global income and own 1 percent of property worldwide (OECD 2012; 2014). Women make up 60 percent of the global working poor and earn an average of 10–30 percent less than their male counterparts in comparable jobs. A recent report by ActionAid (2015) indicates that economic inequality brought about by gender disparity costs the world economy \$9 trillion annually. This enormous figure not only drags down economic opportunities for women in the developing world, but also causes stagnation in economic growth (UN Women 2015a). The importance of women's economic empowerment to sustainable development (and to pro-poor growth) cannot be overemphasized. Achieving it requires sound public policies, a holistic approach, long-term commitment, and gender-specific perspectives integrated at the design stage of policy and programming (UN Women 2015a).

One of the biggest reasons for income inequality is that women play a greater role than men in homemaking (UN Women 2015b). However, the work these women do at home (preparing food, cleaning, nurturing children to maturity) often goes unnoticed and certainly unpaid. These tasks end up consuming the most productive years of a woman's life by removing them from participation and influence in the nation and workforce. Fortunately, global initiatives, such as those set out by Agile International to empower women and girls in Africa, are working to ensure a positive future for the women of the developing world (ibid).

Income inequality is therefore not just an economic issue but one deeply rooted in social and political foundations. For example, many African communities still hold the view that women are better placed as housewives and mothers than as working professionals (ActionAid 2015; UN Women 2015a). These beliefs are entangled with political efforts to streamline laws and protect the rights of women and girls, as is happening in some African

countries such as Kenya and Tanzania where laws have been passed to make primary and secondary education compulsory and free. Kenya has also set up a commission to sensitize cultural communities against practices such as early marriage and female genital mutilation. This commission is critical for women's advancement and ensuring that rural teenage girls do not miss or drop out of school due to outmoded practices. Income inequality will therefore continue to affect the global economy as long as governments and organizations fail to focus on empowering women to facilitate gender equality.

Women's participation in African business

Participation of women in business in Africa is low, especially in the oil and gas sector, which remains male dominated. With economic growth in Africa and numerous discoveries of oil and gas fields in recent years, such participation is more important than ever for Africa to achieve inclusive economic growth. According to the Africa Progress Panel report (2016), 2016 will be a year of transformations in energy, finance, technology, and global partnership, and will have profound effects on Africa. For example, the Africa Progress Panel is calling for a 10-fold increase in power generation in Africa by 2030. Moreover, in recent years, the political ambition across Africa to totally transform the energy sector has become far more marked. The global context is also shifting in light of the 21st Session of the Conference of the Parties (COP21). The African Development Bank's New Deal on Energy for Africa will encourage a broad coalition to seize the momentum of 2015 and achieve quick wins by 2020.

Globally, not many women are employed or doing business in the oil and gas value chain, despite their number: Only 7.8 percent of global workers in the sector are women (Gulf Intelligence 2015). Moreover, the earlier transformation and developments in the sector have not been inclusive of women, especially black women in Africa. To ensure that they access equal opportunities in oil and gas, women themselves must focus on addressing their position, and a deliberate push is required to facilitate their participation in business opportunities in oil and gas in their countries and

throughout Africa. This will bring about increased economic growth and development.

Impacts of investment in women's development

Countries that underinvest in women are associated with sluggish poverty reduction efforts and economic development, while those that invest in them and provide them with top-level management opportunities record strong socioeconomic development (Bangura 2014: 1). Winihin Ayuli-Jemide (2014) argued that one of the reasons South Africa was the dominant economy in Africa for such a long time is that women were involved in businesses of all sizes. In Brazil, when adequate income is in the hands of mothers, the survival probability of a child increases by about 20 percent, and in Kenya, a child will be about 17 percent taller with increased mother's income because mothers invest more of their income in child health and nutrition.³ Moreover, despite strong economic growth in resource-rich countries, some remain at the bottom of the international league table for human development (World Economic Forum 2013). Other such countries register some of the world's largest inequalities in wealth and well-being (World Economic Forum 2013).

Overview of the oil and gas value chain

The hydrocarbons industry encompasses a range of activities and processes that contribute to the transformation of underlying petroleum resources into end products valued by industrial and retail customers. These activities are linked to each other (conceptually, contractually, and/or physically), and these links occur within or across firms, and within or across national boundaries. "Value chain analysis," as popularized by Porter (1985), investigates the sequence of discrete activities required to bring a product or service from conception and procurement, through the phases of production and distribution, to the final customer. This case study considers the value chain for oil and gas.

The value chain starts with identifying areas to explore for hydrocarbons resources. After initial exploration, petroleum fields are appraised, developed, and production starts. These activities are generally called exploration and production (E&P), or upstream activities. Oilfield services cover a number of auxiliary services in E&P, such as seismic surveys, well drilling, equipment supply, or engineering projects. They form an important part of the overall oil and gas industry (and over the past decades have gained in expertise and importance in Africa). Infrastructure such as transport (pipelines, access to roads, rail, ports, and so on) and storage are critical at various stages in the chain, including the links between production and processing facilities, and between processing and final customers. These parts of the value chain are usually referred to as midstream. Oil refining and gas processing are required to turn the extracted hydrocarbons into usable products. The processed products are then distributed onward to wholesale, retail, or direct industrial clients—refining and marketing—also referred to as downstream activity. Some oil and gas products represent the principal feedstock for the petrochemicals industry, which explains the close historical and geographic links between the two.

Individual companies can cover one or more activities along the value chain, implying a degree of vertical integration. Integrated firms are engaged in multiple successive activities, typically E&P and refining and marketing. They can also seek to expand within a given activity, in horizontal consolidation (business scale). At country level, horizontal scale in the upstream is limited by natural resource endowments, and further downstream by the size of the domestic market and/or the ability to export goods and services. Vertical portfolio choices at country level can be made using regulatory and licensing tools, such as approval (or not) to build certain processing facilities or infrastructure such as pipelines.

³ <http://afrik4r.org/forum/topics/economic-empowerment-of-african-women-building-their-capacity-for>.

Women in the hydrocarbons sector

This study aims to establish the reasons for the low participation of women in the oil and gas value chain and what needs to be done, given recent discoveries of oil and gas in African countries such as Ghana, Kenya, Mozambique, Tanzania, and Uganda. The data were collected through desk reviews.

Africa is home to some of the world's fastest-growing economies, many of them buoyed by new oil and gas finds. In 2010, 16 of the 54 countries in Africa were exporters of oil (US EIA).⁴ In 2011, 22 African countries produced crude oil, and 16 were net exporters (US EIA; KPMG 2013). In 2012, 21 countries in Africa had proven oil reserves, and 24 had proven natural gas reserves (US EIA).

Yet in this bright picture, women stay mainly in the shade. The share of female directors in oil and gas firms around the globe is 11 percent and most of them are in non-executive positions. Only 1 percent of executive board seats are held by women (BBC 2015). The situation in Africa is little different (BBC 2015). This calls for the global industry to accelerate efforts to empower women and close the sector's gender gap. In 2012, only 7.8 percent of the global oil and gas workforce was female (Hays Oil and Gas Global Salary Guide), a slight increase on the 7.1 percent a year earlier (Gulf Intelligence 2015: 4).

In Africa, women currently represent a negligible fraction of the energy industry's workforce, and are particularly rare in engineering and the other technical fields that are the lifeblood of the oil and gas value chain. According to a Gender Assessment of the Ghana Energy Sector in 2010, women were underrepresented in energy sector organizations, hence their influence in decision making in energy was insignificant.⁵ This was attributed to the low increase in the number of women in engineering and energy over the years due to the perception that

engineering is a "man's field." This pattern prevails across Africa.

Thus the oil and gas industry is still overwhelmingly male, with surveys (such as Price Coopers 2015) showing that the executive boardrooms of oil and gas companies are mostly boys' clubs. African women constitute a tiny fraction of the oil and gas labor force, but empirical data are limited. There would, however, seem to be encouraging developments in some parts of Africa.

Uganda has a female minister heading the Ministry of Energy and Mineral Development. An engineer, she worked in a senior position in the former Uganda Electricity Board and has been central to negotiating Uganda's oil agreements.

In South Africa, a women's group known as Women in Oil and Energy South Africa (WOESA) was established in 2002.⁶ WOESA's mandate is to facilitate and promote business opportunities for women and to enhance the participation of South African women in the oil and energy sector by: facilitating broad involvement of women in the energy sector; interfacing with all relevant stakeholders in order to foster a conducive environment for the empowerment of women; and creating a platform and network for women in the oil and energy sector. WOESA is partly not for profit, with nearly 300 members drawn from women-owned companies countrywide, in several sectors. WOESA serves as a vehicle for gender mainstreaming in oil and gas. It is involved in various projects, including infrastructure, which provide training courses and access to business opportunities to women as they collaborate with government agencies and other organizations. WOESA is an example of the "incubators" needed for women's empowerment in the energy sector. Its replication in other African countries should be encouraged.

⁴ Nigeria, Angola, Libya, Algeria, Sudan, South Sudan, Equatorial Guinea, Republic of Congo, Gabon, Chad, Egypt, Tunisia, Cameroon, Côte d'Ivoire, Democratic Republic of Congo, and Mauritania.

⁵ <http://afrik4r.org/forum/topics/economic-empowerment-of-african-women-building-their-capacity-for>.

⁶ See Williams (2004: 1–32).

Challenges facing WOESA as a partial nonprofit body include raising finance for operating costs and to maintain the office and interact with members and stakeholders; inadequate backing from government and public institutions; erratic support by energy sector companies; and retaining the interest and enthusiasm of board members given that they have their own businesses and receive no board fees and carry their own costs for WOESA activities.

In Nigeria, a number of well-financed businesswomen are aiming to change male dominance in the oil and gas industry. The Petroleum Minister, Diezani Alison-Madueke, is a powerful figurehead for them. Nigeria, the world's 14th-largest oil-producing country, has taken steps to open up its oil industry to locals, a policy known as "indigenization." Catherine Ujulfejika—the chair and chief executive of Britannia U Group in Nigeria, a group of oil and gas companies—is one of Africa's few female oil industry bosses. Her business bought a stake in a major oil and gas field, Ajapa. Britannia U is an indigenous integrated company.

In Sierra Leone, the government's Finance Act of 2016 provides for a tax cut of up to 6.5 percent for any company employing women in managerial positions. With the oil industry picking up momentum in the country, the industry should take advantage of this incentive.

Review of African women's participation

The main challenges to women's participation in the oil and gas value chain are external factors related to negative stereotypes, discrimination, and weak policies; internal factors, related to limited education; and natural factors, tied to reproductive and caregiving responsibilities.

In Uganda, for example, according to the AfCoP online discussion in February 2016, at Parliamentary level, discussions about oil and gas issues are usually dominated by male legislators, understandably so

because many of them have the impression that these are scientific issues in which they have expertise. At local level, civil society groups such as Global Rights Alert, Africa Institute for Energy Governance, ActionAid International Uganda, and the Uganda National NGO Forum work with communities to create awareness on oil and gas resources and building their capacity to engage in the ongoing debate on openness and transparency of the sector.

Parliamentary dominance of males in Uganda on these issues points to challenges facing female parliamentarians in Rwanda despite their numerical dominance in the lower house of Parliament. Women hold 63.8 percent of the 80 seats in the Lower House, and 38.5 percent of the 26 seats in the Senate.⁷ Rwanda's efforts to fulfill female quotas and special representation in Parliament, informed by changed gender roles after the 1994 genocide, has seen inexperienced women elected to Parliament (Powley 2003: 160). In Namibia, the government has endorsed 50:50 gender representation in Parliament. Their representation stands at 43 percent.⁸

Identifying, analyzing, and advocating the participation of women in the hydrocarbons sector are in line with efforts in other sectors. But there is too little political will to put in place mechanisms for participation.

Going back to Catherine Ujulfejika, she faced many challenges, including lack of appreciation and approval from team members. She also struggled to access capital from banks. Having no prior formal training and educational background in oil and gas engineering, she went through trial and error to run an oil and gas production and servicing company and keep it buoyant. She also had concurrent duties as an entrepreneur, leader, wife, and mother.

But despite these challenges, she succeeded in developing her oil and gas company because she was able to convince the bank to provide her with the

⁷ See World Classification of women representation in parliament at <http://www.ipu.org/wmn-e/classif.htm>.

⁸ See World Classification of women representation in parliament at <http://www.ipu.org/wmn-e/classif.htm>.

money to run the business. She also partnered with international companies to expand her clientele and boost her company's turnover. These initiatives increased the company's activities and its credibility in the sector. Capacity building in leadership skills enabled her to set up and run the company as she had no formal training in oil and gas engineering. She learned the necessary skills that helped her to understand technical details and lead the group. She also managed to separate her business from family responsibilities.

African women in science and engineering

The number of women in science and engineering in Africa is still below 20 percent (UIS 2014). Their success in science has been hampered by lack of support for science and research by government and inadequate awareness on how to access local and international funding agencies. For women to overcome these hurdles, they have to be intrepid, hardworking, and persistent—usually more so than men. Unless women are encouraged to pursue science-oriented disciplines, Africa will lag behind other developing regions on education, research, and technology as science can solve many of the economic, ecological, and health problems facing Africa.

Still, two initiatives show how to increase the number of African women in science and engineering: the African Institute for Mathematical Sciences (AIMS) and the African Women in Science and Engineering organization (AWSE).

The African Institute for Mathematical Sciences

This is a pan-African network of centers of excellence enabling Africa's talented students to become innovators driving the continent's scientific, educational, and economic self-sufficiency.⁹ AIMS is committed to global best practices in management, accountability, and oversight. Founded in early 2000, it is Africa's first and largest network of centers of excellence in mathematical science, with world-class

scholars and academics from more than 36 countries. Mathematical science encompasses math itself, physics, chemistry, economics, and statistics. AIMS has trained hundreds of scientists from 41 African countries (New African, May 2016). In June and July 2014, AIMS South Africa, Ghana, Senegal, and Cameroon held their graduation ceremonies for the 2013/14 class. There are now 741 AIMS alumni throughout the world (AIMS 2015).

AIMS is one of several institutes established in recent years. Others include the Nelson Mandela Institute of Technology, the World Bank centers of excellence, and the African Union's Pan African Universities.

On the gender front, AIMS believes that mathematics is a universal tool and that everyone should have equal opportunities to access and use mathematics to fulfill their potential and to transform Africa. Since it was set up in 2003, AIMS has kept the share of women graduates at an average of 30 percent. But AIMS recognizes that more needs to be done to ensure that more young girls and women enter and succeed in higher education and research programs in the mathematical sciences; more young girls and women are aware of and are prepared to take advantage of the career opportunities open to them in the mathematical sciences; and there is a greater awareness among women, girls, men, and boys of the important role of women and girls as equal contributors to African development through the mathematical sciences.

AIMS commissioned an external gender audit in 2013, entailing a comprehensive gender review of policies, procedures, practices, and perceptions of AIMS centers in South Africa, Ghana, and Senegal, and of the AIMS Global Secretariat. The audit confirmed that AIMS has taken several meaningful steps to create an inclusive and gender sensitive learning and living environment for all its students, with wider impacts for gender equality.

AIMS has also been working to promote gender equality by reaching out to several women science

⁹ <http://nexteinstein.org/>.

organizations including Women in Global Science and Technology; AkiraChix; African Women Forum for Science and Technology; the African Centre for Women, Information and Communications Technology; and the Association of South African Women in Science and Engineering. Advertisements for AIMS research, lecturing, and study opportunities were made through these organizations to their members.

Each AIMS center conducts visits to local primary and secondary schools to encourage all students, and specifically young girls, to continue their math and science studies. AIMS South Africa hosted the second African Women Mathematicians workshop over July 17–19, 2013 which was attended by 33 women scientists. It led to the creation of an association of African women in mathematics supported by AIMS.

The African Women in Science and Engineering organization

AWSE is an organization that serves women scientists and engineers, through chapters in several African countries.¹⁰ It aims to create a critical mass of African women scientists through empowerment programs and to highlight and enhance their contributions in research, education, and the development of the continent. AWSE was inaugurated in 1999 in Nairobi, Kenya during a meeting designed to bring together women in all fields of science and engineering from all over Africa, to make African women scientists conspicuous and conscious of what their counterparts were doing and to enhance collaboration between women scientists.

Encouraging women into the oil and gas industry

African states could consider the following approaches to address the factors limiting participation of women in the oil and gas industry.

Opportunities at engineering schools and universities should be created to ensure greater enrollment of young women in mathematics and science subjects. These institutions are highly specialized, demanding

skills in mathematics, statistics, chemistry, and physics. Generally, women prefer social sciences, thus are less often enrolled in technical sciences. Women should be encouraged to engage in technical studies through special scholarships. Some African states have started promoting women studying science subjects. For example, the government of Sierra Leone has special incentives for women opting for engineering and general science courses: Female students enrolling in these disciplines are automatically provided with grant-in-aid by the government (per Michael Margai, an offline contributor to this discussion).

The education systems ought to be dynamic, responding to the demands of the economy. As the exploration and harnessing of oil and gas are at a peak in Africa, the education system should design courses covering this industry, targeting female and male students. Parents should take an active part in motivating their female children to take courses in oil and gas production and management. Encouraging and rewarding innovations in school systems is critical. Hydrocarbons companies can support government policy initiatives with financial and technological resources to train more women and girls in sector skills. They should also establish young professionals' programs that can expose young women to practical experience.

Oil and gas companies should engage more with young women at school and university, providing role models and an opportunity to see for themselves what the sector has to offer through visits and paid internships. This will ensure that these firms benefit from the untapped talent of female engineers.

Technical and managerial capacities and skills of girls and women need to increase, alongside investment in science and technology. Some African countries' commitments to women in government are laudable, but firms and governments have still to achieve the same in managing strategic resources such as hydrocarbons.

¹⁰ <http://www.aawse.org/>.

Conclusions and recommendations

The challenges facing women's participation in oil and gas value chains are external (stereotypes), internal (education), and natural (caregiving). It is therefore necessary for African governments and stakeholders to address these challenges so that the booming oil and gas industry in Africa can benefit men and women equally and reduce gender and income inequality in the management of the industry.

Addressing the limited participation of women in the oil and gas industry in Africa is part of a broad package needed to address the general problems limiting participation of women across all socioeconomic sectors. This generic approach to empowering women will release their potential to intervene in nontraditional sectors, such as oil and gas. The need remains, however, for special targeting of assistance to women.

Fostering a conducive environment for scientific talent is an area of increasing interest to African policy makers and partners and one that organizations such as AIMS and the Next Einstein Fellowship, the African Union's Pan African Universities, and the World Bank's centers of excellence are addressing.

Based on the case study's findings, the following policy options are recommended:

- African governments and partners need to build capacity of and encourage women to have a broader executive skills set to run companies, including oil and gas firms. This includes giving greater support to AIMS and AWSE.
- African governments should build capacities of women to think big and achieve greater heights—from earlier school life and in communities.
- There's need for African states to develop national policies that support participation of indigenous people in the oil and energy sector more effectively. They should make special arrangements for more women's involvement.
- Civil society organizations should increase advocacy for governments to raise incentives for the girls' education in general, and in fields such as engineering, mathematics, and other sciences related to oil and gas production.
- Womens' movements and support groups should be strengthened and supported across the region.
- African and regional institutions should conduct an evaluation to understand the oil and gas value chain vis-à-vis gender considerations. Together with think tanks, they should also support in-depth research and discussions on these and related issues to ensure increased benefit of the African people from the oil and gas industry.

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